82- SUBMISSIONS FACING SHEET

Follow-Up Materials

MICROFICHE CONTROL LABEL

REGISTRANT'S NAME Novozymes A/S

*CURRENT ADDRESS Krogshojvej 36
DK-2880 Bagsvaerd
Denmark

**FORMER NAME

**NEW ADDRESS

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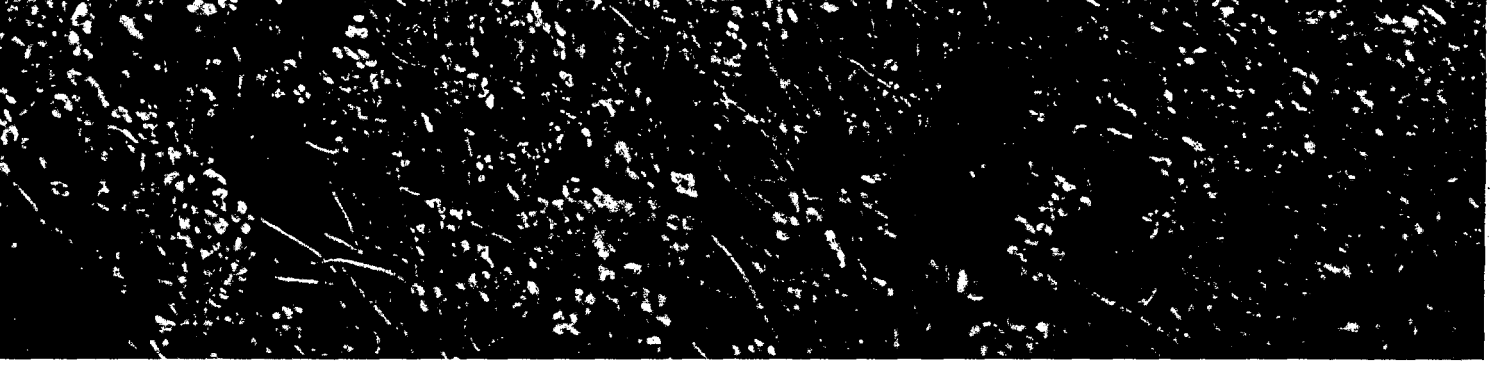


Enzymes provide healthy oil in Japan

The healthy oil from Japan

Kao Corporation of Japan has developed the world's first cooking oil that prevents fat deposits in the body. The oil is produced with the help of enzyme technology from Novozymes.

A speciality vegetable oil prepared using an enzyme from Novozymes has become a very successful new food product in Japan. With the help of enzyme technology from Novozymes, the large Japanese manufacturer of everyday household products, Kao Corporation, has developed a speciality oil that reduces body fat. The product is called Healthy Econa Cooking Oil and can be used in the same way as conventional edible oils. Although Econa oil retails at a price up to five times that of normal oil, it has already captured 80% of the premium cooking oil market in only two years.

Diglyceride

The main ingredient of Healthy Econa Cooking Oil is diglyceride, which is made enzymatically from natural oil. Diglyceride is digested and absorbed in the small intestine and is consumed as energy without transforming into a neutral fat like conventional oil consisting of triglyceride. (Diglyceride is glycerol with two fatty acids, whereas triglyceride has three.) As a result, it reduces the level of neutral fat in the blood compared with conventional oil.

Long-term use of this oil will prevent the increase of body fat, especially fat that deposits in the internal organs. Healthy Econa Cooking Oil therefore helps in the fight against obesity, a quality that has been supported by the approval of Econa as a Food for Specified Health Use by the Japanese Ministry for Health, Labour and Welfare.

Japan has an increasingly overweight population. According to a new report from the Japanese Ministry of Health, Labour and Welfare, half of men over 30 and women over 50 years old suffer from hyperlipemia, an excess of fat in the bloodstream. As many as 34% of men in their twenties suffer from hyperlipemia.

Tastes the same

Back in the 1980s, Kao Corporation, whilst working on other new products, by chance came up with the idea of using enzymes to make diglyceride which does not transform into body fat. If used in cooking oil, the result would be a less fattening oil. As a long time partner of Kao, Novozymes was introduced to the problem and gradually improved the enzyme technology.

One of the advantages of the Econa oil is that the taste is like any other high-quality vegetable oil. This is an important factor in the success of Healthy Econa Cooking Oil. Although new food products need to be healthy, above all they need to be tasty. Customers will not compromise on taste in the long run.

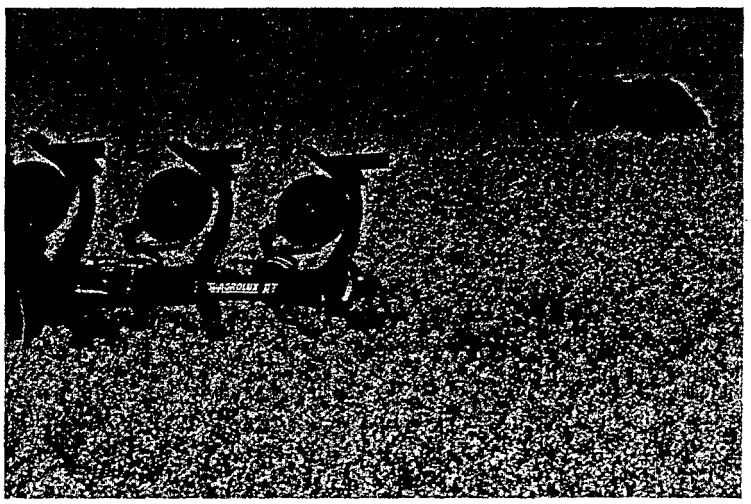
Healthy Econa Cooking Oil also has the same amount of calories as normal oil. Customers will therefore feel full and will not need to snack between meals.

Demand outstripped production when the new oil was first launched in February 1999. Today, a range of Econa salad and cooking oils are sold at around 40,000 stores in Japan. Sales of Healthy Econa Cooking Oil account for 80% of premium oils, which constitute around 14% of the total edible oil market worth around 10 billion yen. The oil is also used in processed products such as tinned tuna, margarine, salad dressings and bread.

USA next in line

Kao is starting a joint venture with one of the largest vegetable oil producers in the world, Archer Daniels Midland Company in Illinois, USA, with the initial purpose of producing oils for use in food production. The partners are currently awaiting an answer from the US Food and Drug Administration on the labelling of future products of the Econa type.

Despite the success with Econa Healthy Cooking Oil in Japan, sales to the fats and oils industry make up only a relatively small percentage of Novozymes' total sales to the food enzymes market. It is expected that this area of business will develop healthily in the future, although this will depend on the commercial success of the oil products, the decision by the authorities on the labelling of oils, and finally Novozymes' efforts within product development. Seen in the light of the aforementioned opportunities, enzymes for fats and oils have been appointed a special focus area within Research & Development. ■



Financial results for the first half of 2001

	2001		2000		%*)
	DKK million	EUR million	DKK million	EUR million	
Technical enzymes	***1,677***	*225*	*1,703*	*229*	***(2)***
of which detergent	**1,112**	149	1,153	155	**(4)**
Food enzymes	***631***	*85*	*532*	*71*	***19***
Feed enzymes	***200***	*27*	*132*	*18*	***52***
Net turnover	**2,508**	337	2,367	318	**6**
Operating profit	**385**	52	318	43	**21**
Net financials	**(3)**	(0)	(32)	(4)	**-**
Profit before tax	**382**	51	286	38	**34**
Tax	**118**	16	92	12	**28**
Minority interests	**(1)**	0	1	0	**-**
Profit after tax	**263**	35	195	26	**35**
Earnings per DKK 10 share (DKK)	**3.52**	0.47	2.59	0.35	**36**
Average A and B shares in issue (million)	**74.7**	74.7	75.4	75.4	**(1)**
Free cash flow	**96**	13	118	16	**(19)**

(The half-year accounts are unaudited.)

Conversion to EUR is based on the conversion rate as of 30 June 2001 (DKK 7.44).

*) Development from 1st half 2000 to 1st half 2001.

In accordance with the Group's accounting policies earnings per share are calculated on the basis of the result for the period divided by the sum of the weighted average number of shares and number of options "in the money". Options "in the money" are defined as the options for which the price at issue is lower than the market price at the close of the 2nd quarter of 2001.

The accounting policies are unchanged from Novozymes A/S' financial statement of 21 February 2001.

Financial statement for the first half of 2001

Sales rose by 6% to DKK 2,508 million in the first half of 2001 compared to DKK 2,367 million for the equivalent period of the previous year. Sales in the first half of 2001 are negatively affected by a planned buy-back of inventory from Mitsui, Novozymes' distributor in Japan. Adjusted for this buy-back, sales rose by approximately 8%.

Operating profit rose by 21% to DKK 385 million. The high rate of increase should be considered in the light of a relatively moderate result in the first half of 2000, especially in the first quarter of 2000.

Profit before and after tax was respectively DKK 382 million and DKK 263 million, equivalent to an increase of 34% in profit before tax and 35% in profit after tax against the first half of 2000.

The profit before tax is positively affected by net foreign exchange gains relating to Novozymes' hedging transactions which amount to DKK 45 million, compared to a loss of DKK 24 million in the first half of 2000.

Earnings per share (diluted) increased by 36% to DKK 3.52 from DKK 2.59.

The acquisition of Sybron Biochemicals announced as of 1 June was accomplished as of 1 July 2001, and Sybron Biochemicals is therefore not included in the accounts for the first half-year, with the exception of the payment, which is included in the cash flow.

Sales

Sales increased by 6% from DKK 2,367 million in the equivalent period of 2000 to DKK 2,508 million. Volumes, prices and product mix in the market accounted for 6% of the increase, while exchange rate movements increased sales by 2%, and the inventory buy-back in Japan reduced sales by 2%.

Particularly high growth rates were seen in North America and Europe, while sales to Asia were lower than in the first half of 2000 due to the previously announced inventory buy-back. There was a moderate sales decline in Latin America.

The buy-back of the enzyme inventory from Mitsui, Novozymes' distributor in Japan, took place in connection with the planned adjustments to the sales and distribution organization in Japan. Novozymes and Mitsui have established a joint sales and distribution company in order to sharpen focus on sales opportunities in Japan.

Sales of technical enzymes decreased by 2%. Sales to the detergent industry continue to be affected by keen competition. Sales of the more traditional detergent enzymes, such as proteases, are especially subject to pressure on prices.

There was a moderate increase in sales of other technical enzymes. While sales to the fuel alcohol industry rose, sales of enzymes to the leather industry declined as a consequence of export restrictions introduced due to the foot and mouth crisis. Moreover, sales to the textile industry fell as a consequence of greater competition, together with a decline in the size of the overall market.

Adjusted for the inventory buy-back during the period sales of technical enzymes rose by around 1%.

Sales of enzymes to the food industry show continued growth, rising by 19%. Especially the baking and beverage segments contributed to the sales increase, but enzymes to produce other food products also made good progress.

In North America, growth rates for sales of food enzymes continue to be substantial.

Sales of feed enzymes increased by 52%. The EU's extension of the ban on meat and bone meal in animal feed contributed to the ongoing expansion since Novozymes' product Bio-Feed® Phytase is increasingly replacing this source of phosphate.

Costs and licence fees and other operating income

Total costs excluding net financials and tax rose by only 4% to a total of DKK 2,123 million. The increase in costs was thus lower than the sales increase. The lower cost increase is related to production, sales, administration and R&D.

The ongoing productivity improvements in production have more than offset the rising costs of raw materials and energy.

The total depreciation charge for the first half of 2001 was DKK 246 million, compared to DKK 243 million for the equivalent period of the previous year.

Net financials

Net financial expenses were DKK 3 million, compared to net financial expenses of DKK 32 million in the first half of 2000.

Novozymes achieved net foreign exchange gains of DKK 45 million, compared to a loss of DKK 24 million in the first half of 2000. This is attributable primarily to realized and unrealized gains from the hedging of the Group's USD and JPY exposures.

Novozymes recorded net interest expenses of DKK 37 million, up from DKK 36 million for the same period of 2000.

Other financial items were negative at DKK 11 million in total, compared to gains of DKK 28 million in the first half of 2000 relating to gains on sale of securities.

Profit before and after tax

Profit before and after tax was respectively DKK 382 and 263 million, equivalent to increases of respectively 34% and 35%. These rates of increase should be compared to the relatively modest result for the first half of 2000, especially in the first quarter of 2000.

Free cash flow

Free cash flow was DKK 96 million. This includes the acquisition of Sybron Biochemicals (now Novozymes Biologicals). For the year as a whole the positive free cash flow excluding acquisitions is still expected to be at the same level as in the year 2000.

Development in shareholders' funds

The Group's shareholders' funds were DKK 3,835 million at the end of the first half of 2001, compared to DKK 3,771 million at the end of 2000. The development in shareholders' funds reflects the addition of the profit after tax for the half-year of DKK 263 million, less buy-back of own shares at DKK 316 million, as well as positive exchange rate adjustment of net assets in foreign subsidiaries and other minor adjustments totalling DKK 117 million.

Total assets were DKK 8,008 million, compared to DKK 8,218 million at the end of 2000.

Share buy-backs and holding of own shares

As of 30 June 2001 Novozymes' holding of own shares (Treasury shares) comprised 2,007,354 B shares, equivalent to 2.7% of the total number of shares in issue. Between 31 March 2001 and 30 June 2001 Novozymes invested DKK 98 million in shares buy-back, which corresponds to acquisition of 512,150 B shares.

Changes in the Board of Directors

As of 1 September 2001, Mr. Lars Bo Køppler replaces Mr. Thomas Sandal as one of the three members of the Board of Directors elected by the employees.

Outlook for 2001

The outlook for 2001 is unchanged from the expectations announced in connection with the last financial statement. Turnover growth, including Novozymes Biologicals, is expected to be just over 6% on the year 2000. This is subject to the provision that exchange rates, espe-

SHAREHOLDERS' MAGAZINE

31 August 2001

Welcome by Steen Riisgaard

DEAR SHAREHOLDERS,

Welcome to this second edition of Novozymes' Shareholders' Magazine, in which we present our results for the first six months of 2001 as well as the new initiatives to push our technology base beyond enzymes for industrial use.

I am pleased to announce that we are still on track to deliver our promised financial results for 2001, despite slowdown in the world economy and difficult market conditions in a number of industries around the globe. We are still committed to fulfilling the promises made for the full year.

In February 2001 we announced that we would pursue business opportunities within our competencies but outside the market for enzymes for industrial use, and in this edition we are proud to present the first step in this direction – the acquisition of Sybron Biochemicals, now renamed Novozymes Biologicals, a US-based market leader in applied microbiology products.

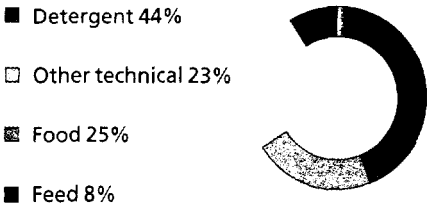
Through the new initiatives and acquisitions, Novozymes will continue Unlocking the magic of nature.

Yours sincerely,
Steen Riisgaard, president & CEO

novozymes®

Unlocking the magic of nature

– distributed on industry segments



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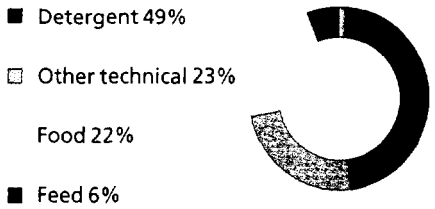

cially USD and JPY against DKK, remain at the current level for the rest of year.

For the year overall, moderate growth in sales of technical enzymes in the range of 1% is expected. Growth in sales of food enzymes is estimated at a level of 15%, while growth in sales of feed enzymes has been adjusted upwards to around 25%. Novozymes Biologicals' turnover in the second half of 2001 is expected to boost sales growth by a good 1 percentage point.

After adjustment for the inventory buy-back previously described this corresponds to total sales growth at the level of 7%.

- Operating profit is expected to increase by around 10%.
- Net financial expenses are estimated at around DKK 40 million in 2001.
- The effective tax rate is expected to be at the level of 31%.
- Profit after tax is expected to increase by around 25% against the year 2000.
- Capital expenditure, excluding acquisitions, is not expected to exceed the depreciation charge for the year.
- The operating profit margin and return on invested capital, defined as ROIC, are expected to develop positively against the year 2000.

New strategic initiatives

Novozymes has completed its annual strategy review, including its analysis of how the company's technology base can be better utilized. This has led to the implementation of a number of initiatives within three key segments: "Industrial enzymes", "Acquisitions" and "Activities in the pharmaceutical area".

Industrial enzymes will continue to be the main business area and will thus be allocated the majority of research and development resources.

Industrial enzymes

As part of measures to strengthen R&D activities five new focus areas have been established, while additional resources have been contributed to selected existing projects. The five new areas are: Fats and oils, Pulp and paper, Processed foods, Fuel alcohol and Asian Applications. A number of projects outside these areas have been discontinued and these resources have been transferred to the aforementioned focus areas.

Acquisitions

There will be further focus on identifying and analyzing candidates for acquisition, so as to make more broadbased use of the company's existing technology base. The first step was taken on the acquisition of Novozymes Biologicals in July 2001.

Novozymes Biologicals is expected to achieve turnover of DKK 75 million in the second half of 2001, and sales are expected to increase by a minimum of 10% per year. Within a 3-year period the operating profit margin is expected to reach the level for the enzyme business.

The accounts of Novozymes Biologicals will be included in the consolidated accounts as from the second half of 2001.

Activities in the pharmaceutical area

A number of pharmaceutical projects will be initiated. In order to minimize the Group's risk profile for long-term, cost-intensive projects, partnerships will be established at an early stage of the project.

Low-allergenic protein technologies

During the past year, Novozymes has strengthened its position on patents for low-allergenic protein technologies. Using these technologies, it can be studied whether a given protein has the potential to trigger an allergic reaction in human beings, and then how the protein could be modified, so as to avoid an allergic reaction.

Granting of licences to Novozymes' patent rights and potential cooperation within this area via pharmaceutical companies is expected within one year.

New anti-microbial products

A number of projects to identify new anti-microbial compounds, including peptides, are expected to be established.

Based on Novozymes' substantial databank of naturally occurring microorganisms, the company's technologies to generate diversity and to produce proteins, Novozymes will seek to find anti-microbial compounds, especially peptides, which can be used either for pharmaceutical applications, in agriculture or in the food area.

In the medium term, Novozymes aims to enter into partnership agreements with one or more companies.

***Technologies for manufacturing of pharmaceutical products,* contract manufacturing**

Novozymes has analyzed opportunities to establish contract manufacturing of products for pharmaceutical companies. The conclusion is that currently the greatest growth potential lies in fermentation using mammalian cells, a technology not used by Novozymes. A project has therefore been established in order to investigate opportunities to produce proteins today made using mammalian cells by fermentation of microorganisms. If the outcome of this project is successful, contract manufacturing will be initiated.

***Technologies for manufacturing of pharmaceutical products,* own production**

Novozymes has entered into an option agreement with Hyalose LCC, Austin, Texas, USA, an Emergent Technologies, Inc. company, in order to produce hyaluronic acid or derivatives thereof based on patents from Hyalose LCC. The final decision to exercise this option is expected to be taken in the second quarter of 2002. If the option is exercised, it will be sought to produce the hyaluronic acid by an advanced biotechnological method.

Hyaluronic acid, which appears naturally in tissues and muscles, is today used in a large number of treatment areas, e.g. treatment of arthritis, eye operations, cosmetic applications, etc. The substance is currently extracted from the combs of roosters or chickens, or by using traditional fermentation.

Significance of the new initiatives for the future sales growth

With these new initiatives, as well as acquired activities, the annual sales growth is expected to be increased from the current estimated 8-9% to an annual growth rate of minimum 10%.

Forward-looking statements

The sections above contain forward-looking statements.

Forward-looking statements are by their very nature associated with risks and uncertainties that may cause actual results that differ materially from expectations, including unexpected developments in the international currencies and markets, market-driven price decreases for Novozymes' products and the introduction of competing products in Novozymes' core area. □

Bagsvaerd, 8 August 2001

The Board of Directors,
Novozymes A/S

Investor Relations
Novozymes' shareholder information

We have used the summer holiday to analyze the needs and wishes of our shareholders as regards the way we communicate.

The conclusion is that we are carrying out a number of changes to the benefit of our shareholders.

This Shareholders' Magazine will only be issued in connection with the half-yearly result, whilst following the quarterly results there will be informal shareholder meetings in Greater Copenhagen and Jutland. The shareholders will thereby have the opportunity to meet directly with Novozymes' managers. The company will save on costs issuing the Shareholders' Magazine, at the same time reducing environmental impact.

Yours sincerely,
Investor Relations

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Investor Relations receives many personal inquiries from shareholders. Two of the most frequently asked questions are reproduced here for your information:

Q: Whom should I inform about changes of address to continue to receive shareholder-related information from Novozymes?

A: All changes of address should be notified to the bank in which your Novozymes A/S B shares are deposited. Novozymes cannot update the new address at the depositary bank.

Q: How do I calculate the purchase price of the shares which I received in relation to the 1-to-1 split in connection with the demerger of Novozymes A/S from Novo Nordisk A/S?

A: The Danish tax authorities have approved an apportionment based on the average closing quotations of the Novozymes A/S and the new Novo Nordisk A/S shares on the Copenhagen Stock Exchange during the first 20 days following the first day of Novozymes A/S' share listing on 17 November 2000.

The computed ratio is 9.3% for Novozymes A/S shares and 90.7% for Novo Nordisk A/S shares. The ratios should be applied when calculating the "new" purchase price of each company's shares given that the shareholder had "old" Novo Nordisk A/S shares and received both Novozymes A/S and new Novo Nordisk A/S shares in the 1-to-1 share split. Tax authorities in countries outside Denmark have approved slightly different apportionments.

novozymes®

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For further information and adresses of international offices, please see: www.novozymes.com

Quarterly results in 2001 and 2000

(DKK million)	2001		2000				%*)
	Q2	Q1	Q4	Q3	Q2	Q1	
Technical enzymes	***849***	*828*	*898*	*947*	*884*	*819*	***(4)***
of which detergent	**556**	556	605	646	607	546	**(8)**
Food enzymes	***317***	*314*	*310*	*345*	*280*	*252*	***13***
Feed enzymes	***88***	*112*	*87*	*79*	*65*	*67*	***35***
Net turnover	**1,254**	1,254	1,295	1,371	1,229	1,138	**2**
Operating profit	**208**	177	240	267	190	128	**9**
Net financials	**(7)**	4	(25)	(63)	(31)	(1)	**-**
Profit before tax	**201**	181	215	204	159	127	**26**
Tax	**62**	56	64	64	51	41	**37**
Minority interests	**1**	(2)	-	(3)	1	-	**-**
Profit after tax	**140**	123	151	137	109	86	**28**
Earnings per DKK 10 share (DKK)	**1.88**	1.64	2.00	1.82	1.45	1.14	**30**
Average A and B shares in issue (million)	**74.6**	74.9	75.3	75.3	75.3	75.4	**(1)**

(The quarterly accounts are unaudited.)

*) Development from Q2 2000 to Q2 2001.

Geographical distribution of sales

(DKK million)	2001		2000				%*)
	Q2	Q1	Q4	Q3	Q2	Q1	
Europe, Middle East and Africa	**530**	563	581	600	490	479	**8**
Asia and Oceania	**238**	226	212	264	265	249	**(10)**
North America	**369**	347	377	378	351	286	**5**
Latin America	**117**	118	125	129	123	124	**(5)**
Net turnover	**1,254**	1,254	1,295	1,371	1,229	1,138	**2**

*) Development from Q2 2000 to Q2 2001.

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Novozymes Biologicals

The acquisition of Sybron Biochemicals

On 1 June 2001, Novozymes announced its first acquisition since becoming an independent company in November 2000.

Formally effective from 1 July 2001, Novozymes acquired the unincorporated unit Sybron Biochemicals from Sybron Chemicals Inc., a subsidiary of Bayer Corporation. Although Bayer Corporation only recently acquired Sybron Chemicals, Sybron Biochemicals has been in business for approximately 40 years. In 2000, Sybron Biochemicals achieved a turnover of around DKK 140 million and employed almost 100 people. Following the acquisition, Sybron Biochemicals was renamed Novozymes Biologicals, Inc. and is now part of the Novozymes Group.

Novozymes Biologicals is based in Virginia, USA, and is engaged in the research, production and sale of naturally occurring microorganisms. In addition to the US headquarters, the newly acquired company has overseas employees primarily in Paris and Tokyo.

Like Novozymes' present range of enzymes, the products of the newly acquired company are environmentally sound alternatives to traditional chemicals – all products that are truly unlocking the magic of nature.

The established business areas include microorganisms for industrial biological purification plants, the maintenance of drains and septic tanks, and other technical applications for both the consumer and industrial markets. The company is also developing a new business area involving microorganisms for use on grass and other crops in order to reduce dependency on fertilizers and chemicals.

Novozymes' president and CEO, Steen Riisgaard, comments: "Sybron Biochemicals is a perfect match for our vision to provide environmentally friendly biological solutions."

"I think our company makes a really good fit with Novozymes," says Ted Melnik, the former vice president of Sybron Biochemicals who is staying on as president of Novozymes Biologicals together with the same management team.

Acquisition synergies

Although operating in different fields of business, the two companies are based on the same technologies.

Essentially, Novozymes Biologicals harnesses the ability of microorganisms to produce enzymes and perform a particular task such as breaking down waste. It sells formulated products based on microorganisms, often mixed with additives such as surfactants, nutrients or preservatives.

Novozymes goes one step further and ferments the microorganisms in order to produce standardized industrial enzymes. In industrial applications, these enzymes work much faster than the microorganisms would on their own.

The acquisition of Sybron Biochemicals is part of a strategy to make optimum use of Novozymes' technology base. Novozymes Biologicals is a natural extension of Novozymes' existing business and there are several benefits of the acquisition.

Most importantly, Novozymes Biologicals will benefit from Novozymes' culture collection of approximately 25,000 classified microorganisms (fungi and bacteria).

As both companies' products are made using fermentation techniques, Ted Melnik and his workforce will also gain access to Novozymes' very advanced technologies within this area. These will be used to optimize production processes.

Previously, Sybron Biochemicals has only dabbled with the use of industrial enzymes. However, as part of Novozymes the new subsidiary has a chance to utilize enzymes in some of its products to achieve even greater efficiency.

Main markets

The products of Novozymes Biologicals solve a series of household, industrial and agricultural problems.

The largest segment is the institutional and household business. Novozymes Biologicals is the leading US manufacturer of applied microbiology products for this market. The newly acquired company also supplies microorganisms for the biological processes in industrial and municipal wastewater treatment facilities.

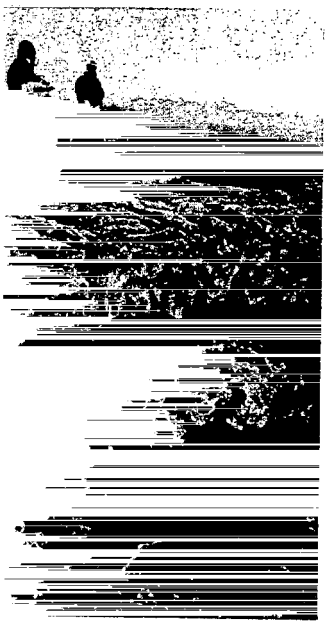
Novozymes Biologicals also sells microbial-based growth enhancement and plant disease prevention products to the agricultural and horticultural markets. The main market currently is golf courses and sports fields. These products reduce the need for fertilizers and other chemicals.

For the second half of 2001, the acquisition of Sybron Biochemicals is expected to add around DKK 75 million in turnover to the Novozymes Group. In coming years, sales from Novozymes Biologicals are forecast to grow by at least 10% per year. The costs associated with the acquisition are expected to have a neutral impact on operating profit for the current year, whilst net interest expenditures will be subject to a moderately negative impact due to financing of the acquisition. Novozymes Biologicals is expected to increase its operating profit margin to the level of the existing business within three years. ◻

Strategy in pact with nature

Collection of soil samples happens in agreement with the countries involved.

For more than 40 years, Novozymes has collected soil samples from every region of the globe. The company's field research staff have been on volcanoes, in tropical rain forests, in the steppes and tundra, and in their own kitchen gardens, to harvest microorganisms. These samples have been frozen or analysed and screened for new genes, – as part of the hunt for new enzymes.



New Enzyme

One example of what a soil sample from the diversity of Nature can contain is Mannaway™, developed by Novozymes in close cooperation with Procter & Gamble. The story behind it starts with a Novozymes scientist who, in 1991 in northern Kashmir, collected a soil sample containing the enzyme mannanase. This enzyme proved to have some very interesting effects on the cleaning of cotton fibres, and today is used in liquid detergents.

In recent years, scientists all over the world have also made new discoveries such as fascinating microorganisms which have survived, and exist, under extreme conditions in Nature. These are microorganisms which e.g. thrive in the extreme heat and sulphurous conditions of volcanic areas, or in the depths of the sea.

The Rio Convention

Like all other microorganisms, these are of interest to Novozymes. With respect for the Rio Convention, which sets out guidelines for the exchange of biological material between countries, Novozymes today has a strategy which is in pact with Nature, and makes it possible to ensure continued access to microorganisms from the many different corners and hiding places of Nature. Cooperation agreements with scientific environments in the subtropical and tropical environments of third-world countries are a key element of this strategy.

Cooperations

In recent years, Novozymes has cooperated with research environments in countries such as India, Zimbabwe and Thailand. This cooperation is based on Novozymes' gaining access to fungi and bacterial cultures in return for contributing technology and capacity infrastructure in the countries concerned. "For many years, also prior to the Rio Convention, we have collected and saved soil samples containing microorganisms from e.g. cold/hot, acidic/alkaline and high/low areas. Our industrial research network is based in Europe, and we have our own research laboratories in Denmark, Japan, China and the USA. We also cooperate with research environments in tropical regions. All in all, we are ready to hunt down new enzymes," relates Lene Lange, scientist and Novozymes' biodiversity spokesperson. ■

What are enzymes?

Novozymes produces enzymes, which are biological solutions to industrial problems. Enzymes act on raw materials from Nature, and are effective without causing pollution. Enzymes help to improve industry's efficiency and reduce environmental impacts.

Enzyme treatment is typically part of the industrial processing of raw materials such as fruit, grain, cotton, leather and timber. Enzymes make it easier to press more juice out of the fruit, to keep bread fresh for longer, and for cotton fabric to have the right look, without putting the environment at risk. Enzymes can partly replace chlorine in paper production, and enzymes for the detergent industry also cut down water and energy consumption, since enzymes help to wash clothes really clean, at lower wash temperatures.

Enzymes are Nature's own tool and can initiate a number of biological processes. Enzymes are found in all living organisms – human beings, animals, plants and microorganisms. ■

Financial statement for the first quarter of 2001

Quarterly results from 2001 and 2000

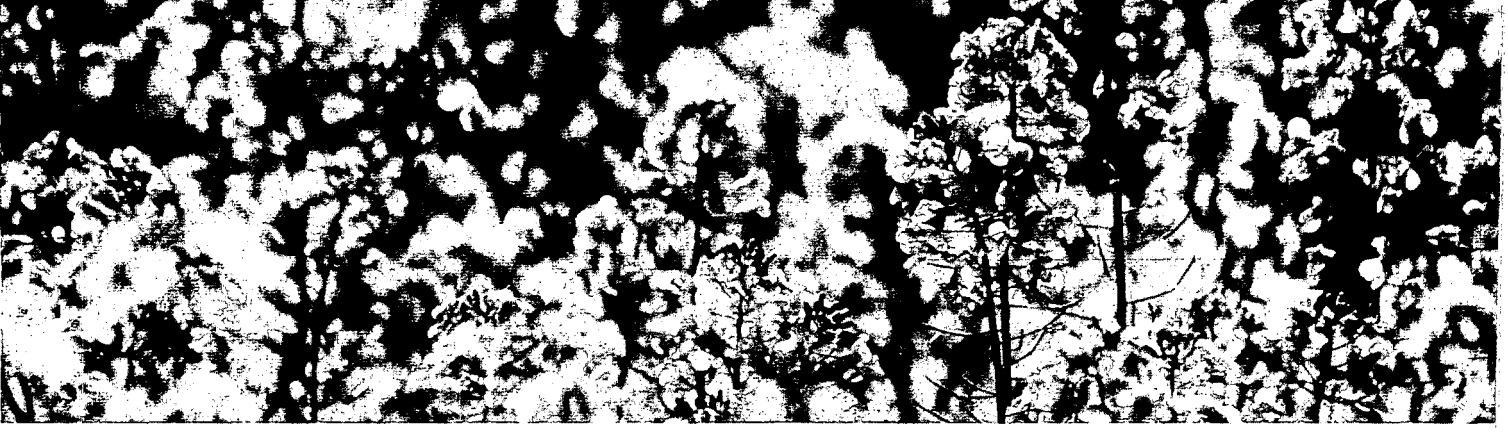
(DKK million)	*2001*	2000				%*
	Q1	Q4	Q3	Q2	Q1	
Technical enzymes	828	898	947	884	819	1
of which detergents	556	605	646	607	546	2
Food enzymes	314	310	345	280	252	25
Feed enzymes	112	87	79	65	67	67
Net turnover	1.254	1.295	1.371	1.229	1.138	10
Operating profit	177	240	267	190	128	38
Net financials	4	(25)	(63)	(31)	(1)	-
Profit before tax	181	215	204	159	127	43
Tax	56	64	64	51	41	37
Minority interests	2	-	(3)	1	-	-
Profit after tax	123	151	137	109	86	43
Earnings per DKK 10 share (DKK)	1,64	2,00	1,82	1,45	1,14	44
Average A and B shares in issue (million)	74,9	75,3	75,3	75,3	75,4	-1

(The quarterly accounts are unaudited.)

* *Development from 1st qtr. 2000 to 1st qtr. 2001.*

In accordance with the Group's accounting policies earnings per share are calculated on the basis of the result for the period divided by the sum of the weighted average number of shares and number of options in the money. Options in the money are defined as the options for which the price at issue is lower than the market price at the close of 1st qtr. 2001.

The accounting policies are unchanged from Novozymes A/S' financial statement of 21.02.2001.



Enzymes and food oil

A new enzyme improves the quality of food oil and benefits the environment. The first oil mill has implemented the enzyme.

At the Cereol oil mill in Mannheim, Germany, the enzyme Lecitase® Novo from Novozymes is ensuring that the factory can save money, meet the environmental requirements imposed by the authorities and give consumers oil of better quality, and of longer durability. These benefits ensure that the enzyme's market potential is on the right side of DKK 100 million.

Optimum quality

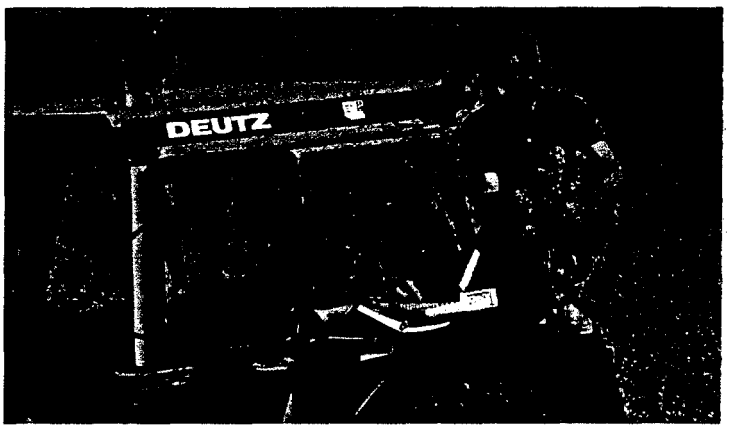
Vegetable oils contain phospholipids, which are a rubbery, sticky substance that can present problems when oil is refined. Traditionally, chemicals have been used to deal with this problem, but at Cereol they have switched to enzymes. According to Dr. Ernst Münch, Technical Director in Mannheim, this is a really good investment. "Oil refined with enzymes presents optimum quality and stability. For us this is a worthwhile process that is easy to handle, and ensures a product of high quality. We achieve these qualities by using enzymes."
Lecitase® Novo makes it possible to split up the phospholipids. In popular terms, the enzymes cut out the fatty acids, and then the residue can be eliminated by centrifugation.

Meeting tough environmental demands

In Germany, environmental regulations are very strict, and they impose limits on emissions of sulphurous matter and fat in waste water. If the factory used chemicals to break up the phospholipids, Cereol would not be able to fulfil these requirements. "Enzymes mean that we don't produce any waste water," according to Dr. Ernst Münch, who so far has had to pay DEM 5 for every cubic metre of waste water the authorities had to purify, and who can now look forward to a substantial saving.
In 1994, Cereol was the first oil mill in the world to introduce enzymes for this process. At that time, they used the enzyme Lecitase® 10L, also produced by Novozymes (formerly Novo Nordisk), manufactured from the pancreatic glands of pigs. Lecitase® Novo is made using microorganisms, enabling Novozymes to produce unlimited quantities of the enzyme.

Approved in the USA

Lecitase® Novo is now subject to approval in a number of countries. In the USA, the American FDA is expected to approve the enzyme for use in the oil and fat industry in the course of 2001. However, the new enzyme will be introduced over a number of years, since Europe and the USA's major oil mills do not switch technology and processes overnight. When Novozymes seriously starts to introduce the new enzyme in the global oil mill industry, the focus, among others, will be on how the enzymes cut water consumption, reduce waste water and the sludge drying requirement, and lead to reduced consumption of chemicals. ■



The Novo enzyme Lecitase® is used to extract oil from rapeseed without producing waste water.

Long-term financial objectives

In February 2001, Novozymes' long-term financial objectives were adopted by its Board of Directors.

These targets were fixed with due account of the expected development in the enzymes market, the competitive situation, activities in progress, and the need to be at the forefront compared to our benchmark group, i.e. the companies Novozymes is best compared with. The time scale for achieving these goals is 3-5 years.

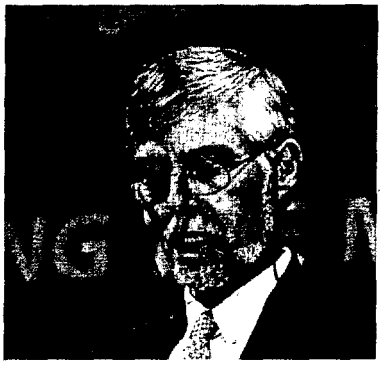
Three targets were set up:

- *Annual growth of minimum 10% in the operating profit*
This target is expected to be fulfilled this year, when growth on the previous year is estimated at around 10%.

- *An operating profit margin at the level of 17%*
With expected sales growth of 5% and an expected increase in operating profit of 10%, the operating profit margin will reach a level of 17% per cent already this year.

- *A return on invested capital, measured as ROIC*, of minimum 15% per year*
This is the most ambitious of our financial objectives. A return on invested capital of 15% after tax will put Novozymes at the top of its league. To achieve this objective, earnings must continue to expand, while keeping the development in invested capital at a low level. Again this year, this key figure will be improved in relation to the 10% reported for 2000. ■

*(ROIC, Return On Invested Capital.)



Board Chairman Henrik Gürtler presents the long-term financial objectives to shareholders.

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Novozymes' shareholders' magazine

This shareholders' magazine is Novozymes' first. Its format and content closely resemble most other shareholder newsletters. Publishing a quarterly magazine for 40,000 shareholders is an expensive exercise. It is possible that these resources could be spent in a better way. During the summer break we will therefore prepare an analysis to help us to learn more about the information needs and requirements of our shareholders in terms of content, frequency and medium – i.e. electronic or printed.

So it is possible that the next edition will be rather different. It's up to you!

Yours sincerely,

Michael Steen-Knudsen
Investor Relations

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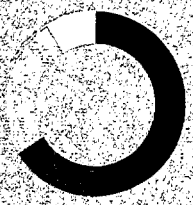
Q1/2001
Distributed on industry segments



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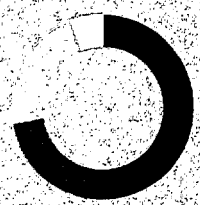


funds reflects the addition of the profit for the quarter of DKK 123 million, less buy-back of own shares at DKK 224 million, as well as positive exchange rate adjustment of net assets in foreign subsidiaries at DKK 87 million.

Total assets were DKK 8,013 million, compared to DKK 8,218 million at the end of 2000.

Outlook for 2001
The outlook for 2001 is unchanged from the expectations announced in connection with the financial statement on 21 February 2001.
Turnover growth is expected to be 5% on the year 2000, provided that exchange rates, especially USD and JPY against DKK, remain at the current level for the rest of the year.

Adjusted for stock buy-backs this corresponds to growth at the level of 6%.

Despite the generally more dampened growth forecasts for the US economy, Novozymes expects favourable sales growth in the USA in 2001, compared to the year 2000, not least because Novozymes' product mix is only moderately affected by cyclical fluctuations, since Novozymes' products are used to produce everyday commodities. Moreover, growth in the USA is related to a number of market-expansive products with a highly competitive profile such as baking enzymes and innovative detergent enzymes.

Growth for the full year in sales of feed enzymes at 10-20% is expected, compared to the previous estimate of 5-15%. The adjustment is related to the BSE situation, as a consequence of which sales are expected to increase. The estimate is subject to some uncertainty as sales growth is affected by external factors such as the development in foot-and-mouth disease, the time scale of the ban on meat and bone meal, and the price of non-organic phosphate.

Operating profit is expected to increase by around 10%.

Net financial expenses are estimated at around DKK 40 million in 2001.

The effective taxation rate is expected to be at the level of 31%.

Profit after tax is expected to increase by around 25% against the year 2000.

The Group's capital expenditure is expected to be at the level of the depreciation charge for the year.

The Group's operating profit margin and return on invested capital, defined as ROIC, are expected to develop positively against the year 2000.

Share buy-backs and holding of own shares
As of 31 March 2001, Novozymes' holding of own shares (Treasury shares) comprised 1,495,204 B shares, equivalent to 1.98% of the total number of shares in issue. Between 1 January 2001 and 31 March 2001, Novozymes invested DKK 224 million in shares buy-back, equivalent to the acquisition of 1,315,163 B shares. The shares buy-back programme announced as of 12 December 2000 has hereby been concluded.

Expanded stock-option programme
The Board of Directors of Novozymes has approved the framework for an expanded share option programme for all permanent staff of the Novozymes Group. The offer price of the options is fixed as the average of all trades on the Copenhagen Stock Exchange in the current week and the maximum volume is one million shares. Further details, including the rules for allocation, are being prepared.

New share buy-back programme
The Board of Directors of Novozymes has adopted a decision to buy back own shares in the market for maximum DKK 200 million. The bought-back shares will be included in the holdings of own shares.

Pending litigation
On 22 August 2000 a district court in Sao Paulo, Brazil, ruled on the confiscation of Novozymes' assets in Brazil. Novozymes appealed the ruling, and the Court of Appeals in Sao Paulo found in favour of Novozymes on 11 April. The case has thus been closed in favour of Novozymes.

The Dutch company DSM N.V./Gist-Brocades has brought a lawsuit against Novozymes in Germany, alleging a patent infringement concerning Novozymes' sale of the product Ronozyme™ P. Novozymes is convinced that the patent held by DSM N.V./Gist-Brocades is invalid, and that it is not infringed by Novozymes.

Forward-looking statements
The sections above contain forward-looking statements.

Forward-looking statements are by their very nature associated with risks and uncertainties that may cause actual results that differ materially from expectations, including unexpected developments in the international currency and money markets, market-driven price decreases for Novozymes' products and the introduction of competing products in Novozymes' core areas. There is also the economic situation in developing markets, primarily Brazil, Central and Eastern Europe, China, India, Southeast Asia and Mexico. Sales to these countries totalled around DKK 1.3 billion in the year 2000, corresponding to 26% of the Group's total sales. ■

Bagsværd, 9 May 2001

The Board of Directors
Novozymes A/S

SHAREHOLDERS' MAGAZINE

28 May 2001

DEAR SHAREHOLDERS,

First and foremost, I would like to thank you for investing in Novozymes. We are pleased and proud that so many shareholders have shown enough trust in us to invest in our company. Naturally, we will do everything we can to fulfil the promises made to you, our shareholders.

This shareholders' magazine includes our first quarterly statement. We have made a good start to the year, despite the difficult conditions imposed by the slowdown in the economies of a number of our key markets.

Our expectations of Novozymes' financial results for the full year remain unchanged.

The Novozymes share represents green technology with environmentally-sound products, advanced biotech know-how, and last but not least, sound earnings. As shown in the article in this magazine entitled "Long-term financial objectives" we have set some ambitious financial goals and we look forward to reporting on our progress to all our shareholders.

Kind regards,
Steen Riisgaard, CEO

novozymes®

Unlocking the magic of nature

Financial statement for the first quarter of 2001

Sales rose by 10% from DKK 1,138 million to DKK 1,254 million. Sales in the first quarter of 2001 are positively affected by substantial sales of feed enzymes, of which a proportion can be attributed to stockbuilding, but negatively influenced by the planned stock buy-backs in Japan, attributable mainly to the first quarter of 2001. The overall effect of the stock adjustments during the quarter is estimated to have negatively affected sales.

In spite of the aforementioned, turnover and operating profit developed satisfactorily in the first quarter of 2001.

Operating profit rose by 38% to DKK 177 million. The high rate of increase should be considered in the light of a relatively moderate result in the first quarter of 2000.

Profit before and after tax were respectively DKK 181 million and DKK 123 million, equivalent to an increase of 43% in the profit both before and after tax against the first quarter of 2000. The seasonal distribution of sales is generally weighted so that sales in the second half-year are higher than in the first half-year.

The profit before tax is positively affected by net foreign exchange gains of DKK 33 million, compared to losses of DKK 6 million in the first quarter of 2000.

Earnings per share increased by 44%, to DKK 1.64 from DKK 1.14.

Sales

Sales increased by 10% from DKK 1,138 million for the equivalent period of 2000 to DKK 1,254 million. Volumes, prices and product mix accounted for 7 percentage points of the increase, while exchange rate movements increased sales by 3 percentage points.

Particularly high growth rates were seen in North America and Europe, while sales to Asia were lower than for the first quarter of 2000, due to the planned stock buy-backs in Japan.

There was a moderate sales decline in Latin America.

Sales of technical enzymes increased by 1%. Sales to the detergent industry continue to bear the hallmark of keen competition, despite the success, particularly in the USA, of the launch of Mannaway™ in 2000. Sales of dishwashing detergent enzymes made satisfactory progress. Excluding stock buy-backs in the period, sales of technical enzymes rose by around 4%.

Sales of other technical enzymes were by and large unchanged. Sales of enzymes to the fuel alcohol industry increased, while sales of enzymes to the leather industry were negatively affected by the export restrictions introduced on the outbreak of foot-and-mouth disease.

Sales of enzymes to the food industry showed sound growth, rising by 25%. Especially the baking and beverage segments contributed to the sales increase, but enzymes to produce oils and fats also made good progress, but from a low level.
In North America in particular growth rates for sales of food enzymes were substantial.

Sales of feed enzymes continued to show strong growth, increasing by 67%. The transfer of distribution to Roche Vitamins and Fine Chemicals in a number of countries as from 1 January 2001 progressed very satisfactorily. Sales are positively affected by the BSE situation, whereby meat and bone meal in feed is now to an increasing degree being replaced by other sources of phosphates, or Novozymes' product Bio-Feed® Phytase, which is marketed in an alliance with Roche under the name Ronozyme™ P. It improves the animals' ability to absorb phosphate from vegetable-based feeds, thereby reducing the need for phosphate additives to feed, and moreover reducing pollution from phosphate emissions.

Costs and licence fees and other operating income

Total costs excluding net financials and tax rose by 7% to a total of DKK 1,077 million. The increase in costs was thus somewhat lower than the sales increase.

Rates of increase for production, sales & distribution and administration costs were all lower than the rate of increase in sales, while R&D cost increases exceeded the sales growth rate.

The American Department of Energy's subsidies for the development of enzymes for production of bio-ethanol (alcohol added to petrol), is carried as income under Licence fees and other operating income, while the actual costs are defrayed as an element of R&D costs.

Net financials

Novozymes recorded net financial income of DKK 4 million, compared to net financial expenses of DKK 1 million in the first quarter of 2000.

Novozymes achieved net foreign exchange gains of DKK 33 million, compared to losses of DKK 6 million in the first quarter of 2000. This is attributable primarily to realized and unrealized gains from the hedging of the Group's USD and JPY exposures.

Novozymes recorded net interest expenses of DKK 21 million, up from DKK 17 million for the same period of 2000.

Other financial items were negative at DKK 8 million, compared to gains of DKK 22 million in the first quarter of 2000, which was positively affected by gains on sale of securities.

Profit before and after tax

Profit before and after tax was respectively DKK 181 million and DKK 123 million, both equivalent to an increase of 43%. The significant rate of increase should be compared to the relatively modest result for the first quarter of 2000.

Development in shareholders' funds

The Group's shareholders' funds were DKK 3,757 million at the end of the first quarter of 2001, compared to DKK 3,771 million at the end of 2000. The development in shareholders'

THE ZYMES

NOVOZYMES' SHAREHOLDER MAGAZINE · NO.1 · FEBRUARY · 2002

Healthy business and a better environment

The theme for Novozymes' 2001 annual report is sustainable growth. This first issue of The Zymes presents selected highlights.

As part of Novozymes' work to ensure long-term growth, we launched a new strategy during 2001 to grow our existing enzyme business. **See pages 2-3.**

Novozymes is looking to find solutions to specific problems through research and communication with our stakeholders. Novozymes' sustainable initiatives include an effective animal feed enzyme to reduce the release of phosphates into the environment, less polluting petrol, cleaner laundry and chemical-free margarine production. Read about ongoing and planned activities on **pages 4-5**.

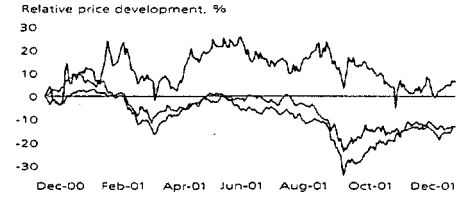
Novozymes' key figures reflect a generally satisfactory performance in 2001, which saw us completing two share buyback programmes for a total of DKK 435 million and undertaking our first acquisition. See the year in figures and pictures on **pages 6-7.**

Novozymes received several awards for environmentally sound production in 2001.

A full year with Novozymes

2001 was the first full year of trading in Novozymes shares on the Copenhagen Stock Exchange. The price of the company's shares climbed 6% from DKK 159 at the start of the year to DKK 168.50 at the end of the year and thus performed relatively well – especially relative to the KFX index of the most frequently traded stocks on the Copenhagen Stock Exchange, which fell 14% during the year, but also relative to other companies in related sectors. ■

Novozymes' B-share in 2001 – relative share price performance versus the KFX index and peer group



Share facts 2001

- Tenth most traded share in Copenhagen
- Shares traded: 49.6 million
- Market value of shares traded: DKK 8.7 billion
- Year-end market capitalization: DKK 12.7 billion
- Earnings per share: DKK 8.10
- Cash flow from operations per share: DKK 15.28
- Projected dividends per share: DKK 2.00

The Zymes – our new shareholder magazine

Welcome to this first issue of The Zymes, our new shareholder magazine. Unlike its predecessor, which was based around a small number of in-depth features, The Zymes will contain a higher number of shorter articles, including highlights from the company's annual report and financial announcements. The idea is to give shareholders a broad but manageable insight into the most important developments at Novozymes and paint a picture of where the company is headed. The Zymes will be published twice a year. The first issue in February will accompany the notice of the annual meeting of shareholders while the second will be sent out at the end of August following the announcement of financial results for the half-year. The magazine will automatically be sent to all Novozymes' shareholders (registered by name) and will also be available over the Internet from the Investor Zone at: www.novozymes.com ■

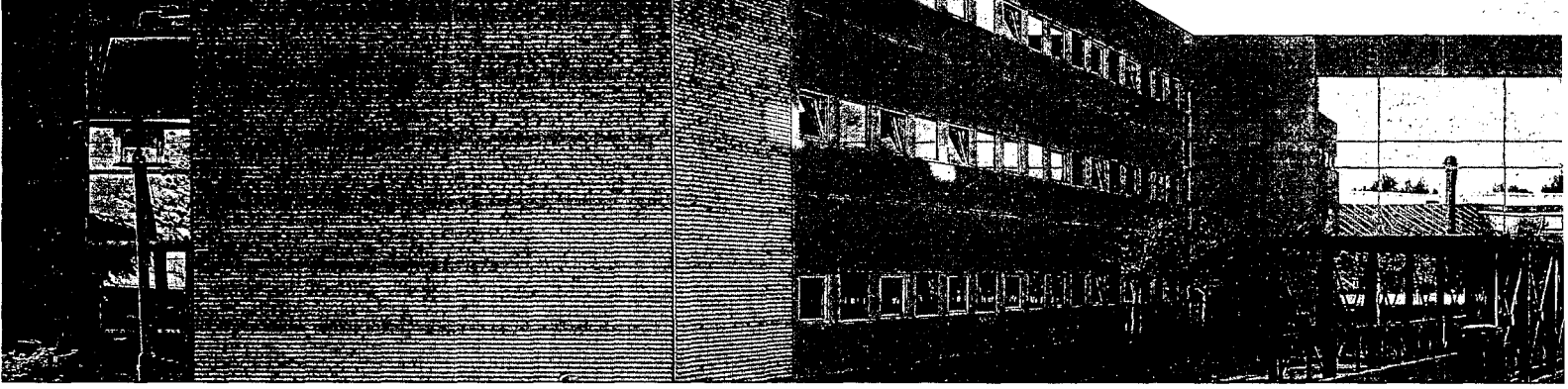
Annual report on the Internet

Novozymes' annual report will be published in March but will no longer be sent automatically to all shareholders. This is partly because we believe that many shareholders would prefer to receive a brief summary rather than a long report, and partly to cut costs and help the environment. With effect from the 2001 annual report, we are therefore asking shareholders who still wish to receive the full report to download it from the Internet at www.novozymes.com or use the coupon sent out together with this magazine. ■

? **Did you know** that enzymes are found naturally in all living things and that some types of enzymes sold by Novozymes are found in the human stomach?

novozymes®

Unlocking the magic of nature



Dear shareholder

It is now more than a year since Novozymes was successfully listed on the Copenhagen Stock Exchange. The following pages present some of the highlights of Novozymes' first year as an independent company – a year that was far from uneventful.

Novozymes is a company that develops, produces and markets products that are based on highly advanced biotechnology but are often used in the manufacture of commodities. This is our reality and our opportunity.

In 2001 we were able to demonstrate to our shareholders that Novozymes is a stable business capable of weathering the storm in a year when the global economy took a sharp turn. We put in a solid performance and met the targets we set ourselves. All in all, this meant that we also had a good year on the stock market and stayed at the absolute top.

I expect 2002 to be an equally exciting year, throwing up a fresh crop of challenges. We are moving into new areas courtesy of our focus on new initiatives based on our core technologies but outside our established business of enzymes for industrial use.

We aim to keep on cultivating our various strengths. The skills we need to apply if we are to safeguard our future growth are our in-depth understanding of market needs and close contact with partners and customers who are ready to exploit the new opportunities. Here we will be building on our most important resources: our knowledge base and our employees.

Yours faithfully
Steen Riisgaard

New strategy

In order to achieve an annual growth in sales of more than 10%, Novozymes has launched a number of initiatives to take the company into new areas. These initiatives are part of a new strategy with three areas of focus.

In future Novozymes will be supplementing its existing enzyme business with a programme of acquisitions and pharmaceutical initiatives. The idea is to reach annual sales growth in excess of 10%. We are also setting up new teams to promote the especially rapid and efficient development of five new enzyme areas.
Enzymes for industrial use will remain our core business and will continue to attract some 90% of our research resources.

The new strategy has three main areas:

1 Acquisitions to complement Novozymes' core expertise;
2 Initiatives in the pharmaceutical field;
3 Our existing industrial enzyme business coupled with a sharper focus on the development of five specially selected areas. ■

Among other things, Novozymes will look into the opportunities for developing products for the pharmaceutical market.

Alliances to pave the way into pharmaceuticals

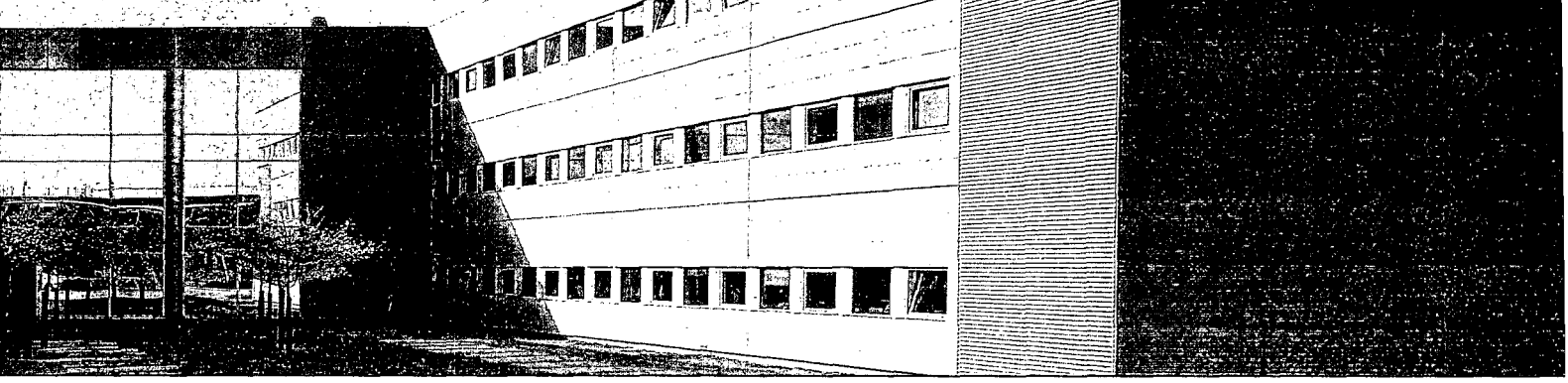
The work on new initiatives in the pharmaceutical field is concentrated largely at Novozymes' research units in California and Denmark. Some of the projects in question are being undertaken in partnership with other companies and research institutes. Novozymes will make its money through the sale of licences, contract production and the production of pharmaceuticals in-house.

Four specific projects have been launched:

1 Licensing out protein technologies that can reduce the risk of allergies in connection with certain protein-based medicines.
2 Peptides (small proteins) for the treatment of infections. It is hoped that peptides will offer a viable alternative to existing forms of treatment to which pathogenic bacteria have developed resistance.
3 Contract production of pharmaceutical products using microbial fermentation rather than mammalian cell technologies.
4 Production of hyaluronic acid using microbial fermentation rather than cocks' combs or streptococcus bacteria. Hyaluronic acid is used in the treatment of arthritis, during eye surgery and as a moisture-retaining ingredient in skin creams. ■

Expectations for 2002

Novozymes expects 2002 to bring:
- operating profit growth of 7-8%
- a largely unchanged profit margin of around 17%
- a return on invested capital (ROIC) in excess of the 12% recorded in 2001.



to increase sales

Novozymes' knowledge of fermentation processes for the production of proteins is one aspect on which the new strategy will be based.

Complementary acquisitions

Novozymes is on the lookout for smaller companies with similar technologies and financial potential.

Novozymes will be on the lookout for acquisition targets in the years ahead. Like Sybron Biochemicals (now Novozymes Biologicals), which was taken over in June 2001, the companies we search for must be a good match for Novozymes' existing technology base and must be attractive financially or likely to become so in the relatively short term. It must also be possible to integrate them into our existing business and therefore they must not be too large.

Among other things, Novozymes Biologicals produces microorganisms for wastewater treatment plants.

Virginia-based Novozymes Biologicals markets naturally occurring microorganisms. The company generates annual sales of around DKK 150 million and has some 100 employees. It is considered to be the US market leader in its main business areas, which include microorganisms for industrial biological treatment facilities and the maintenance of drains and septic tanks. One new business area is microorganisms for improving the root network of grass and other crops so that the use of fertilizers and agrochemicals can be reduced. Novozymes has been able to contribute its expertise in microbiological research and production optimization. The business is now an integral part of Novozymes, bringing with it a new range of environmentally friendly products. ■

Focus on brand new enzyme applications

Some of Novozymes' future growth is to come from brand new enzyme applications. In 2001 we decided to focus on a handful of selected areas by organizing some in a new way to create independent teams where employees from research and marketing will work closely together on developing new enzymes in the relevant area and getting them onto the market quickly. The five focus areas are: Fuel ethanol, Oils & Fats, Pulp & Paper, Processed food and Enzyme applications in Asia. ■

Enzymes for food production will play an important role in the future.

Novozymes goes for

Novozymes' Annual Report 2001 focuses on sustainable growth. Sustainability is a recurring theme in the business – financially, environmentally and socially.

Success for feed enzymes

Phytase reduces release of phosphates by 30%.

Sales of enzymes for use in animal feed increased by 47%. The trend is expected to continue, with an average annual growth of 10-20%. The feed enzyme phytase, which helps animals to make better use of the phosphorus in feeds, has been warmly welcomed in farming circles.

Pigs and poultry need phosphorus to strengthen their bones. Previously the supplementation of feeds with meat-and-bone meal was a cheap way of ensuring that feeds contained the requisite amount of phosphorus but fear of mad cow disease (BSE) has prompted the EU and Japan to ban the use of meat-and-bone meal. One alternative is to supplement

feed mixes with inorganic phosphorus but this leads to the release of large quantities of harmful phosphates into the environment.

"Phytase is an environmentally friendly and competitive alternative to the use of inorganic phosphorus in feed mixes," says Lars Dalgaard Andersen, director, Novozymes' Feed Unit. "Our phytase reduces the release of phosphates into the environment by an average of 30%."

Phytase's penetration of the US and Japanese markets and the alliance with Swiss drugs, vitamins and fine chemicals group Roche will be the key drivers behind sales growth in 2002. In the longer term, growth will stem from new products developed in close collaboration with Roche. ■

Chemical-free margarine production

Novozymes searches for alternative to trans fatty acids.

Trans fatty acids, believed to be a key contributing factor behind obesity and cardiovascular disease, are being given their marching orders by health authorities and consumers the world over. Novozymes has long been researching a competitive alternative to the chemicals used in the production of margarine and has now developed an enzyme that makes it possible to produce margarine free from trans fatty acids without using chemical processes. The enzymatic method is also less expensive and so more competitive for margarine producers. Novozymes believes that it is only a matter of time before the new enzyme technology is introduced across the margarine industry. ■

Cooperation on human nutrition

Over the next few years Novozymes will be sponsoring a study of the impact of trans fatty acids at the Research Department of Human Nutrition at the Royal Veterinary and Agricultural University of Denmark. Its aim is to ascertain whether the absence or presence of trans fatty acids in a diet affects the functioning of the heart (fibrillation).

Share options for all 3,400 employees

Novozymes gives high priority to offering exciting jobs and development opportunities in an international working environment. Our people are our greatest asset and so Novozymes launched a share option scheme for its 3,400-plus employees worldwide during the year as part of a broader programme to attract and retain the very best staff.

"We are seeing a general surge in demand for good workers all around the world, and the share option scheme is something we've had in mind for some time. The idea behind the option scheme is to turn our employees' proprietorial feeling about the company into something more tangible and concrete," says Jesper Allentoft, VP, Human Resources.

Learn more about Novozymes as a workplace on "Join us" at: www.novozymes.com ■

sustainable growth

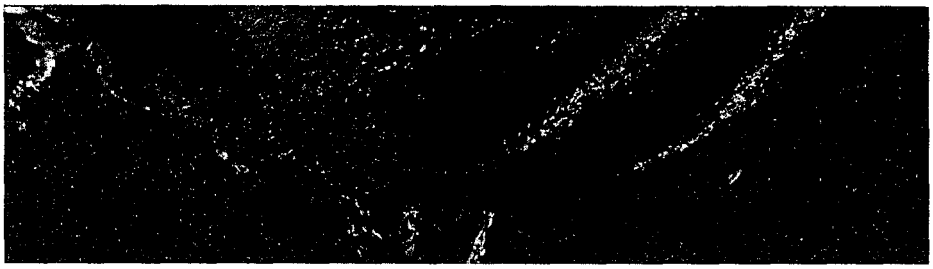
Cleaner, healthier and less expensive laundry

Cleaner laundry and better economy for detergent producers are keywords in Novozymes' coming products.

In 2001 the market for detergent enzymes featured stiff competition and pressure on prices but Novozymes expects to turn the negative growth around in 2002. Rather than simply fighting for a slice of the existing market for detergent enzymes, Novozymes' strategy is to grow the market by developing new enzymes that improve detergency and remove troublesome stains more quickly and effectively.

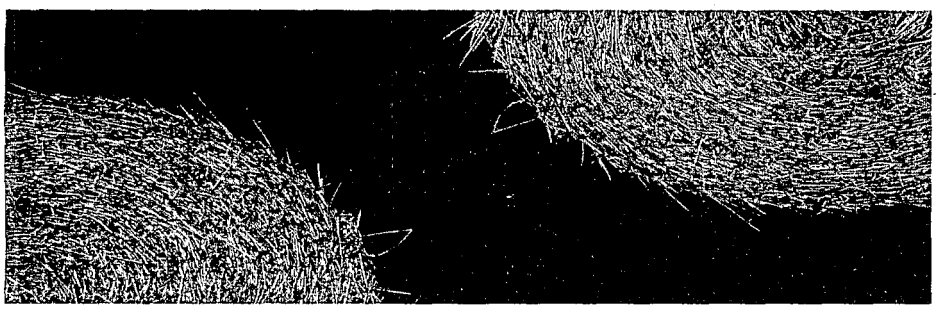
"We built up this market from scratch, we have been behind all of the major innovations in this market, and we plan to remain the most innovative enzyme company around," says Per Falholt, EVP, R&D.

A number of products are due to be launched this year and Novozymes has new initiatives under way with Unilever, Procter & Gamble and several other producers. ■



New products in 2002

- A new lipase that can remove fatty stains in a single wash;
- A new and more robust cellulase (cellulases rejuvenate cotton fabrics by removing fuzz);
- An improved and more stable protease for liquid detergents (proteases act on protein-based stains like grass, blood, egg and sweat).



Biofuels for tomorrow's roads

Good chances for global environment despite growing car transport.

Novozymes is currently looking into the development of new enzymes that can convert biomass into ethanol (fuel alcohol). The idea is to convert sawdust, wood chips, straw and other plant residues into ethanol that can be used in petrol instead of a chemical called MTBE (methyl tertiary butyl ether). MTBE is currently used as an octane booster but is suspected of posing a risk to human health and polluting groundwater.

The research programme is being carried out for the National Renewable Energy Laboratory (NREL) under the US Department of Energy. The US authorities have advanced plans to partially replace environmentally hazardous additives in petrol with ethanol. China too has plans to increase the production of fuel ethanol, and last year the EU unveiled a strategy for starting to replace petrol and other oil-based products with sustainable fuels from as early as 2005.

"If we succeed, this will open up a major new market for Novozymes," says Per Falholt, EVP, R&D. "That said, if vegetable material can replace harsh chemicals, the real winner will of course be the environment." ■

Integrating social responsibility and ethics

Systematic consideration for the environment, ethics and social responsibility is now an integral part of Novozymes' operations. The goal is to balance the "triple bottom line" of environmental awareness, social responsibility and, not least, healthy finances in every commercial decision we make.

"We have a lot to offer when it comes to sustainable development because our business is all about using nature's own tools – enzymes – to provide environmentally friendly solutions for a whole host of man-made problems," says Anne-Marie Skov, VP, Communications. "This makes communicating with the outside world and reporting on our environmental and social performance absolutely vital." ■

Green data

Our Environmental and Social Report:

- presents the environmental and social performance of Novozymes' sites around the world, together with a number of social and bioethics issues of broader significance for society.
- is published in April and can be ordered from www.novozymes.com

One in three orders over the Internet

E-commerce – trading over the Internet – is a key factor when it comes to Novozymes' goal of providing a speedy and flexible service. Around one in three orders now arrive through the customer-oriented Internet portal www.mynovozymes.com, which received three times more visitors in 2001 than the year before. The e-commerce solution covers all of Novozymes' markets and won the Danish IT Industry Association's prize for best B2B portal in February 2001. The new Internet-based training facility "BEST e-learning" launched by Novozymes in June 2001 has also been warmly welcomed. BEST gives customers an opportunity to develop a deeper understanding of enzymes, their uses and ways in which they can help customers to strengthen their brands and improve their products in line with consumer demand. ■

The year in figures

In 2001, Novozymes came closer to achieving all three long-term financial targets: the growth in operating profit was 10%, which is in line with the long-term target; the operating profit margin came out slightly higher than the target at around 17%; and, finally, the return on invested capital was 12% compared with the target of at least 15%. Novozymes is thus well on the way to achieving all three targets.

Key figures	2001		2000		%
	DKK mill.	Euro mill.	DKK mill.	Euro mill.	change
Net turnover	5,271	708	5,033	676	5
Operating profit	904	121	825	111	10
Net financials	-33	-4	-120	-16	-
Profit before tax	871	117	705	95	24
Net profit	602	81	483	65	25
	%		%		
Operating profit growth	10		20		
Operating profit margin	17.2		16.4		
Return on invested capital	12.0		9.8		

1 euro = DKK 7.44

Technical enzymes, etc. was hit by fierce competition

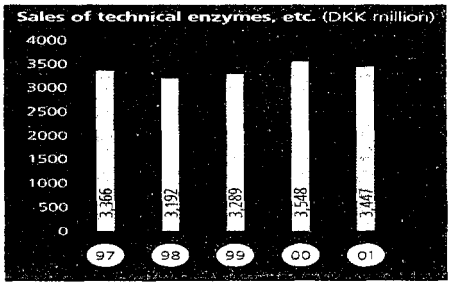
Novozymes expects a sales growth in technical enzymes, etc. of around 5% in 2002.

Sales of technical enzymes, etc. fell slightly by 3% in 2001. The main reason for this was a drop in sales to the detergent industry, partially offset by satisfactory growth in sales of other technical enzymes, etc. Sales of technical enzymes, etc. are expected to grow by around 5% in 2002.

The 11% decrease in sales of detergent enzymes was due primarily to fierce competition among both detergent producers and enzyme suppliers. Novozymes expects sales to its two largest customers, Procter & Gamble and Unilever, to account for a smaller share of the group's turnover in future, so reducing the concentration of customers. Sales of detergent enzymes are expected to start growing again this year.

Sales of other technical enzymes, etc. increased almost across the board. Sales to the starch and fuel alcohol industries were sound, with particularly pleasing growth in North America, which Novozymes expects to repeat in 2002.

Sales of enzymes to the textile and leather industries fell slightly in 2001. This was due partly to the general economic situation in countries like the USA, which has had a negative impact on textile producers, and partly to a decrease in the use of hides as a result of foot-and-mouth disease in Europe. However, the situation improved substantially during the course of the year, especially for the textile industry. Sales of Novozymes' new range of industrial microorganisms through Novozymes Biologicals were also satisfactory. ■



Food enzymes experienced solid growth

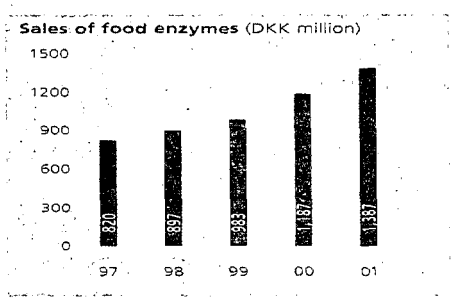
Baking enzymes to fuel 10-15% annual growth in sales of food enzymes.

Sales of food enzymes increased by 17% in 2001. This solid growth was attributable primarily to enzymes for the baking, brewing and potable alcohol industries. Growth of 10-15% is forecast for 2002.

Sales of baking enzymes grew particularly strongly in North America and also to some extent in Europe, where existing products sold well. Enzymes for the brewing industry continued to perform well, thanks largely to greater market penetration in Latin America and Russia.

Other applications of food enzymes include special foods and oils and fats. Both these areas also showed very healthy growth in 2001.

Novozymes expects the market for food enzymes to continue to grow by an average of 10-15% a year. ■



Feed enzymes – sales grow fast

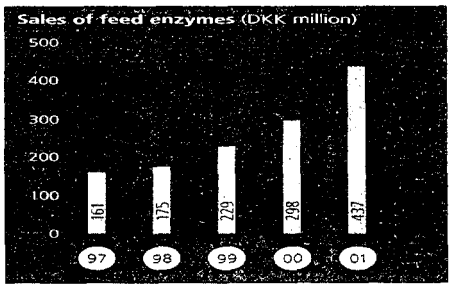
Feed enzymes forecast to grow 10-20% a year.

There was extremely strong growth of 47% in enzymes for animal feed in 2001. Growth of 15-20% is forecast for 2002.

Enzymes are added to animal feed to improve its nutritional value and reduce the environmental impact of livestock farming by minimizing the release of phosphates. There was particularly rapid growth in sales of the enzyme phytase in 2001.

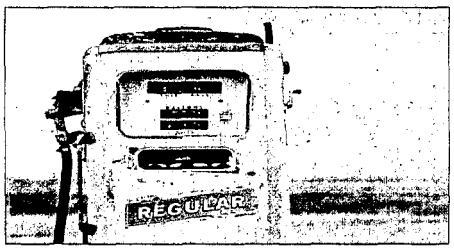
The strategic partnership with Roche has proved to be a strong alliance – in terms of not only phytase but also a number of other feed enzymes as Roche has identified and developed a number of brand new openings in the market.

Novozymes expects sales of enzymes for animal feed to grow by an average of 10-20% a year in the long term. ■

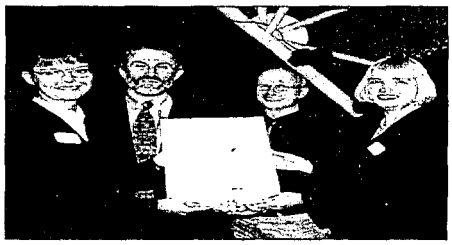


The year in pictures – some highlights of 2001

Everything went with a swing in Novozymes' first year as an independent company. And the work also bore fruit. In 2001, the company received a number of awards, not least for its environmental efforts and for making Novozymes a good place to work. We also won the accounting award for the best annual report in Denmark.



American grant for biofuels · 9 January
Novozymes Biotech, Inc. is awarded funding of up to USD 14.8 million by the US Department of Energy to develop enzymes that can turn biomass into fuel ethanol.



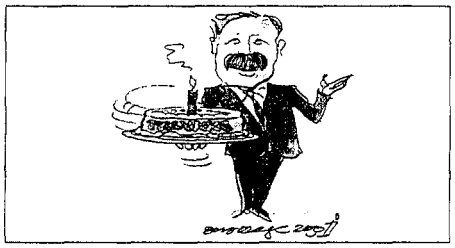
Prize for best environmental and social report · 9 April
The Novo Group wins the European Commission's prize for the best integrated environmental and social report in Europe.

Environmental performance recognized · 26 June
Novozymes becomes the first Danish company to receive the Presidential Green Chemistry Challenge Award from the US Environmental Protection Agency.

Acquisition of Sybron Biochemicals · 1 July
Novozymes acquires US producer of micro-organisms for turf improvement, etc.

A magical night in China · 13 July
A magical night in China – 350 employees celebrate Novozymes' characteristics of Spark, Science, Passion and Openness.

Unlocking the magic · 15 September
Unlocking the magic – 1,800 employees and their families attend an open day at Bagsvaerd, Denmark.



Novozymes' first birthday · 13 November
Novozymes celebrates its first birthday as an independent company and Steen Riisgaard was on hand with a birthday cake.

Best annual report · 21 November
Novozymes is awarded the financial newspaper Børsen's prize for best annual report.

DANMARKS BEDSTE ARBEJDSPLADSER 2001

10th best workplace · 3 December
Novozymes is named the tenth best place to work in Denmark by Børsens Nyhedsmagasin, the Oxford Group and the Great Place to Work Institute.

Providing an insight into the company's activities

Michael Steen-Knudsen, head of Investor Relations, and Thomas Kudsk Larsen, manager in Investor Relations, closely follow the company's business and production in order to have updated information for analysts and investors.

The Internet, personal contact and detailed knowledge are among the key tools in Investor Relations' work.

Novozymes' Investor Relations is keen to promote open and proactive communication with all shareholders and investors, both private and institutional.

To achieve this, Novozymes communicates with shareholders through several channels. The key source of information for private shareholders is the Investor Zone on the company's website at www.novozymes.com. Here investors can view reports and stock exchange announcements as soon as they are published, as well as listen in on the associated teleconferences. The website can also be used to subscribe for e-mails with important news from Novozymes and contains a wealth of background material.

Investor Relations sets great store by providing an insight into the business through personal contact with financial analysts and so holds meetings with institutional investors and financial analysts throughout the year at head office in Bagsvaerd and in the world's financial centres, such as London, New York, Frankfurt and Paris.

Further information and analyses can be obtained from more than 15 leading banks and stockbrokers that constantly monitor Novozymes. A complete list can be found in the Investor Zone. ■

Shareholders take enzymes home

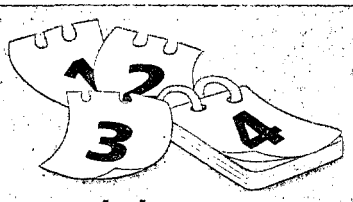
Novozymes is sharpening its focus on private investors, hosting special meetings to increase understanding of enzymes.

A small bag lies on the table in front of each shareholder attending Novozymes Investor Relations' first meeting for private investors in November 2001. On the agenda are CEO Steen Riisgaard with a presentation of the business and two financial analysts with their views on Novozymes and a talk on international equity strategies. The bag contains a sample of Novozymes' baking enzymes, including antistaling enzyme Novamyl®, which keeps bread softer for longer and generated record sales in the USA and Europe in 2001. The idea is to give investors a tangible example of Novozymes' products and an opportunity to try them for themselves at home.

"We're keen to give our private investors a chance to hear about what Novozymes is up to and what the enzymes we produce mean for our everyday lives," says Michael Steen-Knudsen, head of Investor Relations. "Our overriding objective is to present the very core of Novozymes' business: researching and developing new enzymes that can improve the quality of foods and consumer goods as well as bring down manufacturing costs."

More meetings will be held this year in conjunction with private client advisers and investment departments at the Danish banks. ■

Did you know that the word enzyme comes from the Ancient Greek in yeast, reflecting the fact that enzymes were first demonstrated in ordinary baker's yeast?



Financial calendar 2002

- **20 March:** Annual meeting of shareholders
- **8 May:** Announcement of financial results for the first three months
- **14 August:** Announcement of financial results for the half-year
- **6 November:** Announcement of financial results for the first nine months

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THE ZYMES

NOVOZYMES' SHAREHOLDER MAGAZINE · NO.2 · SEPTEMBER 2002

Strategic alliance with Chr. Hansen A/S

New strategic cooperation to ensure quicker and more targeted launching of new products for the dairy industry.

Additional competences and technologies in enzymes for the dairy industry will form the basis for an alliance which Novozymes entered with Chr. Hansen in August. The aim of the alliance is quicker launching of new products for i.a. more efficient cheese production and improved taste.

"In our new strategy, Novozymes has placed particular focus on new, market-expanding areas in enzymes. One of these areas is processed foods and, hence, also enzymes for the dairy sector. We have good experience of strategic alliances and see good opportunities in this cooperation with Chr. Hansen," says Steen Riisgaard, Novozymes' President & CEO.

Among other things, Novozymes already has a number of patents and applications for the enzyme phospholipase, which can facilitate more efficient cheese production. With Chr. Hansen's know-how and global sales network, the concept can be marketed effectively and quickly to the dairy industry.

It is anticipated that the alliance will be able to market the first product in two-three years. In the long term, the agreement is expected to increase Novozymes' sales of enzymes to the food industry and ensure continued growth in this area. ■

Chairman of the board Henrik Gürtler stressed the importance of corporate governance with regard to shareholders and other stakeholders.

Praise from the rostrum

A record number of shareholders gathered for the annual meeting at the Falkonér Centre in Copenhagen in March. About a thousand came to hear chairman of the board Henrik Gürtler's report on Novozymes' first full year as an independent company. He took the opportunity to stress the importance of corporate governance with regard to shareholders and other stakeholders. The Employees' Capital Pension Fund (LD), The Danish Labour Market Supplementary Pension Scheme (ATP), The Danish Shareholders Association and a single private shareholder then took the rostrum and praised Novozymes' results for 2001. Particular mention was made of Novozymes' openness and communication. ■

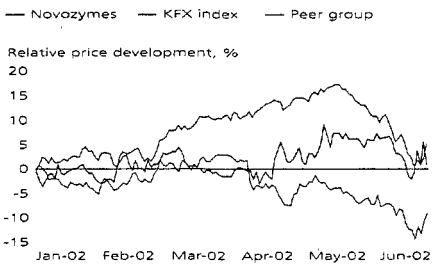
This is how the share has developed

Since the end of the first half of 2002, turbulent share markets and the falling US dollar have taken their toll on the Novozymes share, although otherwise it has held its own in the first half-year.

For the half-year, seen in isolation, Novozymes performed about 10% better than the KFX index of the 20 most traded shares on the Copenhagen Stock Exchange. At the end of the first six months of 2002, the share price was DKK 170, around 1% higher than at the start of the year. During the same period, the KFX fell about 9%.

Relative to an international peer group in biotechnology, food ingredients and specialty chemicals, Novozymes underperformed slightly; this reference group rose by about 5% during the same period. ■

Novozymes' B share in the first half of 2002



Share facts for the first half of 2002

- 16th most traded share in Copenhagen
- Shares traded: 14.5 million
- Market value of shares traded: DKK 2.5 billion
- Market capitalization at end of June 2002: DKK 12.8 billion

Shareholder information

The editorial team follows up on a few readers' enquiries which concern many Danish shareholders.

Requiring the annual report

The annual report is no longer sent out automatically. Instead, it can be downloaded from www.novozymes.com or ordered from The Zymes at: thezymes@novozymes.com

Only one copy of The Zymes

Some Danish shareholders are receiving more than one copy of The Zymes. You can arrange for your bank to combine your deposits and thus avoid receiving more than one copy in future. If not registered by name, you can again do so by contacting your bank. Likewise, any changes in name and address should also be carried out at your bank.

novozymes®
Unlocking the magic of nature

A busy spring

This spring has been a season of change for Novozymes. The acquisition of companies and advances in non-enzyme projects have dominated the first half of 2002.

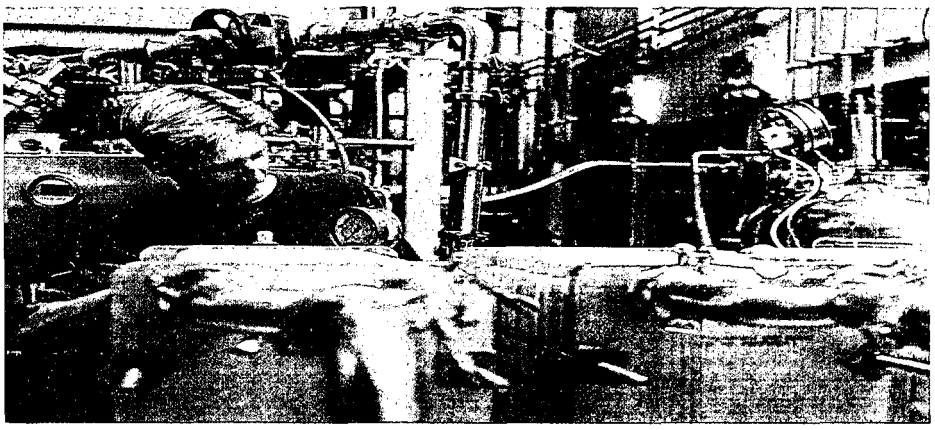
Our new strategy has caught the wind in its sails and a new business structure has begun to take shape with two new siblings for the enzyme business area. The industrial microorganisms field has already found solid ground, whilst the chosen projects in the pharmaceutical field have taken their first steps as a third business area. In this way, we have clearly made good progress in realizing the strategic ambitions we set in August last year.

Occasionally I have met with wonder at our focus on the pharmaceutical field following the demerger from Novo Nordisk. Let me make it clear – Novozymes has no ambition to be a pharmaceutical company, but we would like to make use of our know-how and technology in cooperation with others. For us, partnerships are the way forward. We can utilize our fermentation and protein technology by contributing to other companies' development and production of pharmaceutical products.

Our various activities in the spring may not have made the Novozymes share soar, but in a share market characterized by a surly mood and major slump we have still been able to keep ourselves reasonably clear of the rocks by comparison with other KFX companies.

In the future we will build further on our know-how and competences. We have a technology which has its origins in nature and which in several areas is a healthier alternative to chemicals both in industry and the daily life of private households. Our target is to research and utilize these opportunities and to explain some of these mysteries of nature. If we look ten years ahead, it is my hope that we will have shown our stakeholders that sustainable, biological solutions can be economically successful and still provide value for shareholders, consumers and industry.

Yours faithfully
Steen Riisgaard, President & CEO



BioGaia's production plant is approved for pharmaceutical production in accordance with stringent European regulations and has thus brought Novozymes several years closer to supplying the pharmaceutical industry.

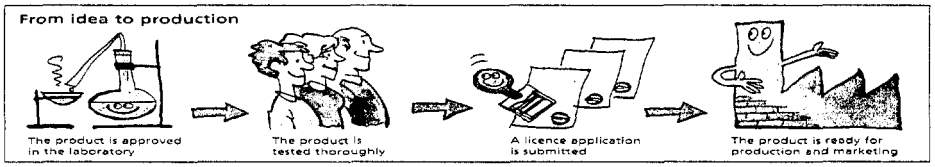
A shortcut to pharmaceutical production

Novozymes has taken giant strides forward and saved several years by acquiring BioGaia Fermentation in June.

An established customer base in the pharmaceutical industry and a cGMP-approved production plant were all part of the deal when Novozymes took over the Swedish firm BioGaia Fermentation in June. The cGMP certificate means that the production plant is approved for the production of pharmaceutical products, bringing a position in the pharmaceutical market within reach earlier than expected.

"We have saved about three years – the time it would have taken us to obtain the required approvals and attract our first customers. At the same time, we have picked up employees with experience and skills in this area," says Steen Riisgaard of BioGaia, which was renamed Novozymes Biopharma after the takeover.

In the long term, the plant can contribute to Novozymes' production of own products such as hyaluronic acid and antimicrobial peptides. At the moment, Novozymes Biopharma produces proteins for other pharmaceutical companies, both small amounts for testing and large amounts for further processing and sale. It is estimated that the acquisition will increase Novozymes' turnover by almost DKK 20 million in 2002. ■



The process from concept to product takes a long time in pharmaceutical production, where testing and approval of the individual product alone can take up to six years. Novozymes can now help pharmaceutical producers in the introductory phase when they are producing for testing and later when production switches to full-scale.

Nordic Partnership on sustainability

Together with 14 other companies, Novozymes has been working within the Nordic Partnership Forum on a Nordic contribution for the UN World Summit on sustainable development in Johannesburg in August/September. A year's work has resulted in a report with joint conclusions and a manifesto informing stakeholders what they can expect of the 15 companies in the future. The companies undertake in the manifesto to:

- continue the work of sustainable development in cooperation with public institutions, private organizations and other stakeholders;
- increase awareness of the need and opportunities for global sustainable development;
- process the results of the Nordic Partnership and integrate them into their own companies.

The initiative for the Nordic Partnership was taken last year by the World Wildlife Fund and the news think-tank *Mandag Morgen*. ■

Sustainable development: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Source: The World Commission on Environment and Development's (the Brundtland Commission) report Our Common Future. (Oxford: Oxford University Press, 1987).

Novozymes' new strategy

The strategy which Novozymes launched in August last year has three focus areas:

- Enzymes for industrial use (the existing business)
- Industrial microorganisms
- Pharmaceutical proteins and hyaluronic acid:
  - Contract production of pharmaceutical products
  - Peptides for treating infections
  - Production of our own fermentation products, i.a. hyaluronic acid.

A diverse workforce

"Take up vocational experience with us and receive sound advice on the requirements of a Danish workplace." This was the invitation in May when Novozymes signed an agreement with four workers who had recently taken Danish citizenship offering them six months' vocational experience. The vocational experience agreement is the result of a partnership with Gladsaxe Municipality and presently covers persons with an academic background who have not been able to find employment in the Danish labour market. The aim is to give workers quality feedback on their qualifications in terms of their job requirements. The vocational experience includes i.a. a mentor scheme, training in making job applications, and monthly lunch meetings between the workers and staff from Human Resources. A more diverse workforce with respect for equal opportunities is a focus area of Novozymes' social responsibility strategy. At Novozymes Brazil, they have chosen to focus on employing women and disabled persons in production; these two groups have not previously been represented in the Brazilian company's workforce. ■

Ludmilla Rudina is one of the four workers with an academic background who will spend six months at Novozymes gaining further qualifications for a job in the Danish labour market.

Partnership in anti-wrinkle cream and pharmaceuticals

Smooth skin, fewer wrinkles and more sightly post-operative scars are some of the benefits of hyaluronic acid, which is used both in cosmetics and as a pharmaceutical product. It can also be used to improve the consistency of certain foods. In May, Novozymes took the first step in entering this market by signing a licensing agreement with the company Hyalose LLC on the use of their hyaluronic acid technology. The market for hyaluronic acid is growing as researchers continue to find new application possibilities. The current market value is estimated at over DKK 4 billion in producer prices. The technical market, which includes cosmetics and foods, makes up about DKK 800 million of this. The rest is accounted for by pharmaceutical products. The first product for the technical market is expected to be launched in 2004. ■

Anti-wrinkle cream is one of the areas of the technical market where hyaluronic acid technology can be used.

Novozymes becomes the largest producer of microorganisms

With two acquisitions this summer, Novozymes has made a solid move into the market for industrial microorganisms for i.a. cleaning and wastewater treatment.

The acquisitions of the activities in the American companies George A. Jeffreys in June and InterBio in July have firmly underlined Novozymes' position as the world's leading producer of industrial microorganisms. The first, second and third most important companies on the market have duly been acquired and integrated into Novozymes' business. With a leading market share in the technical field, Novozymes' new business area for industrial microorganisms has now firmly established itself. Microorganisms have wide-ranging possibilities in technical applications, e.g. effective and environmentally friendly methods for i.a. cleaning sewage systems, treating wastewater and growing lawns and plants. Microorganisms can also be used in animal feed and food production, although in the first instance it is the technical sector which Novozymes has set its sights on. The first step into the market was taken with the acquisition of Novozymes Biologicals last year. ■

Two acquisitions in microorganisms

George A. Jeffreys

Activities acquired 11 June. The company's main business is naturally occurring microorganisms and enzymes for animal feed and maintenance of septic tanks. The company's turnover in 2001 was DKK 60 million. The acquisition is expected to increase Novozymes' turnover by DKK 25 million in 2002.

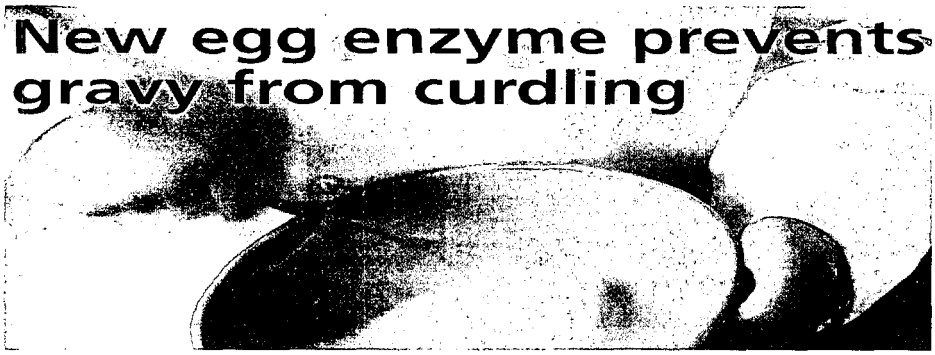
InterBio

Main activities acquired 2 July. Novozymes has acquired InterBio's two main business areas: microorganisms for cleaning products and wastewater treatment. The turnover for the two areas in 2001 was just under DKK 60 million. It is expected that the acquisition will increase Novozymes' turnover by DKK 20 million in 2002.

What a tackle!

Taegu Stadium in Korea, where Denmark drew 1-1 with Senegal and Korea drew 1-1 with the USA, had a serious problem leading up to this year's World Cup. The turf at Korea's largest football stadium (capacity 65,000) would not put down roots. The Korean Turf Institute recommended TurfVigor® from Novozymes Biologicals. The result was that the turf was saved, with a grassroot depth of more than 20 cm after treatment ensuring the World Cup a green, hard-wearing surface. TurfVigor is a culture of microorganisms which improves the grassroot network and growth conditions and is therefore also used on many golf courses.

New egg enzyme prevents gravy from curdling



Novozymes' new kosher/halal-certified enzyme will help egg producers and food manufacturers.

Egg yolk is used in foods such as mayonnaise, sauces, dressings, ice-cream and baked goods as an emulsifier to ensure consistency and make it possible to mix fats and water. The enzyme Lecitase® Ultra can enhance these properties in egg yolk and thus help to replace the artificial additives which are often used to make food production more effective. As well as enhancing the capability of the egg yolk as an emulsifier, the enzyme treatment can also reduce the risk of salmonella bacteria and make the egg yolk more heat-stable. Lecitase Ultra was originally developed for baking, but, as is often the case, the same enzyme can be used for many things.

"In the past, we extracted enzymes for egg production from the pancreatic glands of pigs, but this precluded their use in kosher and halal food. We therefore looked round for a new enzyme which could do the same thing, but which was not extracted from pigs. It turned out that an enzyme originally developed for baking had the very properties we were looking for," explains Per Munk Nielsen, business development manager for Oils & Fats at Novozymes.

In the baking industry, the enzyme had been developed to utilize the natural fat content of flour to enhance its baking properties and give the bread a better crumb and greater volume, but even better enzymes have now been launched for baking. Lecitase Ultra is just one of many enzymes for the food industry, a market which Novozymes expects to grow by 10-15% per annum on average. ■

Animated film on enzymes
View an animated film on Lecitase® Ultra: www.novozymes.com/enzymes4eggs

Successful research into fat stains

Stubborn fat stains now have a new enemy. The detergent enzyme Lipex® increases your chances of removing fat stains in the first wash.

Lillian Tang og Maria Hockauf from R&D have seen good results in testing Lipex in different detergents.

Lipex is a new detergent lipase which was developed using a new technology called directed evolution. The new technology is a result of Novozymes' heavy investment in research and development. Using directed evolution, the researcher can target the individual enzyme molecule as opposed to previously with the random method. Compared with existing detergent lipases, Lipex is significantly more active and hence ensures that fat stains are removed effectively in the very first wash. Lipex was launched in the first quarter as the first of several new detergent enzymes which Novozymes is launching this year. The new products will help to ensure Novozymes' position in the generally tough market for detergent enzymes. ■

First product from new focus area

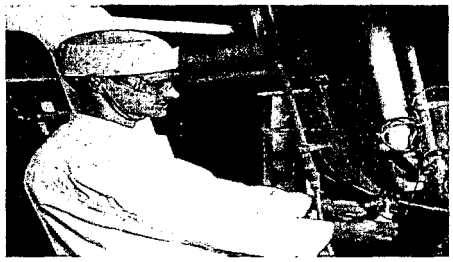
In 2001, Novozymes focused on new enzyme applications to expand the market and ensure growth. The first result, from the forestry focus area (products for the pulp and paper industry), is a product which has solved a major problem in the manufacturing of recycled paper. Glue from labels, envelopes and other paper goods get stuck in the machinery so that it has to be shut down and cleaned. The frequent stops in production entail costs which the new enzyme can save the paper industry. The enzyme dissolves the glue and production can continue without the unwanted stops.

"We have developed the enzyme in close cooperation with one of the large suppliers in the paper industry. It has been a successful process which bodes well for the future of the product," says Henrik Lund, director of the forestry focus area. ■

Savings of 10-13% on water and energy

Novozymes is continuously striving for minimal environmental impact. In this regard, streamlining production is the be-all and end-all.

The fermentation processes for producing enzymes require water, energy and raw materials in the form of agricultural produce. Gene technology is used to reduce consumption because genetically modified organisms can often produce far more enzyme than naturally occurring organisms when using the same resources. Every year, Novozymes sets targets for saving resources according to an eco-productivity index for ensuring a healthy balance between resource consumption and production yield. The consumption of water and energy is the key indicator of the effectiveness of production. If water and energy consumption is reduced, the consumption of other raw materials is also reduced. The figures for water and energy productivity improved last year by 10% and 13% respectively – although the target was 5%. The new target for 2002 for the utilization of water and energy is a further improvement of 5%. ■



Last year, Novozymes' factory in Kalundborg was awarded Dansk Energi's prize for "most energy-efficient company".

New products in the first half of 2002

- Lipex®. A detergent enzyme (fat-splitting lipase) which removes stains in the first wash
- An enzyme for the pulp and paper industry which dissolves glue in the manufacturing of recycled paper
- Termamyl® Ultra 300 L. A detergent enzyme (starch-degrading amylase) which is more stable and efficient in liquid detergents and which removes stains produced by rice, potatoes and pasta
- Lecitase® Ultra. A food enzyme (lipase) which improves the properties of egg yolk in e.g. mayonnaise
- Savinase® Ultra. An improved detergent enzyme (protein-degrading protease) which is more stable towards other enzymes in liquid detergents and which removes proteinaceous stains produced by grass, blood, egg and sweat

In some places in Japan, soya is still produced in fermentation barrels using the ancient method.

Traditional culture forms framework for modern high-tech

Japan is a country where ancient traditions in food production go hand in hand with ultra-modern biotechnology. With a population of 127 million, the country is a rich land for propagating enzymes.

Microorganisms and enzymes have been used in Japan for hundreds of years, among other things for producing foodstuffs such as miso (a seasoning) and soy sauce, both of which are produced by long-term fermentation. This centuries-old know-how is used today by Novozymes researchers in Japan in their work with enzymes and the microorganisms which produce them. The processes are now helped along by modern technology based on Novozymes' extensive knowledge of microbiology. The unrivalled ability of the Japanese to see the prospects in new technology has helped pave the way for the use of enzymes.

"The Japanese market is of interest because there is enormous potential for selling enzymes here in Japan – there are 127 million Japanese and some of the world's biggest companies, and hence obvious marketing opportunities in many industries," explains Hiroyuki Saito, President of Novozymes in Japan.

The setting up of a Japanese sales office almost 30 years ago has, in addition to attractive sales, also opened the door to new and highly talented employees. At the start of the '80s, Novozymes established its own research and development unit in Japan, which over the years has grown into a group of nearly 40 employees focusing on modern genetic engineering, protein chemistry, fermentation and local, customer-oriented enzyme applications.

"The use of biotechnology is widespread in Japan, and the Japanese universities have a tradition for applied microbiology, not just research for the sake of research. We have therefore had access to some very gifted researchers in microorganisms and enzymes," says Hiroyuki Saito. ■

According to President Hiroyuki Saito, high competence in applied microbiology is a major reason why Novozymes has a research unit in Japan.

Centuries-old technology

The Japanese love traditional foods such as miso and soy sauce, which can be found in any Japanese kitchen. Miso is a seasoning made from salt, water and soya beans, rice or barley. A good miso requires the ingredients to ferment for months with the fungus *Aspergillus*. This fungus, which the Japanese have been using for centuries, is related to the microorganisms which Novozymes itself uses in its modern production of enzymes. Soy sauce, which is slowly finding acceptance in households throughout the world, is made in the same way by long-term fermentation.

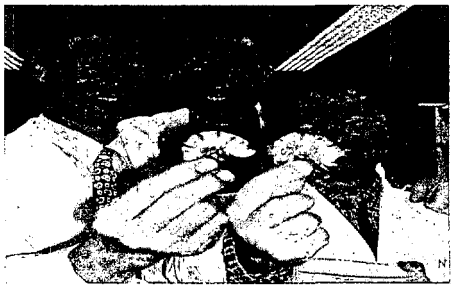
For many years, the Japanese have thus been able to unlock the magic of nature in their food production – the very idea behind Novozymes and its production of enzymes and microorganisms. ■

Soy sauce is one of the obligatory accessories for sushi. For hundreds of years it has been made according to a method which is similar to the modern technology used by Novozymes today.

Novozymes in Japan

Market share: More than 50%
Products:
- enzymes for detergents (majority)
- enzymes for the starch industry
- enzymes for animal feed
- enzymes for brewing, textile processing and other minor industries.

In 2001, Novozymes began close cooperation with our long-time Japanese distributor Mitsui & Co., one of the largest and oldest trading companies in Japan. The affiliate Novozymes Japan, Ltd. is thus owned by both Novozymes (60%) and Mitsui.



Thomas C. Beck is returning home to Denmark after four years of inspiring work in Japan with colleagues Tan Nakagawa from Sales & Marketing and Naoto Uyama from R&D in Japan.

Home after four fantastic years in Japan

"It's the best thing my family and I have ever done," enthuses director Thomas C. Beck. With his family, he has just returned to Denmark after a four-year posting in charge of research and development in Japan.

"It's been four fantastic years. Japanese industry and universities are well advanced and have many interesting enzymes lying in deep-freeze just waiting to be brought to light. As part of a Japanese team, I have also learnt a lot about international management, customer contact and, not least, interdisciplinary cooperation, all of which will be a great help in my new job. Respect for other cultures and, above all, tolerance and understanding for other people are important lessons in this context," says Thomas C. Beck, who is returning to a job at Novozymes in Bagsvaerd as head of the new hyaluronic acid project.

"In spite of extremely long working hours, my family and I have become much closer. The posting in such a very different society has given us incredible, exotic experiences together." ■

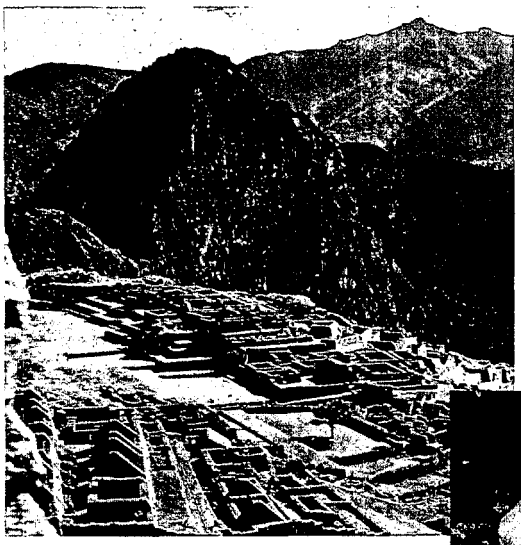
Continued growth in the first half-year

Key figures	First half 2002		First half 2001		%
	DKK mill.	Euro mill.	DKK mill.	Euro mill.	change
Net turnover	2,715	365	2,508	338	8
Operating profit	429	58	385	52	11
Net financials	-52	-7	-3	0	-
Profit before tax	377	51	382	51	-1
Net profit	270	36	263	35	3
Operating profit margin	15.8%		15.4%		

1 euro = DKK 7.43

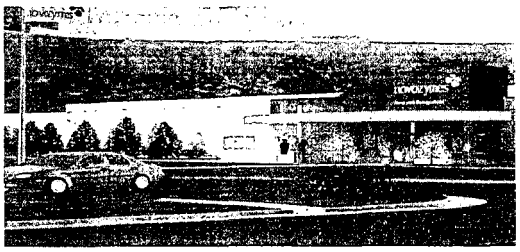
Novozymes experienced continued growth in the first half of 2002, although the results were affected by lower exchange rates. Sales rose by 8% to DKK 2,715 million. Discounting the lower exchange rates, sales rose by 10%. Operating profit increased by 11% to DKK 429 million, whilst net financial expenses rose from DKK 3 million to DKK 52 million. This high expense level was due i.a. to an unrealized loss on Novozymes' financial holding of around 220,000 Novo Nordisk shares. Profit before tax therefore fell slightly to DKK 377 million, whilst net profit rose by 3% to DKK 270 million. Despite the headwind in currencies and revaluation of shares, Novozymes' expectations for growth in annual net profit are unchanged at 5-7%, this is provided that the exchange rates remain at their present mid-August levels. ■

Pictures from the first half of 2002



Mountain trek in Peru raises money for children's hospital

In June, Meera Ralhan-Medana, director for human resources at Novozymes France, went trekking in the mountains of Peru to raise money for a children's hospital in London. The trek was arranged by Great Ormond Street Hospital Children's Charity, which every year helps more than 100,000 children from around the world with rare and life-threatening illnesses.



New site in Roanoke County

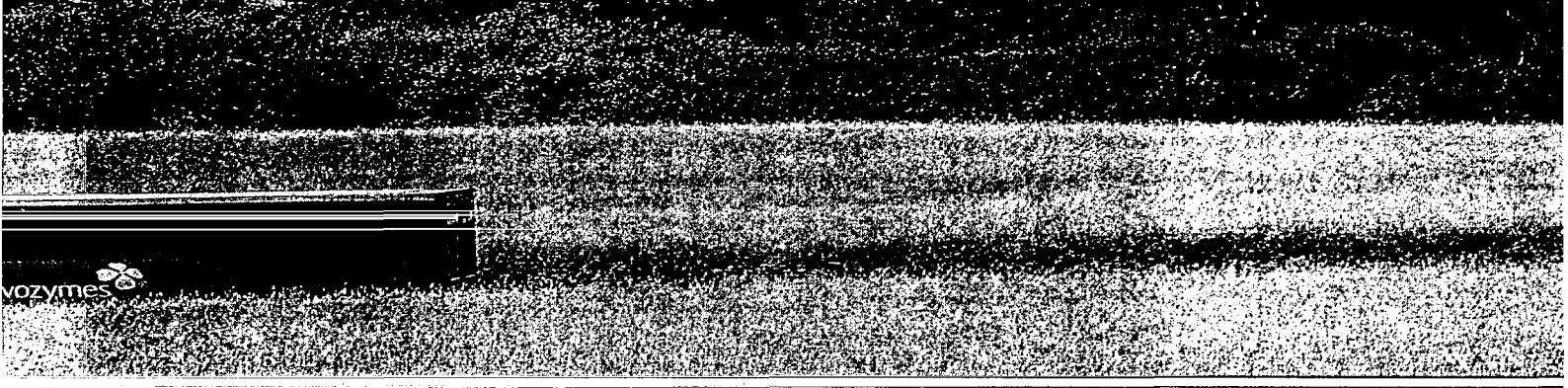
In March, work began on Novozymes Biologicals' new building at Roanoke County Research and Development Center in Virginia, USA. The new site occupies an area of ca 2,000 m². Novozymes is investing USD 12 million in the project over the next five years.

Night hike for cancer research in the USA

This spring, Novozymes employees in Franklinton, USA, took part in a night hike to create awareness of and raise funds for the American Cancer Society. They succeeded in raising 3,500 dollars for the cause.

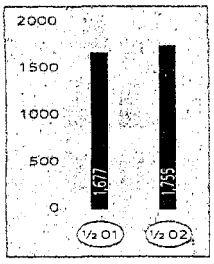
Agreement signed on hyaluronic acid

"This is a real milestone," announced President & CEO Steen Riisgaard in May when he signed the agreement giving Novozymes access to a number of the firm Hyalose LCC's patents relating to hyaluronic acid. The agreement is the first example of Novozymes activities outside the area of enzymes and microorganisms.



Higher growth in smaller industries

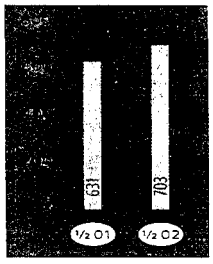
Sales of technical enzymes etc. increased by 5% to DKK 1,755 million. Detergent enzymes accounted for DKK 1,040 million of this, a fall of 6%. Sales of other technical enzymes, etc. increased by 27% to DKK 715 million, positively affected by the acquisition of Novozymes Biologicals and rising sales in textiles, leather and forestry. Four new products were launched – three new detergent enzymes and one enzyme for use in processing recycled paper. For 2002, we now expect a growth in sales of technical enzymes, etc. of around 3%, affected by lower exchange rates.



Solid growth in baking

Sales of food enzymes increased by 11% to DKK 703 million during the first half-year, positively affected by baking enzymes. Sales of enzymes for the beverages industry experienced lower growth due to poor harvests of fruit and vegetables. One new product was launched in the spring, Lecitase® Ultra.

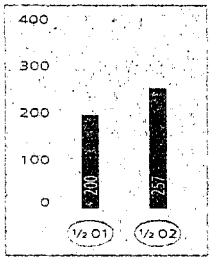
For 2002, we still expect growth of 10-15%, although this will be affected by lower exchange rates.



Phytase drives sales

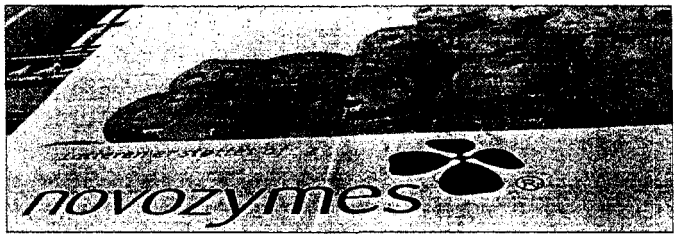
Sales of feed enzymes increased 29% to a total of DKK 257 million. The feed enzyme phytase, or Ronozyme® P, which is sold in alliance with Roche, continues to forge ahead. Sales to new markets, i.a. the USA, Mexico and Brazil, have shown highest growth. For the whole of 2002, we still expect growth of 15-20% in sales of feed enzymes.

Unlike technical enzymes and food enzymes, sales of feed enzymes are not as susceptible to movements in exchange rates.



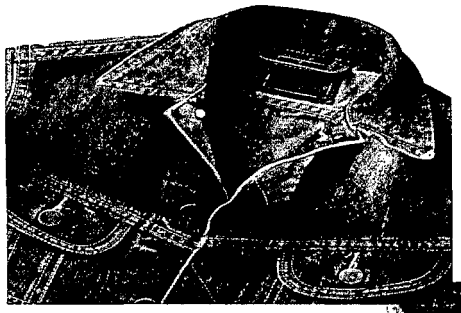
Novozymes sponsors a good laugh

The first Sunday in May is World Laughter Day and on that day Laughter Club International provides exercise for laughter muscles throughout the world. This year, Novozymes sponsored a giant banner of laughing lemons to advertise the festivities. The theme of this year's Laughter Day was "Liberating laughter"!



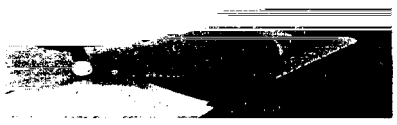
Knowledge is best shared face-to-face

Every year, Novozymes researchers from around the world gather to swap ideas and present their latest findings on the magic of enzymes. In all, 200 researchers gather for one week in March every year for a giant workshop at headquarters in Bagsvaerd, Denmark.



If you want to be smart, it has to be denim

With this year's fashion for flared jeans, Novozymes has shown its own flare for denim with an upward swing in business in the textile industry and increased textile production in i.a. Brazil and China.



If Novozymes was an animal...

... it would be an okapi. The okapi is efficient and over time has perfectly adapted to its surroundings. For this reason, employees at Novozymes chose the okapi as the animal that Novozymes should sponsor at Copenhagen Zoo. Just as Novozymes is a mixture of many different people, the okapi resembles a combination of many different animals. And whilst it has always been there, it has only recently been discovered – just like enzymes and Novozymes.

Keeping an eye on Novozymes

A well-run company, open management and an interesting new strategy: this is the verdict of four equity analysts in informing their customers of Novozymes' potential. But they also see a number of Achilles' heels.

Don't stride further than your trousers will allow! Thus warns an old proverb which is highly pertinent to Novozymes' business strategy, at least if you listen to four of the many equity analysts from the 17 banks and stockbrokers which routinely follow Novozymes' activities.

Realistic expectations

An important task for a listed company is to set a level of expectation which the company is able to meet, because to a large extent the share price is driven by investor expectations.

Henrik D. Simonsen, senior analyst with Nordea Securities, believes that Novozymes has been able to set a realistic level of expectation through open communication.

"Novozymes is expanding slowly but surely by buying up small companies which fit in with the existing business and by investing in technologies which are a natural extension of the company's own competences. This slow, sure growth, combined with a steady stream of innovations, is a very sensible strategy right now with the stock markets falling and falling. Many investors had their fingers burnt when IT shares nosedived and now many are seeking refuge in gold and bonds or more stable shares such as Novozymes'," says Henrik D. Simonsen.

Good long-term potential

"Novozymes' share has not foundered, but has proved that it can ride the waves. Electronics, telecommunications and similar companies are susceptible to a declining market. But detergents, foodstuffs and animal feed, on which Novozymes bases its business, are always needed," says Cazenove analyst **Michael Yates,** who does not think that strong growth is just around the corner for Novozymes.

"Long-term contracts with large customers ensure Novozymes' sales here and now, but Novozymes' dependency on relatively few customers may make the company unsafe in areas such as detergents. Novozymes' new focus beyond its traditional areas therefore offers good prospects and has greater potential since Novozymes is adding strings to its bow. Purchasing small companies with the right competences will enable Novozymes to bring new products to the market more quickly," says Michael Yates, who therefore expects stronger growth within a few years.

Not just benefits in being a niche company

The analysts are agreed that Novozymes is an interesting and different company with a unique position in the enzyme market.

"Novozymes is interesting because the company has placed itself in a niche with high growth potential and few competitors," says **Claus Bo Larsen,** senior analyst with Deutsche Bank in London, and continues: "All the same, the company has made a special effort to play down expectations and not boost the share price. This has proved to be a good sense of timing because Novozymes was listed during a tough period – November 2000 – when many other new companies were beating their chests rather too much."

"However, being a niche company also involves a certain challenge because investors don't have anything definite to compare with and don't know which companies Novozymes should be positioned in relation to. During the first few years after the listing of Novozymes has lifted a major task in training investors and other stakeholders in what enzymes are and what enzyme technology can be used for."

Currency sensitivity an Achilles' heel

"The chemical companies with which Novozymes is often lumped are generally priced very low, so here in our opinion Novozymes' share will be mistakenly priced far too low. Novozymes' business is based on biotechnology and the company has now acquired a measure of pharmaceuticals and will benefit from the green trend, so Novozymes sits more reasonably in our biotech group," says **Annette Rye Larsen,** analyst with Carnegie.

"The company has great potential, but its sensitivity to fluctuating currency rates is an Achilles' heel, as has been particularly evident here in the summer with the dollar greatly weakened. 30% of Novozymes' sales are in dollars, and when these are converted to kroner there is immediately a bit less in the coffers," says Annette Rye Larsen, who in future will be keeping a close eye on the new strategic initiatives whilst still being aware of the core business from which growth must come for a good while yet. ■

6 November: Third quarter result 2002. To be downloaded from Investor Zone at www.novozymes.com

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THE ZYMES

NOVOZYMES' SHAREHOLDER MAGAZINE · NO.1 · FEBRUARY · 2003

You can now order The Novozymes Report 2002

The 2002 report was published in electronic form on February 10 and is available to download in both Danish and English from the Investor Zone at *www.novozymes.com*. The printed version will be available to order via the website from March 5. The report will not be sent out automatically to all shareholders. ■

New idea behind this year's report

All three bottom lines brought together in The Novozymes Report 2002.

Starting this year, Novozymes is bringing together all of its reporting in a single report. Previously we published an annual financial report and a separate environmental and social report.

The new report reflects the way in which environmental and social responsibility is increasingly being integrated into our way of doing business. We are following a trend that is under way both nationally and internationally. We are taking the first step this year with a relatively short report that contains the information we consider to be the most important to the majority of our stakeholders. More detailed information can be found at *www.novozymes.com* and on a CD-ROM accompanying the report itself. This part of the report will be developed further in future years. ■

For the first time The Novozymes Report 2002 includes all three bottom lines: the financial, the social and the environmental.

Milestone in bioethanol project

Novozymes comes another step closer to eco-friendly fuels for tomorrow's engines.

The US Department of Energy (DOE) has approved the funding for the third and final year of Novozymes' research project.

The project involves finding profitable ways of turning vegetable waste into ethanol using enzymes. The overall goal is to cut the cost of turning vegetable waste into ethanol by 90%. The latest funding approval comes after Novozymes reached the second technical milestone in a three-year contract with DOE. The three-year contract with the DOE began in January 2001 when Novozymes' US research unit Novozymes Biotech, Inc. was awarded funding of up to USD 14.8 million.

Bioethanol can replace the environmentally hazardous additive MTBE (methyl-tert-butyl-ether) in petrol (gas). Many states in the USA have phased out the use of MTBE in petrol or plan to do so. ■

After DOE's approval Novozymes Biotech, Inc., USA, can now take on the third year of the bioethanol project. Head of research Steen Skjold-Jørgensen is looking forward to the results from his American colleagues.

Healthy price relative to KFX

The general downturn in the stock markets and falling exchange rates set their stamp on Novozymes' share price in 2002. The share price ended the year at DKK 148, down DKK 20.50 or 12% on the year earlier. However, the Novozymes share fared significantly better than the Copenhagen Stock Exchange's KFX index which fell by 26% in 2002.

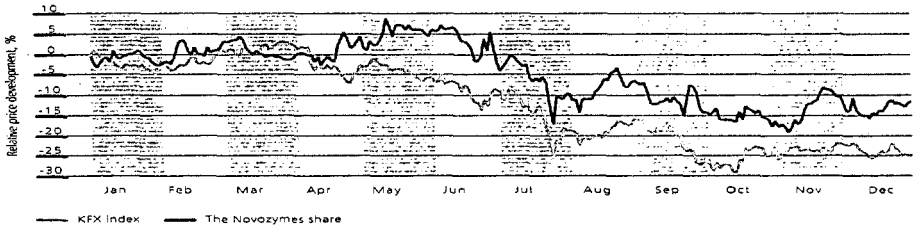
Novozymes held a total of 3,679,600 treasury shares at the end of 2002, equivalent to 4.9% of its total share capital.

At the annual meeting of shareholders on March 19, 2003 the Board of Directors will recommend the payment of a dividend of DKK 2.25 per share for the 2002 financial year, equivalent to 26% of the year's earnings per share. ■

Share facts 2002

- 13th most traded stock on the Copenhagen Stock Exchange
- 29.3 million shares traded
- Value of shares traded DKK 4.7 billion
- Year-end market capitalisation DKK 11.2 billion. ■

Novozymes' B shares 2002



novozymes®
Unlocking the magic of nature

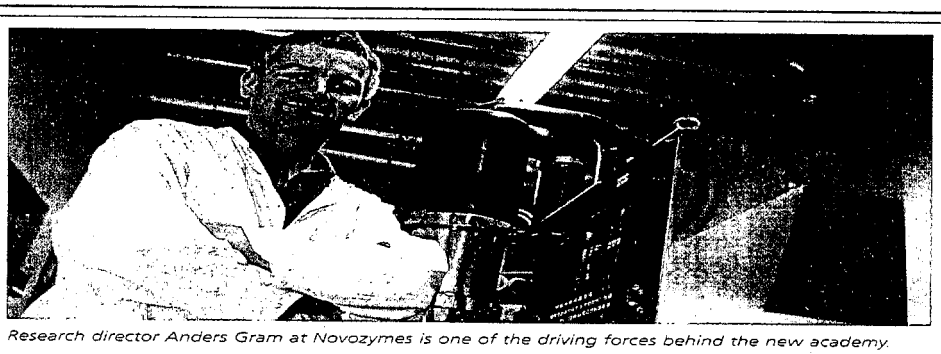
Best year yet

2002 was a year of considerable success for Novozymes. We met most of the targets we set ourselves, and with our strategic initiatives beyond enzymes we are beginning to really strengthen our profile as a biotechnology company. But there were also challenges in the form of falling exchange rates and stiff competition in the market for detergent enzymes. If currency effects are eliminated, our sales growth was the best ever. Sales of detergent enzymes stabilised during the year but this area will be less important for us in future due to strong growth in areas like food enzymes and feed enzymes. Our new microorganisms business area and new strategic initiatives will also contribute to our future growth.

2002 was also the year when we looked into the future and formulated a new vision that puts into words where we are headed as a company. Over the last 50 years we have learnt from nature's own technology and translated this knowledge into a first-rate business. Our vision is of a future where our biological solutions create the necessary balance between better business, a cleaner environment and better lives. We plan to drive a significant expansion of the market for industrial biotechnology with enzymes and microorganisms as our basis, and find new and improved solutions based on our core technologies to serve the market for biopharmaceuticals. We aim to achieve double digit growth with a leadership position in all markets served and we are committed to running our business in a sustainable manner.

The boundaries between business and sustainability are gradually being eroded and so this year we have merged our annual financial report with our environmental and social report. This issue of *The Zymes* features highlights from the combined report. Happy reading! ■

Kind regards,
Steen Riisgaard, President and CEO



Research director Anders Gram at Novozymes is one of the driving forces behind the new academy.

New academy to strengthen Danish biotech

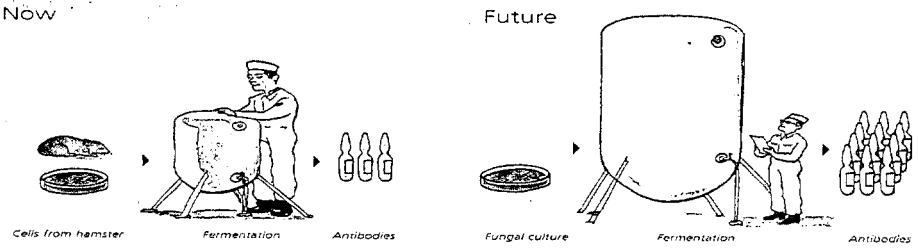
Novozymes and the Technical University of Denmark have launched the Novozymes Bioprocess Academy to strengthen biotechnological research in Denmark. The two partners will prioritise new methods for developing and producing biotech products and hope to improve Denmark's position in fields such as fermentation, protein recovery and product formulation. The academy will have an annual budget of around DKK 4 million, funded 50/50 by the university and Novozymes. The initiative is provisionally set to run for five years and will involve eight to ten PhD students, with the first due to start in spring 2003. ■

Replacing the use of mammalian cells

Alliance to search for new methods for safer and cheaper treatment of breast cancer and respiratory infections.

Novozymes has teamed up with US company Neugenesis to develop a simpler and cheaper way of producing antibodies for the treatment of diseases like breast cancer, leukaemia and respiratory infections. The technology used today is based on cells from mammals and is relatively expensive. It is hoped that in future it will be possible to produce antibodies using fungal cultures rather than mammalian cells.

Countless new antibodies will become ready for production in the coming years and so there is great demand for increased production capacity and new methods for antibody production. The collaboration with Neugenesis is part of Novozymes' strategy to expand its business beyond enzymes, one of whose focus areas is the production of pharmaceutical proteins. ■

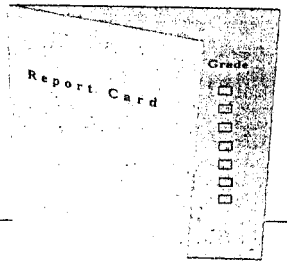


Today antibodies are produced by the use of technology based on mammalian cells. In the future the aim is to use fungal cultures instead in order to produce antibodies in larger scale.

Grades for board and management

In 2002 the Board of Directors and Executive Management used a new evaluation form as part of their efforts to ensure good corporate governance at Novozymes. They are to use the form to evaluate each other as a way of measuring, documenting and qualifying their co-operation. Initial experience of this process has been good and it has resulted in a number of concrete goals for future Board meetings:

- A sharper focus on news, non-conformances and relevant risk factors
- More stringent time management combined with greater discipline on the part of those attending
- More topics to be considered at Board meetings
- More background material to be sent to the Board on, for example, competitors, market developments and financial analysts' recommendations
- A more even balance in terms of time between the Board's main areas of responsibility, which were weighted as follows in 2002: 16.2% organisation and management of the business, 29.1% operational and financial reporting, 32.4% strategies and acquisitions and 22.3% miscellaneous. ■

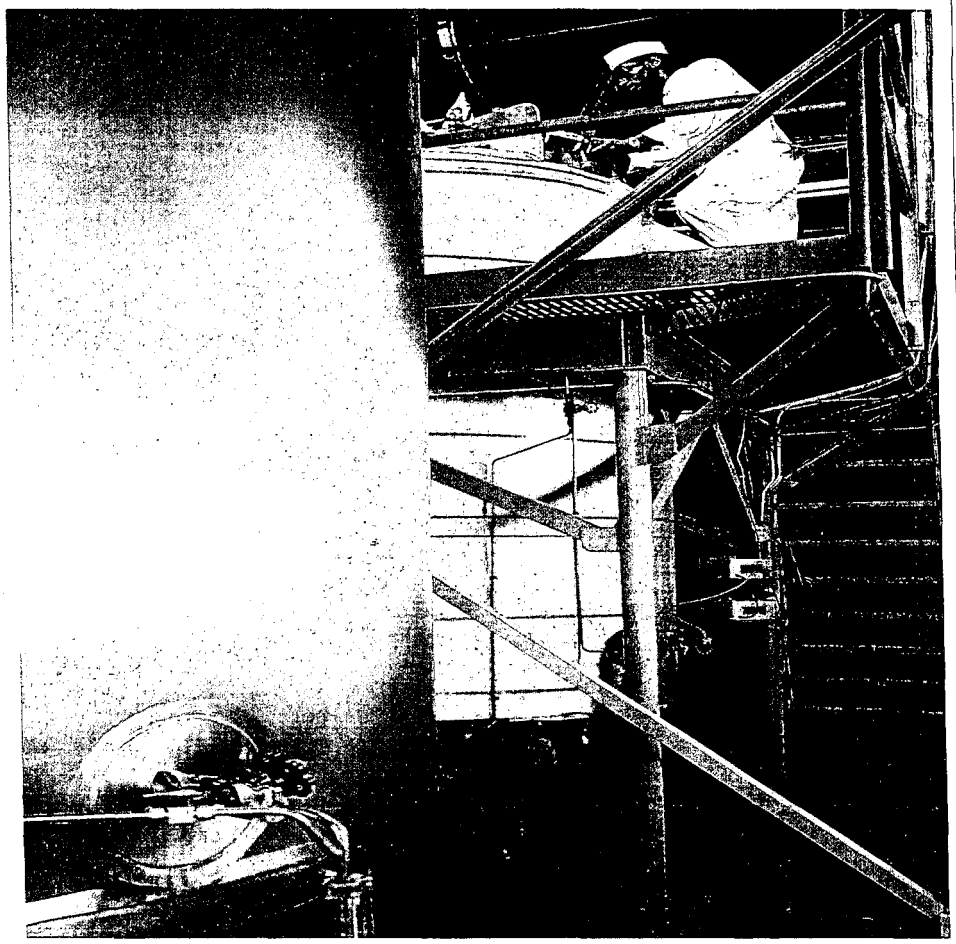


A company with niche technology

A method for spray-drying micro-organisms was a side-benefit of Novozymes' acquisition of Semco Bioscience in the USA.

At the beginning of 2003 Novozymes acquired the operations of US company Semco Bioscience, which produces and sells naturally occurring microorganisms for cleaning products and for wastewater treatment. Semco Bioscience differs from Novozymes' other acquisitions in industrial microorganisms in that it has a particularly effective technology for spray-drying microorganisms into powder form. This results in a very high concentration of microorganisms, which opens up new possibilities for the formulation of finished products.

The company generated turnover of around DKK 30 million in 2002 and will be an integral part of Novozymes Biologicals in Virginia, USA. The acquisition is expected to increase Novozymes' turnover by around DKK 30 million and impact positively on Novozymes Biologicals' operating profit margin. ■ 26 2



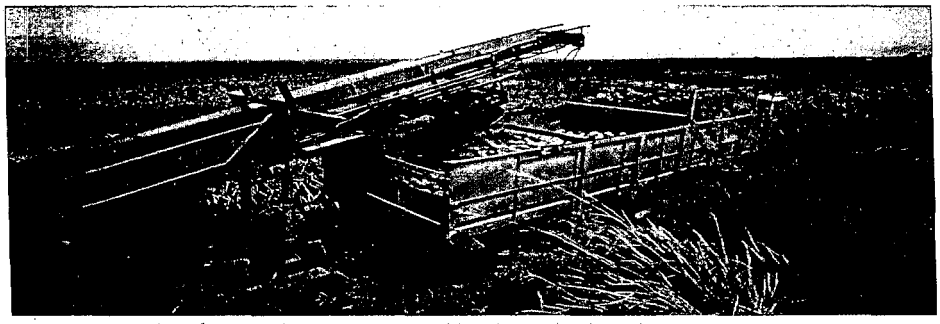
Fourth acquisition in the field

Novozymes has now made four acquisitions in industrial microorganisms: Sybron Biochemicals in July 2001, George A. Jeffreys in June 2002, Interbio in July 2002 and Semco Bioscience in January 2003. ■

Valuable waste

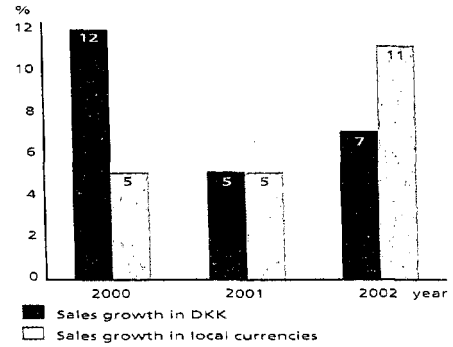
Waste is one of the world's biggest environmental problems. At Novozymes we are constantly striving to reduce the amount of waste. For example, for many years excess biomass from production has been used as an effective fertiliser on farms near our sites under the name of NovoGro®. A new idea is being explored at Franklinton in the USA. Farmland around the site is disappearing due to construction activity so that Novozymes has to carry its biomass further. So we are now working on an idea for turning liquid biomass into a solid compost that can be used as a soil improver and in gardens. The provisional results are promising. By mixing the biomass with wood chips, Novozymes is able to produce compost of very high quality. Since the wood chips can be supplied from a nearby furniture factory, the project has the potential to benefit both parties.

Novozymes is also involved in international development work and submitted a project proposal to the EU entitled "Waste to Value" in 2002. In many developing countries large amounts of biomass, from e.g. pineapple farms, are currently left to rot but could be turned into valuable products such as animal feed, materials for microelectronics or biofuel for cars. ■



The vast quantities of vegetable waste generated by pineapple plantations, for example, could be turned into animal feed or biofuel.

Sales growth 2000-2002



Sales growth in local currencies was the highest in Novozymes' history.

Fastest sales growth since listing

Exchange rates have had a major impact on sales growth in recent years, but in local currencies we achieved 11% growth in 2002.

In 2001 Novozymes decided to launch a new strategy and in 2002 this strategy began to take real shape. Initiatives in industrial microorganisms, biopolymers and pharmaceutical proteins have taken us well on the way to achieving our goal of double-digit sales growth. ■

Bakeries can make major savings in production and warehousing by using the baking enzyme Lipopan® F.

1 kg baking enzyme replaces 1,000 kg emulsifier

Novozymes' latest enzyme for the baking industry, Lipopan® F, has got off to a great start – and its growth seems to continue.

Better-tasting bread, lower production costs and less need for storage space are some of the benefits of baking enzyme Lipopan F. The enzyme is Novozymes' new alternative to the many kilos of emulsifiers that bakeries currently use to ensure that their dough is always of the necessary quality and that their bread has the right taste, volume and crumb structure. One kilo of Lipopan F can replace between 100 and 1,000 kilos of emulsifiers.

Europe, the Middle East, North Africa, Australia and New Zealand have been the prime movers behind the new enzyme's success in a global market where the baking industry spends around DKK 1.8 billion a year on emulsifiers. Lipopan F is expected to replace 50-100% of these emulsifiers for around 60% of the price. ■

Considerable potential

Novozymes is now working on a new generation of enzymes for the baking industry. The goal is to develop the ultimate baking enzyme that can replace emulsifiers completely. If this work is a success, the new enzyme will have considerable market potential. □

Leather takes off

The leather business was in dire straits at the start of the new millennium. Mad cow disease and foot-and-mouth disease caused sales of beef to plummet, the hide and leather industry came to a standstill and demand for Novozymes' enzymes for cleaning, preparing and softening leather followed suit. While sales were slow, Novozymes took the opportunity to develop new products and shift its focus from Europe to tanneries in China. Novozymes is now reaping the rewards of this strategy: enzymes for the leather industry are among its fastest-growing products. This strong growth is because leather is once again a sought-after commodity, and has been boosted by Novozymes' sales drive in the Chinese tanning market. Novozymes' enzymes enable tanneries to substantially reduce the large amounts of chemicals that are otherwise used to treat leather. Nevertheless, enzymes for the leather industry still account for only a small proportion of Novozymes' overall turnover. ■

Ready for the future fashions

Novozymes is currently thriving on the renewed popularity of denim jeans but other engines will drive growth in sales of textile enzymes in future.

You are what you wear – and right now denim is where it's at if you want to be fashionable. In recent years Novozymes has seen explosive growth in sales of enzymes that can fade denim to the right shade of blue. This growth is due partly to a successful strategy of focusing on the new growth markets in Asia and Latin America and partly to denim being in vogue. But fashions are short-lived and now Novozymes is preparing to supply other enzyme products to textile mills. Novozymes is focusing on developing new solutions for the production of cotton and other textiles that can not only replace polluting chemicals but also give the textiles properties that cannot be achieved in any other way, such as uniform colouring and greater resistance to wear. Networks with partners with the complementary expertise in the industry will pave the way for future growth. Enzymes for the textile industry are Novozymes' third largest group of technical enzymes. ■

The popularity of denim has boosted Novozymes' sales of enzymes to the textile industry, and new initiatives will ensure growth in the future too.

Eight new products on the shelves in 2002

Novozymes introduced eight new enzyme products in 2002: five technical enzymes and three food enzymes.

- Finizym™ W: a technical enzyme (phospholipase) that helps filtration processes in the starch industry
- Pectinex™ XXL, SMASH XXL, AFP XXL: enzymes for the fruit industry. Increases the yield of juice and improves production economy.
- SG granulate: a new granulated formulation for baking enzymes
- Savinase® Ultra: a detergent enzyme (protein-splitting protease) that is more stable and removes protein-based stains from grass, blood, egg and sweat.
- Lecitase® Ultra: a food enzyme (fat-splitting lipase) that improves the properties of egg yolk, e.g. in mayonnaise
- Termamyl® Ultra 300 L: a detergent enzyme (starch-splitting amylase) that is more stable and removes stains from potatoes and pasta
- Novozym® 51032: an enzyme for the pulp & paper industry that dissolves impurities in the production of recycled paper
- Lipex™: a detergent enzyme (fat-splitting lipase) that removes stains in the first wash. □

Postgraduate students Jonas Jacobsen and Magnus Lydolph are trying to discover how fungal diversity has evolved over the ages. They are being supervised by head of research Lene Lange from Novozymes (left).

Researching the enzymes of prehistory

The permafrost of the Antarctic hides 30,000-year-old secrets about fungi and enzymes. Two students are now hoping to uncover these secrets in conjunction with Novozymes, thereby making time a new dimension in enzyme research.

Novozymes' range of enzymes for detergents, foods and animal feed is the result of extensive research. Researchers test soil and other organic matter from all over the world – from acidic and alkaline environments, hot and cold climates, northern and southern hemispheres – to find new enzymes that can either form the basis for new products or increase our knowledge of the world of enzymes. September brought the launch of a new research collaboration set to make time a new dimension in enzyme research. Two students from the University of Copenhagen, Jonas Jacobsen and Magnus Lydolph, have teamed up with Novozymes to examine permafrost soil from Siberia and the Antarctic. A mere two grams of soil are enough to form the basis for their work.

Permafrost soil from Siberia and the Antarctic may provide new knowledge about DNA and enzymes.

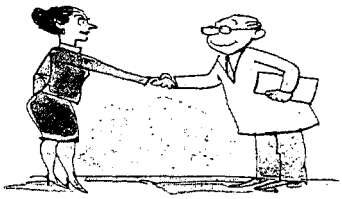
"One of the things that produce enzymes is fungi and so we will be looking primarily at which and how many different fungi the soil contains. By looking at samples from different layers in the soil we hope to be able to see how fungal diversity has evolved over time. The next phase of our work will be to identify enzyme-coding genes in these 30,000-year-old soil samples, which may prove to be very difficult as the DNA is quite badly damaged and there are relatively few copies of these enzyme genes. Nevertheless we hope to be able to compare the enzyme DNA residues we find with those we know from today," explain the students, who are under the guidance of head of research Lene Lange at Novozymes.

The project is due to be completed in August and has already demonstrated that even the very methods used to investigate the soil need development. Fungal DNA residues are found in the air around us and can contaminate samples, which means starting again from scratch. The methods developed by Jacobsen and Lydolph will be possible to use in future for research into material from biological niches with little or badly damaged DNA, such as material from Mars or mummies.

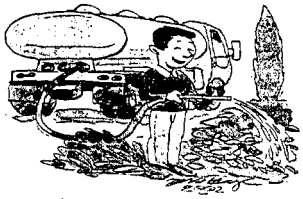
The project is being run in conjunction with Anders J. Hansen and Eske Willerslev, both doctoral students at the Zoological Institute at the University of Copenhagen, who have made the soil samples available. ■

Translating words into actions

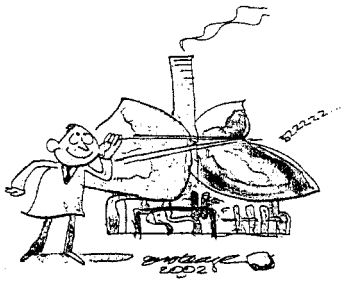
People all over Novozymes' sites are working to improve our performance in areas that play a role in sustainable development. Each project is another step towards sustainability.



Equal opportunities in Brazil
Clarice Pereira was the first woman to be employed in production at Novozymes' plant in Brazil. She was taken on after Novozymes Brazil embarked on a project to recruit more women. The project is still ongoing.



Saving water in China
At the site in Tianjin, employees have installed a system that can recycle treated wastewater for watering around the site and providing the local community with water for green spaces.



Soundproofing in Denmark
In 2002 there was a special focus on reducing noise levels in production. Several sources of noise – including ventilators, chimneys and cooling systems – were soundproofed.

Flexible hours in Switzerland
Employees in Switzerland have good opportunities to work part-time. Almost 30% of the workforce is now making use of these opportunities. ■

Fastest sales growth since listing

Key figures	2002		2001		%
	DKK m	Euro m	DKK m	Euro m	change
Net turnover	5,642	759	5,271	709	7
Operating profit	947	127	904	122	5
Net financials	-47	-6	-33	-4	-
Profit before tax	900	121	871	117	3
Net profit	644	87	602	81	7
Operating profit margin	16.8%		17.2%		

1 euro = DKK 7.43

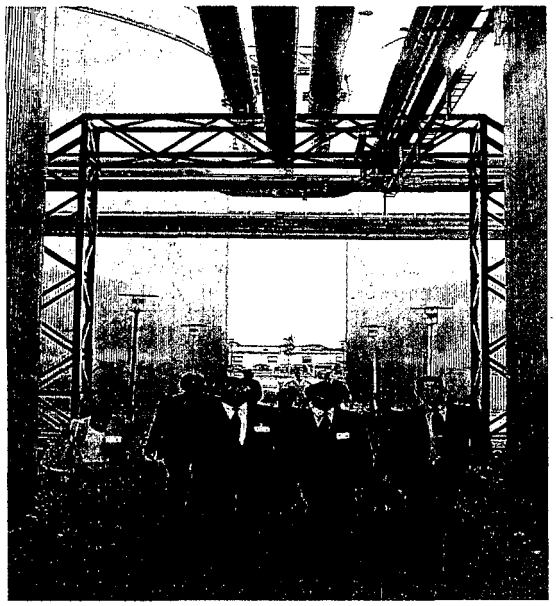
2002 was the best year yet for Novozymes. Our financial results were fully in line with the upward-adjusted outlook from November 2002 and sales continued to grow in the fourth quarter. Net turnover rose by 7% to DKK 5,642 million. Sales growth in local currencies was 11%. Operating profit climbed by 5% to DKK 947 million. Net financial expenses came to DKK 47 million, against DKK 33 million in 2001. Net profit increased by 7% to DKK 644 million and earnings per share by 9% to DKK 8.80. Free cash flow came to DKK 575 million (including acquisitions of DKK 272 million), against DKK 487 million in 2001. The return on invested capital after tax rose from 12.0% in 2001 to 13.1%. The proposed dividend for 2002 of DKK 2.25 per share is up 12.5% on the dividend for 2001.

Expectations for 2003

For 2003 the company anticipates growth in sales of around 4% equivalent to 9% in local currencies. Operating profit is expected to grow 3-5%, which is reduced significantly by lower exchange rates. Net profit is expected to climb by 7-8%.

Furthermore Novozymes' forecast for the free cash flow before acquisitions is to rise to around DKK 750-850 million. Return on invested capital after tax is forecast to increase further from the level in 2002 which was 13.1%. ■

Novozymes highlights of 2002

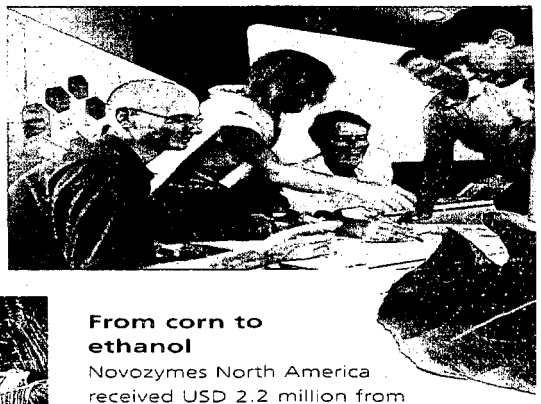


Chinese environment minister visits Novozymes site

In October the Chinese environment minister visited Novozymes Kalundborg to see the unique partnership that the site has with neighbouring industrial companies. The companies exchange by-products to ensure better utilisation of water and energy and reduce emissions of carbon dioxide and sulphur dioxide. ■

Stories underlie vision

Stories told by employees helped lay the foundations for Novozymes' new vision launched in 2002. ■



From corn to ethanol

Novozymes North America received USD 2.2 million from the US Department of Energy to develop methods for recycling waste from corn production into ethanol. ■

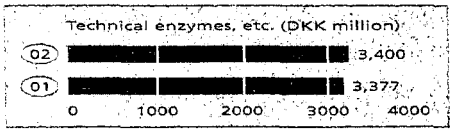
Healthiest and safest company

In November Novozymes Latin America was awarded the Brazilian Agency of Safety's annual prize for the best company for health and safety. ■

Only energy-certified site in Denmark

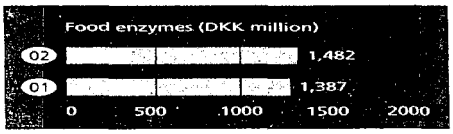
Novozymes is the first Danish company to be certified by the Danish Standards Association for systematic work to reduce energy consumption. Novozymes is now saving electricity and heat equivalent to the consumption of 1,200 detached houses. ■

Stable sales for detergents



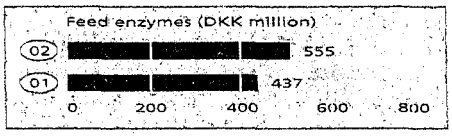
Sales of **technical enzymes, etc.** grew by 1% in 2002. Growth was impaired by less favourable exchange rates and by large customers' focus on cost cutting. Sales to smaller detergent producers grew satisfactorily. Sales of detergent enzymes have been fairly stable since the third quarter of 2001. Sales of **other technical enzymes** grew by 9%. Sales from Novozymes Biopharma (acquired in July) progressed as planned. ■

Baking enzyme sells like hot cakes



Sales of **food enzymes** grew by 7% in 2002, hampered by less favourable exchange rates. If currency effects are eliminated, growth was within the long-term target range of 10-15%. The baking industry was the main driver behind this sales growth, while sales to the beverage industry were only slightly above 2001 levels due to a smaller harvest and reduced production. Sales to the smaller industries like oils and fats grew satisfactorily. ■

Growth in feed enzymes faster than expected



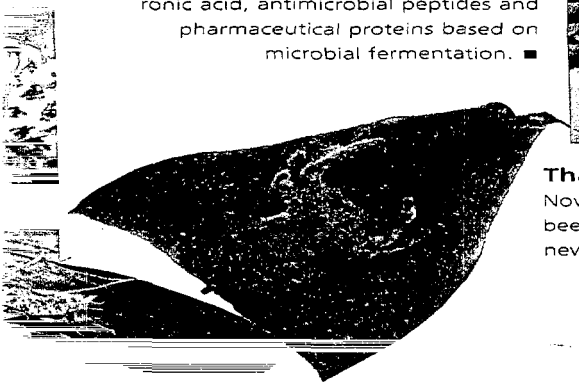
Sales of **feed enzymes** grew by 27% in 2002, which is slightly more than anticipated, due to continued penetration in both existing and new markets. This development was helped by the alliance with Roche Vitamins. ■

New business area grows by 193%

Sales of **microorganisms** from the new business area Novozymes Biologicals grew by 193% in 2002. Part of this growth came from the acquisition of the activities in George A. Jeffreys in June and Interbio in July, and the full-year effect of the acquisition of Sybron Biochemicals in mid-2001. Organic sales growth came primarily from the two largest markets, industrial and household cleaning and wastewater treatment. Novozymes Biologicals has now reached a size that merits individual reporting from now on. ■

Novozymes at biotech fair

Novozymes attended Scandinavian Biotech Arena in Malmö, Sweden, on October 9-11 to present itself as a potential biotech partner for other companies, e.g. for low-allergenic protein technology, hyaluronic acid, antimicrobial peptides and pharmaceutical proteins based on microbial fermentation. ■

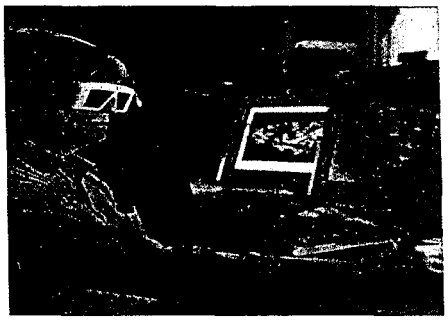


Thai insects with potential

Novozymes is looking to nature for ideas for new products. For example, insects have been found in Thailand that are attacked by fungi which may aid in the search for new, unknown enzymes with interesting characteristics. ■

With Novozymes on his shirt

Novozymes sponsored badminton player Anders Boesen during the Realkredit Open in Denmark 2002. ■

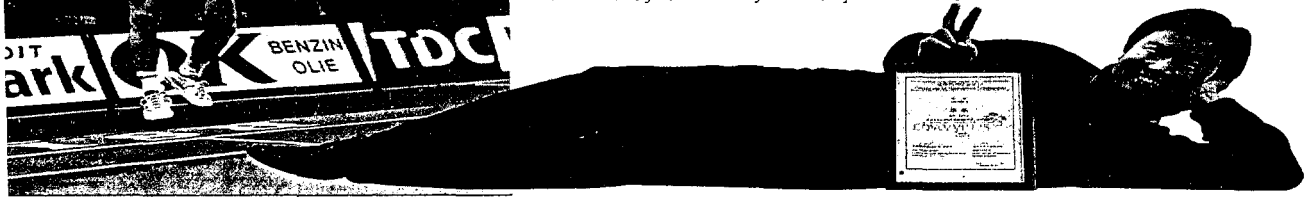


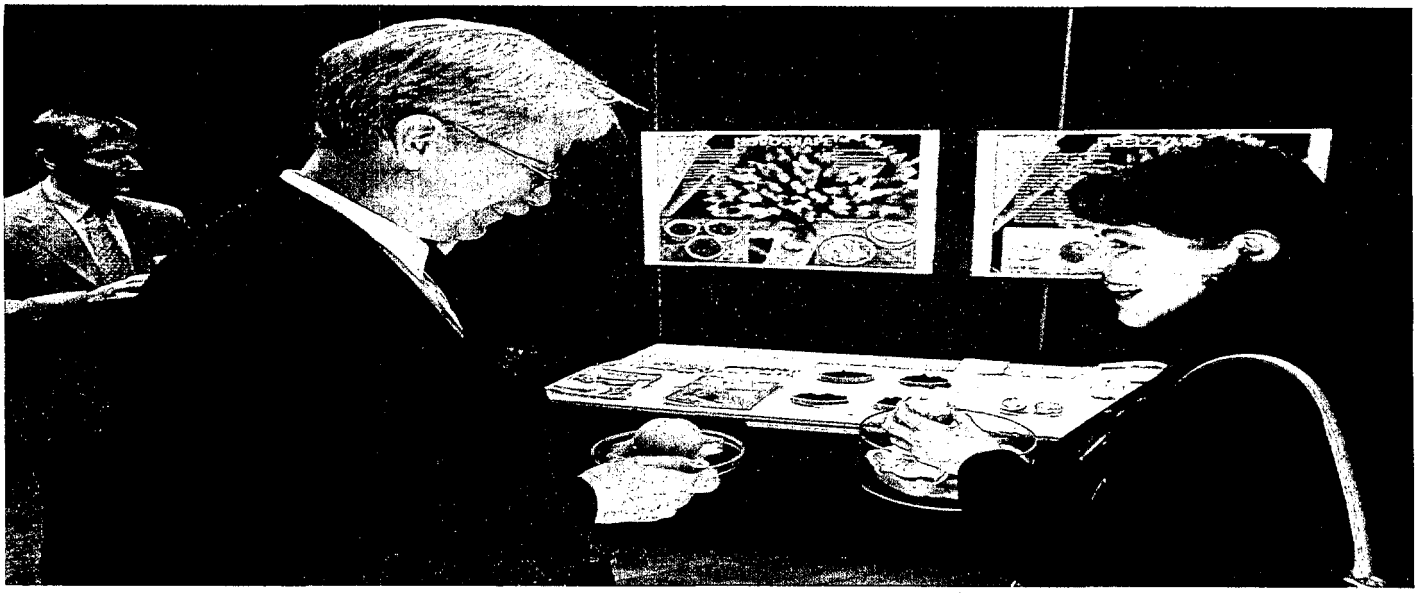
Award for top inventor

Computer technician Allan Svendsen has been named as the sole or joint inventor in no fewer than 28 patent applications in the last five years. Novozymes has more than 4,000 patents granted or pending. ■

Outstanding student

Novozymes' scholarship to an "outstanding student" was in 2002 given to 23-year-old Li Le. Li Le is bachelor and studying biochemistry at Nankay University in Tianjin in China. ■



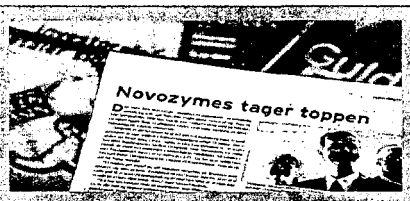


Poul B.R. Poulsen, head of research within food enzymes, shows an investor how Peelzym® can be used to remove the peel from citrus fruits and how NovoShape™ can help the fruit pieces to remain firm in products like yoghurt.

Analysts visit Novozymes

On November 29, 2002 Novozymes held its annual Capital Markets Day for institutional investors and financial analysts. More than 30 people attended, including several shareholders and analysts from outside Denmark.

The theme for the day was "Marketing & sales of industrial enzymes" and the papers included a general presentation by Executive Vice President, Sales & Marketing, Peder Holk Nielsen. Thomas Videbæk, who heads up Novozymes' unit in Switzerland, then gave a detailed presentation of sales and marketing work focusing on the baking industry. Finally, marketing director Mette Vestergaard talked about the company's latest activities in e-commerce and CRM (Customer Relations Management). The day included a demonstration of how enzymes can be used to peel oranges and keep fruit pieces firm in jams and yoghurts, and the guests also visited one of Novozymes' own test bakeries. The presentations can be found in the Investor Zone on Novozymes' website. ■



IR ranked number one

Michael Steen-Knudsen, Thomas Kudsk-Larsen and Ella Begtrup in Novozymes' IR department came first in *Berlingske Tidendes Nyhedsmagasin*'s survey of Danish companies' investor relations work in 2002. A total of 49 companies were covered by the survey, which covered the following areas: professionalism, service level, analyst meeting quality and IR manager expertise. The survey took the form of a questionnaire for financial analysts at large broker firms and portfolio managers at the largest institutional investors in Denmark. ■

New Internet service for private shareholders

Novozymes joins shareholder portal: *www.investor-relations.dk*

In January Euroinvestor took off with new companies on its portal for private shareholders at *www.investor-relations.dk*. One of these new companies is Novozymes. The portal serves as a meeting place for private shareholders and provides price information, price graphs, key figures, stock exchange announcements, financial calendars and so on for each of the member companies, which also include Chr. Hansen, Danske Trælast, Lundbeck and TDC.

Novozymes' own Investor Zone at *www.novozymes.com* has also been expanded to include a Danish-language section – DK Privat Investor – to serve its almost 35,000 private shareholders in Denmark. The new section includes share data, a shareholder magazine, stock exchange announcements, financial information, a financial calendar, information on annual meetings of shareholders, contact details for IR and press cuttings about Novozymes. ■

March 19, 2003: Annual meeting of shareholders
May 7, 2003: First quarter 2003 financial statement
August 13, 2003: First half 2003 financial statement
November 5, 2003: First nine months 2003 financial statement. ■

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novozymes®
Unlocking the magic of nature

THE ZYMES

NOVOZYMES' SHAREHOLDER MAGAZINE · NO. 2 · SEPTEMBER · 2005

Lower washing temperatures with Polarzyme®

Novozymes' new detergent enzyme Polarzyme is good news for consumers, detergent manufacturers and the environment alike.

Polarzyme, with its previously unheard-of ability to tackle difficult stains like grass at temperatures as low as 20°C, is opening up new market opportunities for Novozymes.

Launched in March 2005, the new enzyme attracted widespread media coverage – and with good reason: running washing machines at 30°C instead of 40°C will both cut our electricity bills and significantly reduce global energy consumption. Washing at lower temperatures is also kinder to clothes.

New markets

Having such an effective enzyme for washing at lower temperatures is opening up new markets beyond Europe and the USA. In many other parts of the world people cannot adjust the water temperature by turning a button – washing clothes in cold water is the only option for billions the world over.

Thanks to Polarzyme, the women on the riverbank will no longer need to rub and scrub as hard to get their laundry clean, and the water in the river will be spared from the chemicals which the enzyme replaces. In large parts of Asia even washing machines use only cold water, so Polarzyme's performance at low temperatures will be a strong selling point.

Polarzyme is an enzyme which attacks protein-based stains like grass and meat sauce, and follows last year's launch of Stainzyme®, which removes starch-based stains like spaghetti sauce, chocolate and jam. This means that we now have two detergent enzymes highly effective at low temperatures. ■

Kai Chuang Heng from Malaysia will be selling Polarzyme® to our customers in Southeast Asia. Here he shows how people in his sales area do their laundry in cold water from the river.

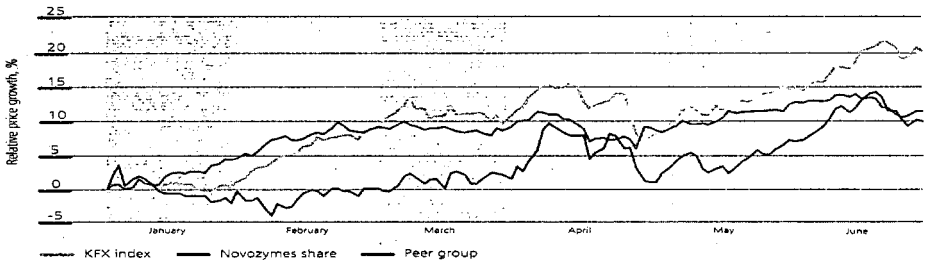
First-half share price performance

Novozymes' share price climbed around 10% during the first half of 2005, buoyed by a very bullish Danish stock market.

The KFX blue-chip index gained around 20% during the period. This was due partly to the takeover bids for Chr. Hansen and ISS, together with the knock-on effect these had on the stocks of other takeover candidates, and partly to the current very high levels of liquidity in the market.

The reasons why Novozymes' share price did not keep pace with the market as a whole at the beginning of the year included both this surge in the KFX index and Novozymes' expectations for growth in 2005 falling slightly short of the market's expectations and our long-term growth expectations of 8-9%. Towards the end of the second quarter Novozymes' share price rallied, thanks in part to improvements in the USD exchange rate. Share turnover was satisfactory, our stock being among the 11-12 most traded in Denmark. ■

Novozymes' B share in the first half of 2005



novozymes®

Unlocking the magic of nature

Sharper focus on core business

Novozymes once again generated healthy bottom-line growth in the first half of 2005, even though it was a difficult period for two of our most important industries: detergents and animal feed.

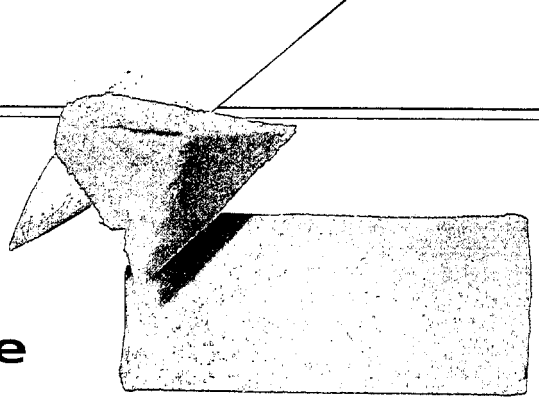
Looking slightly further ahead it is exciting to see interest in biological solutions growing globally. In the USA people are talking about a new bio-based economy, while in Europe we are seeing growing political support for white biotechnology as the way forward towards a more sustainable world. White biotechnology has big potential for business development, whether turning biomass into fuels, producing bioplastics or substituting chemicals in production processes.

Investing in innovation

Industrial enzymes are a key element of white biotechnology, and Novozymes' leading position in industrial enzymes makes it well placed to be at the forefront of these exciting developments. We will be pursuing even more opportunities in the future, and we would love the business to grow even faster in our existing industries. In 2004 Novozymes achieved, for the first time, all of the long-term financial targets set at the time of the introduction on the Copenhagen Stock Exchange in 2000. As a result, the board decided to review our objectives. It has been decided to retain these long-term financial targets and further to use our financial strength to invest more in research and business development in enzymes and microorganisms. Thus the company expects to invest up to DKK 20 million extra in research and business development in the company's core business in the second half of 2005.

While investing further in our core business, we are continuing to develop business areas beyond enzymes, which will continue to attract up to 10% of our research resources. These new business areas have made good progress in the last year, and several of our projects are now sufficiently mature for us to be actively seeking partners to take them forwards.

Steen Riisgaard, President & CEO



With Lipozyme® fats can be given the right melting point without creating trans fats, which are found mainly in margarine, biscuits, cakes and French fries.

Doing battle with harmful trans fats

The USA is getting tougher on trans fats. From next January all foods must be labelled with their trans fat content – which is good news for sales of Novozymes' Lipozyme®.

If you want to avoid cardiovascular disease, cut down on your intake of trans fats. Nutrition experts have been saying it for years, and now the authorities in the USA are following up on this recommendation with new legislation. From January 1 all foods must have their content of trans fats stated on their label so that US shoppers can more easily reject biscuits and cakes containing these unhealthy fats.

Producing fats free from harmful trans fats is not actually a problem. Using Novozymes' prize-winning enzyme Lipozyme TL IM to give fats the desired melting point, instead of the conventional process of hydrogenation, completely avoids the formation of trans fats during the process.

"We expect the new legislation in the USA to result in increased interest in Lipozyme, which is the only enzyme on the market for vegetable fats and oils for food use," says Hans Christian Holm, marketing director for oils & fats. "The cost of treating fats with enzymes is no higher than with other methods, but the production machinery needs to be modified slightly. We hope that the new rules will persuade many producers to take the plunge and start using enzymes."

Environmental benefits recognised

There is a third method for hardening fats, namely chemicals. This method does not result in trans fats but has other drawbacks: unlike these chemicals, enzymes are environmentally friendly and also preserve natural flavours and other healthy substances.

In June Novozymes and Archer Daniels Midland Company (ADM) received a Presidential Green Chemistry Challenge Award from the US Environmental Protection Agency for the development of Lipozyme. ADM is the world's largest producer of fats, and with the help of Lipozyme the company has launched a range of oils and fats wholly or partially free from trans fats. It is the second time in four years that Novozymes has won one of these prestigious awards. ■

Trans fats

Trans fats are found naturally in small quantities in foods like milk and meat, but the bulk of the trans fats we consume come from industrially produced fats – such as the margarine in cakes and the deep-frying oils used for fast food.

Denmark is the only country in the world to have introduced limits on the content of industrially produced trans fats in foods – a maximum of two grams per 100 grams of fat. Similar legislation is on its way in Canada.

The US health authorities expect the new rules on labelling trans fats to cut the number of deaths from cardiovascular disease each year by 250-500 in the next three years.

Cleaner wastewater with fungi

Wastewater is one of the big environmental problems faced by the pulp & paper industry, among others. Novozymes is working on a solution using fungi.

Novozymes' solutions for treating wastewater have previously been based on bacteria, but now researchers have begun to look more closely at fungi, which have proved to be even more effective. The pulp & paper industry is one of many industries to have problems with wastewater. In this case it is because wood contains cellulose, which bacteria struggle to break down.

Novozymes' researchers have, as usual, turned to nature for help in finding a solution. The forest floor is home to countless fungi which secrete enzymes programmed to break down the cellulose in wood. It is these fungi that our researchers are now working with, and the first tests have had promising results. If this work is a success, the benefits are clear: the pulp & paper industry's wastewater will be both cleaner and cheaper to deal with. ■

Optimisation goes from strength to strength

At most companies optimisation is about one thing and one thing only: the industrial production process. But at *Novozymes it also includes R&D. Our unique technology makes it possible to keep on getting better and better.*

"Three more years" is what Novozymes promised investors back in 2003. Three years where improvements in production efficiency could keep the need to invest in new production facilities at bay even if demand for enzymes were to grow. And that is exactly what we have given them – and then some.

Minor miracles every day

Throughout the production chain, from work on the production organism to the finished product leaving the factory, dedicated employees have been performing minor miracles, using their understanding of microorganisms to get more – and more effective – enzymes out of our facilities. But these impressive improvements do, of course, beg one very obvious question. Can Novozymes just keep on getting better and better? The answer is that the improvements look set to continue for many years to come – the limits of what is possible are being pushed back all the time.

Optimising three parameters

It is possible because at Novozymes optimisation spans both research and production. In broad terms we can optimise three different parameters: the production organism, the production process and the enzyme itself.

Just as in nature, it is microorganisms which produce our enzymes. Advanced technology enables Novozymes' researchers to keep on improving our microorganisms so that they can produce more enzymes.

In the actual production process, where the microorganisms produce the enzymes in large steel tanks, the key factors include the equipment used, the regulation of temperature and pH, and the choice of raw materials. These raw materials are carbohydrates and proteins which the microorganisms need in order to multiply and produce enzymes.

Our researchers can also optimise the enzymes themselves to make them even more effective. This means that we can produce them in smaller amounts, which frees up tanks for use in the production of other enzymes. In principle this cycle can be repeated indefinitely.

Boosting the bottom line

Optimisation is very important for our business. It has enabled Novozymes to grow its sales by an average of 9% a year in local currency terms since its flotation in 2000 without having to make any significant investments in large factory facilities. ■

At Novozymes optimisation is about research and development as well as production.

World optimisation champions! From left: TieZhong Cao, Jan Blaagaard, Rong Yu and QingYi Cui from Tianjin in China.

Everyday competition

Each year Novozymes' sites in China, Brazil and Denmark compete for a trophy for producing our big-sellers the most efficiently.

When it comes to our biggest products, even minor improvements in yields can be very important for Novozymes. Keen competition between our sites is ensured by having them learn from each other and copy each other's good ideas, so the result is always a close call.

"It's always good to have a little friendly competition," say the winners. "Efficiency is compared monthly, and now we're keeping our fingers crossed that we retain the trophy."

Enzymes' green credentials documented

Studies quantify the environmental benefits of using enzymes and pave the way for broad acceptance of enzymes as a key contributor to a sustainable future.

Enzymes have the potential to be an important driver for sustainable development by reducing the consumption of water, energy and other resources in industrial production. This has now been proven with the help of lifecycle assessments (LCAs). Novozymes has been working with LCAs for over a year now and thrown up all kinds of interesting results.

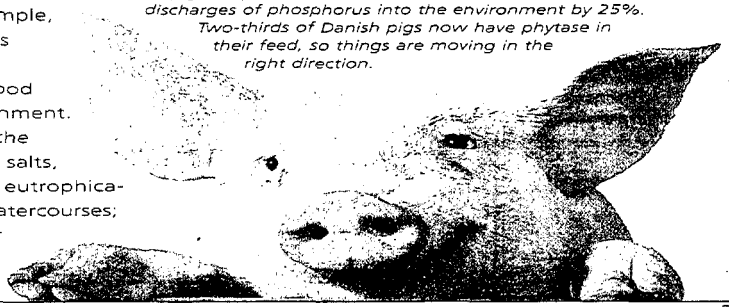
The studies look at the environmental impact of enzymatic processes relative to traditional processes. They assess the overall impact of a product "from cradle to grave", so taking account of all environmental impacts from the production of the raw materials through to the enzyme returning to nature. So far LCAs have been performed for seven products, and they reveal that there are clear environmental benefits in using enzymes instead of traditional processes. Most of the studies have been carried out in conjunction with the Technical University of Denmark.

Tackling environmental problems in farming

One of the enzymes to have undergone an LCA is phytase, an enzyme which increases the nutritional value of animal feed and improves the animals' uptake of phosphorus. This means, for example, that pigs excrete less phosphorus in their manure, which is good news for the environment. The LCA looked at the leaching of nutrient salts, which results in the eutrophication of lakes and watercourses; emissions of sulphur compounds, which cause acid rain; emissions of greenhouse gases, which cause global warming; and smog formation.

In all four cases it is better to add phytase to feed than phosphorus. In fact agricultural discharges of phosphorus into the environment would be cut by 25% if all pigs were fed phytase. For pig production in Denmark alone this corresponds to a reduction equivalent to the phosphate pollution from some 200,000 people. ■

If all pigs had phytase in their feed, it would cut agricultural discharges of phosphorus into the environment by 25%. Two-thirds of Danish pigs now have phytase in their feed, so things are moving in the right direction.



Novozymes' employees are working on developing new enzymes which will bring growth in detergent enzymes.

New challenges for detergent enzymes

Detergent manufacturers are presenting Novozymes with new challenges. Growth needs to come from new products, new markets and a higher proportion of enzymes in detergents.

Growth in sales of enzymes for biological detergents presents a challenge because detergent manufacturers are coming under pressure on several fronts.

On the one hand, ever higher oil prices have caused the price of surfactants to rocket. Since surfactants are among the main ingredients of a detergent, this has pushed up manufacturers' costs.

On the other hand, they are encountering price pressure from the burgeoning retail chains, fierce competition from other detergent manufacturers, and consumers who are more interested in price than brand loyalty.

"And when the soapers come under pressure, they generally take it out on us," explains Anders Lund, marketing director for detergents.

Strategy and market expectations unchanged

Novozymes supplies enzymes to virtually every detergent manufacturer. After a couple of years of flat growth, we expect to see slight positive growth in 2005 despite difficult market conditions.

Since 2003 the overall market for detergent enzymes has stagnated. Novozymes has nevertheless gained ground, increasing its market share during the period in the face of stiff competition. Given its strong product portfolio and pipeline, Novozymes' long-term expectations for this market are unchanged. It also has a strategy of supplying an increasing proportion of the ingredients in detergents.

New products fuel growth

In recent years our product range has been strengthened with several new products, the most important being Polarzyme® and Stainzyme®. But there is still room for growth.

Enzymes replace other ingredients

At present enzymes account for around 5% of detergent manufacturers' raw material expenses. Novozymes is looking to increase this figure by developing enzymes that can replace some of the surfactants which currently make up 30-40% of these costs.

"The pressure which is having a negative effect on us in the short term may therefore lead to further innovations and opportunities to conquer new markets in the longer term," says Anders Lund. ■

Fill up with farm waste

Novozymes has met the target of the biomass project after four years of research. The cost of enzymes is now 30 times lower than when the project began, bringing large-scale production of fuel ethanol from agricultural waste an important step closer.

In conjunction with the National Renewable Energy Laboratory (NREL) and with financial backing from the US Department of Energy, Novozymes has spent the last four years bringing down the cost of enzymes for turning biomass into ethanol. In April this year Novozymes completed its part of the project, and the final outcome was a 30-fold reduction in enzyme costs. At the beginning of 2001 the enzymes needed to produce a gallon of fuel cost more than five dollars; now the cost has been cut to just 10-18 cents per gallon. So enzyme costs are no longer the greatest barrier.

The cost of enzymes is now so low that even plant waste can be turned into bioethanol.

Nevertheless there is still some way to go before we can fill up our cars with fuel ethanol from agricultural waste. For example, the enzyme technology needs to be fine-tuned, a system for collecting the biomass needs to be set up, and the current fermentation organisms need to be optimised. There are also still technical hurdles in the pre-treatment of the biomass, and a financial incentive is needed for ethanol producers to invest in facilities which use biomass rather than corn (maize) starch as their raw material.

Abengoa Bioenergy, one of the biggest producers of ethanol in Europe and the USA, plans to begin testing Novozymes' enzyme solutions in a pilot plant in 2006 in order to confirm the technology's performance.

Major potential

Fuels produced from biomass have major potential and may eventually replace the oil-based fuels on which the world now relies. While the fuel ethanol produced today is typically derived from corn, sugar cane and other starch-rich products, biomass consists, broadly speaking, of the rest of the plant, which cannot normally be sold. Novozymes' tests used leaves and stems from corn plants, but there are also plenty of other options – biomass is the most prevalent organic material on the planet.

The enzymes work by breaking down this biomass into sugars, which can be fermented into ethanol (i.e. alcohol). This CO_2-neutral fuel can then be poured into fuel tanks either neat or mixed with gasoline.

Novozymes already supplies enzymes for corn-based ethanol production. The world's biggest producer of fuel ethanol from corn is currently the USA, where production has grown rapidly in recent years to 3.5 billion gallons in 2004. And by 2012 this figure is to increase to 7.5 billion gallons, driven by environmental legislation and political incentives for more sustainable energy sources. ■

White biotech on the agenda

With Steen Riisgaard as an avid proponent, politicians are beginning to open their eyes to biological solutions. The codeword is white biotechnology.

In recent years Novozymes' CEO Steen Riisgaard has frequently taken to the podium to drum up political support for biological solutions at both Danish and international level. And many politicians have taken his message on board. The EU has put work on creating a cleaner environment high up on the political agenda. At their meeting in Brussels in March Europe's environment ministers agreed that it is important to promote work on environmental innovations and technologies intensively, and white biotechnology has been hailed as an important technology for achieving sustainable development.

The European Association for Bioindustries has created a classification system for the industry which consists of three colour-coded categories: red, green and white. These three colours represent a major step forward in highlighting the sheer breadth of biotechnology.

"It's simply too difficult for consumers to differentiate between the various uses of biotechnology, because everything gets tarred with the same brush," he says. "We've been talking about biotechnology in general terms for 20 years, but now the time has come to go one step further and make the debate more informed – which is where these three colours come in."

Red, green and white

Red biotechnology is that used in the pharmaceutical field. Green biotechnology is about genetically modified crops like sugar beet, corn (maize) and oilseed rape. White biotechnology, also known as industrial biotechnology, is in many ways virtually synonymous with enzymes given that they are almost always involved. White biotechnology replaces traditional chemical processes with less polluting alternatives, uses renewable raw materials (such as plants, which, unlike oil, can always be replaced with new plants), and involves the contained use of gene technology.

Debate could bring more business

Anna Lise Grandjean Mortensen, vice president of Stakeholder Communications & Sustainability Development, agrees with Steen Riisgaard that there is a real need for political support if biotechnology is to get out of the black hole it still seems to be in: "All too often the industry is associated with problems. We need to help change this picture. We need to tell the world about the many benefits of white biotechnology so as to get people to appreciate the different types of biotechnology and help make the debate objective and informed. If we get this right, it could also bring us more business." ■

Vice president of Stakeholder Communications & Sustainability Development Anna Lise Grandjean Mortensen says that white biotechnology is the key to more sustainable development.

White biotechnology makes it possible to reduce industrial pollution and so help the environment.

White biotech benefits environment and business alike

White biotechnology can help to solve some important and growing problems, including pollution, climate change due to CO_2 emissions, and, not least, the consumption of oil and oil-based chemicals.

The targets of the Kyoto Protocol are ambitious. Denmark is to cut its CO_2 emissions by 21% by 2012, corresponding to 13 million tons a year. This seems to be asking a lot, but it can be done, so paving the way for a future of green industries and green products.

Let us take an example. We all wash our clothes in washing machines, which consume energy and pollute the environment. The enzymes in biological detergents not only replace environmentally hazardous chemicals but also enable us to wash at lower temperatures – in fact enzymes can get things clean at just 30°C. The result is lower energy consumption, as the water no longer needs to be heated to the usual 40°C, so substantially reducing CO_2 emissions.

If all consumers in the EU used detergents that work at 30°C, rather than 40°C, this would cut CO_2 emissions by 13 million tons a year – the same as the total reduction to which Denmark is committed under the Kyoto protocol – and cut their electricity bills. □

A taste for red wine

Rose-Marie Canal works among the grapevines of the Bordeaux region where Novozymes has a small winery used to test enzymes for wine production.

Novozymes' winery tests enzymes, yeasts and bacteria in the production of wine: "We have entered into the phase in which we need to demonstrate the performance of our enzymes under winery conditions," explains Rose-Marie Canal.

"You can't do that in a laboratory, so we've opened the Wine Experimental Cellar in collaboration with our partner Lamothe-Abiet where we can integrate the use of enzymes with knowledge of the wine production process."

The main use of enzymes in the wine industry is in extracting as much juice as possible from the grapes. Our experiments in the Experimental Cellar show that they can also get more colour and more tannins out of the grapes. The aim of all this is to produce a wine of high quality, something which is in ever greater demand. The first bottles were laid down in the cellar in 2004 and have been tasted by experts. Their conclusion is clear: better aroma, better flavour and better structure. Now we must wait and see whether the wine also keeps for longer.

The grapes are sourced from a local vineyard. So far Novozymes has experimented with Merlot and Cabernet Sauvignon. ■

Key figures	1H 2005 DKK m	1H 2004 DKK m	% change
Net turnover	3,037	2,961	3
Operating profit	597	520	15
Net financials	-8	-50	–
Profit before tax	589	470	25
Net profit	440	350	26
Operating profit margin	19.7%	17.6%	–

Very satisfactory earnings in the first half

Continued productivity improvements have helped to consolidate earnings. The profit outlook for the year is being adjusted upwards, and the share buy-back programme for 2005 is being increased by DKK 200 million to DKK 850 million.

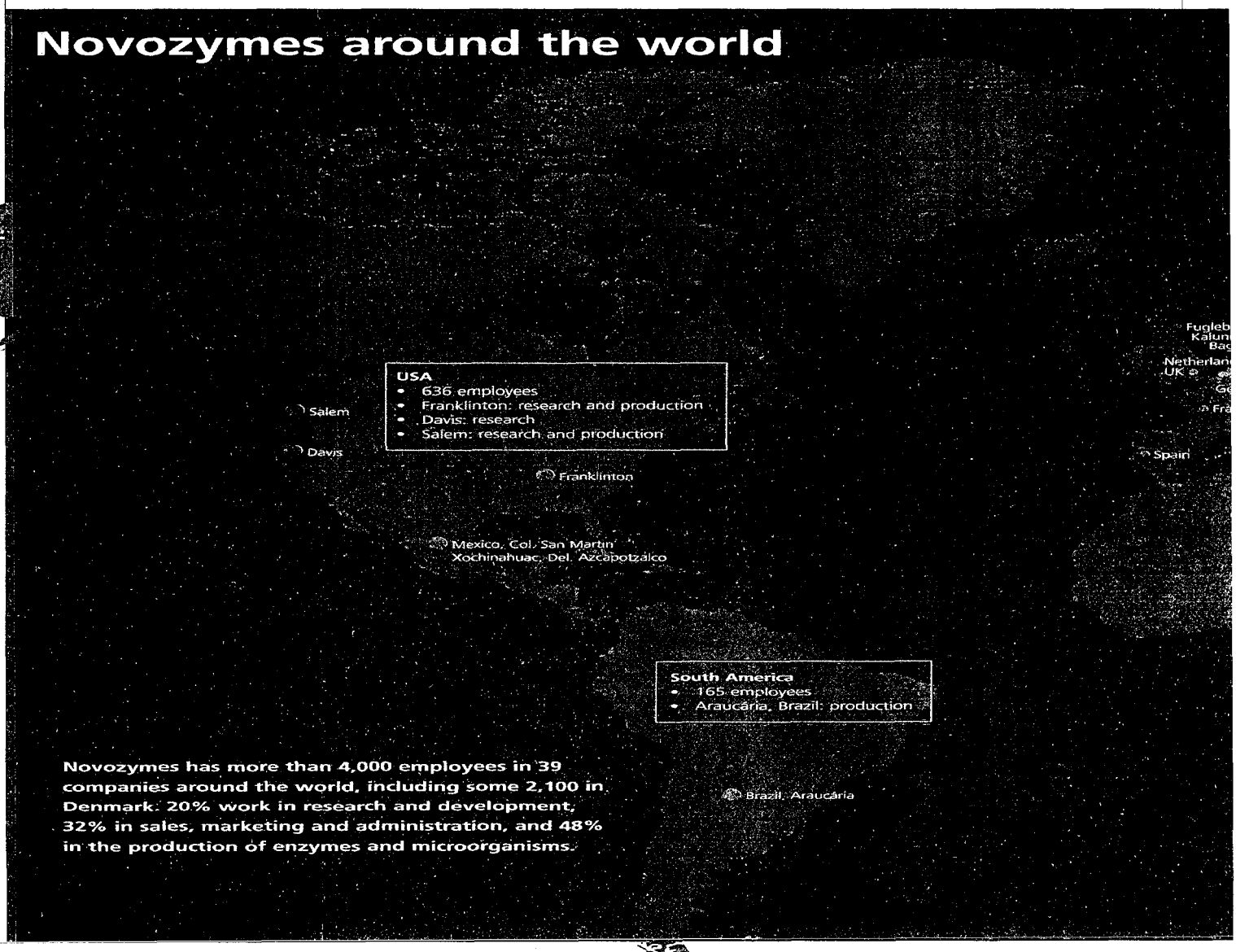
Net turnover in the first half of 2005 was DKK 3,037 million, equivalent to an increase of approx. 3% compared with the first half of 2004. Calculated in local currencies, growth was just under 5%. Sales of enzymes rose by 3%, while sales of microorganisms were 5% lower than in the same period of 2004. Operating profit rose by 15% to DKK 597 million from DKK 520 million in 2004, DKK 583 million of which relates to enzymes and DKK 14 million to microorganisms. The operating profit margin rose to 19.7%, compared with 17.6% in 2004. Profit before tax rose by 25% to DKK 589 million from DKK 470 million. Net financial costs were DKK 8 million, compared with DKK 50 million in 2004. Net profit rose by 26% to DKK 440 million from DKK 350 million. Earnings per share (diluted) were DKK 6.5, an increase of 30% compared with the first half of 2004. Free cash flow rose by 39% to DKK 480 million, compared with DKK 346 million in 2004, leaving aside the positive effect of a one-off item worth DKK 131 million in 2004.

In the environmental area, satisfactory results have been achieved for water and energy utilisation, with improvements of 9% and 4% respectively. Initiatives outside the enzymes and microorganisms areas continue to show good progress.

Outlook for 2005 adjusted upwards

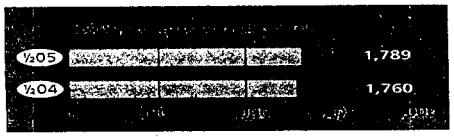
The outlook for growth in net profit is being adjusted upwards from around 5% to 9-10%. Assuming no change in exchange rates, the outlook for sales in DKK is being increased to around 5-6%, while the outlook for growth in local currencies is being changed from 6-7% to around 5%. The outlook for growth in operating profit is being adjusted upwards from just under 6% to just over 8%. Free cash flow is expected to increase from DKK 750-850 million to DKK 800-900 million. Share buy-backs in 2005 are to be increased by DKK 200 million to a total of DKK 850 million.

Novozymes around the world



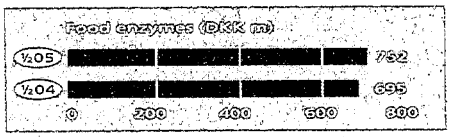
Novozymes has more than 4,000 employees in 39 companies around the world, including some 2,100 in Denmark. 20% work in research and development, 32% in sales, marketing and administration, and 48% in the production of enzymes and microorganisms.

Excellent growth rates in the fuel ethanol, textile and starch industries



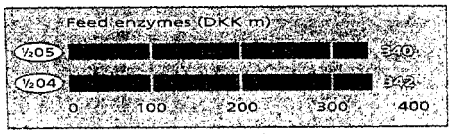
Overall, sales of **technical enzymes** rose by 2% in the first half of 2005, compared with the same period of last year. Sales of detergent enzymes were 4% lower in the first half of 2005 than in the same period of 2004, which is partly due to the negative effect of exchange rate movements. The primary reason, however, is that detergent manufacturers remain under pressure as a result of rising raw material prices. Growth in sales of **other technical enzymes** remains very satisfactory. Sales rose by 9% in DKK, and more in local currencies. Sales of enzymes for the production of fuel ethanol are showing very high rates of growth. Sales of enzymes to both the textile and starch industries are also showing high rates of growth.

Further growth in sales of enzymes for bread



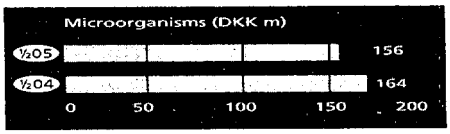
Sales of **food enzymes** rose by 8% in DKK and more than 10% in local currencies in the first half of 2005, compared with the same period of 2004. Sales to the baking industry are growing healthily, although some of this growth appears to relate to stockbuilding. Sales of other enzymes to the food industry are also showing healthy rates of growth, with the exception of sales to the brewing industry, which were slightly lower than in 2004.

Lower growth rates for feed enzymes

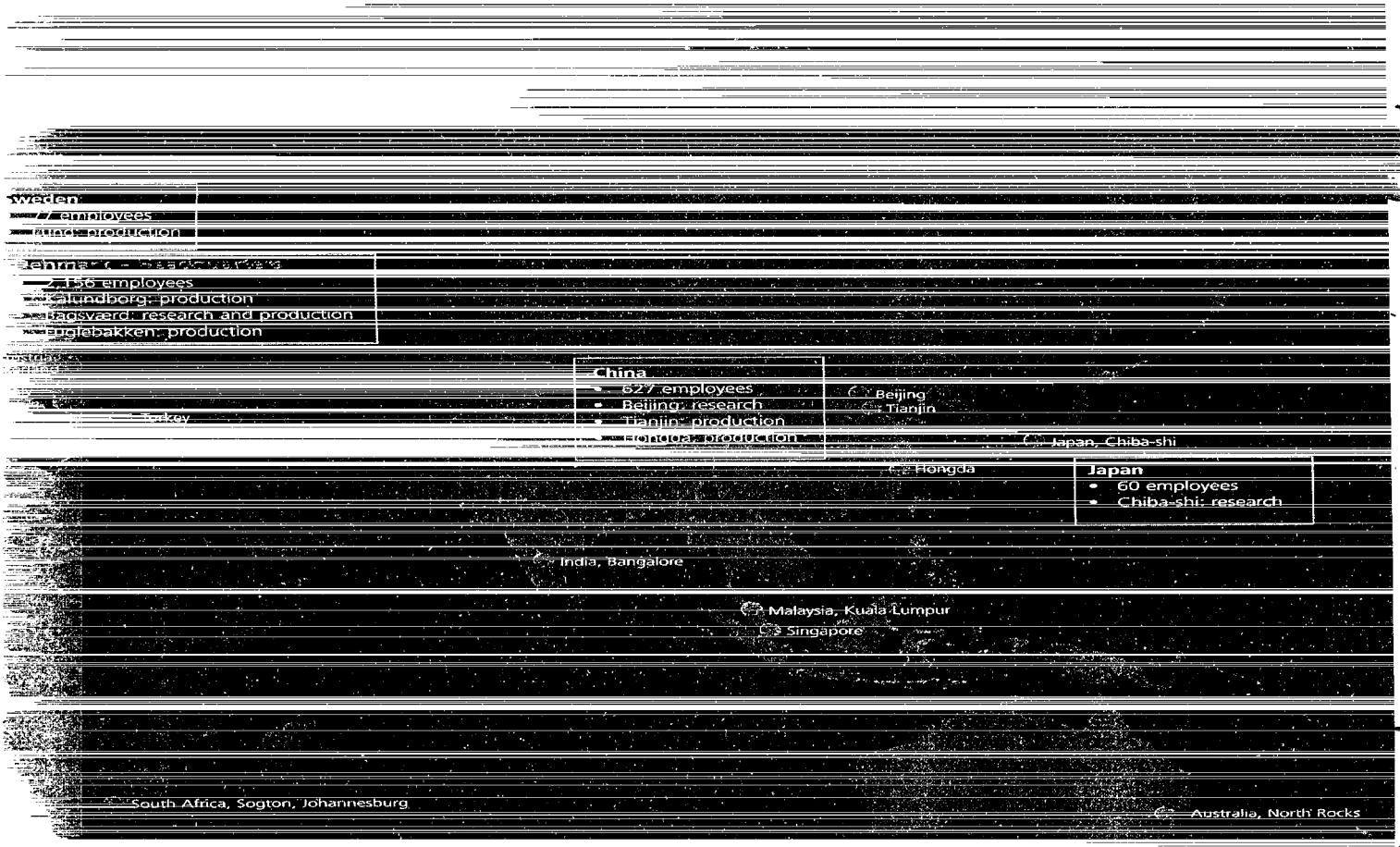


Sales of **feed enzymes** in the first half of 2005 were 1% lower than in the same period of 2004. Calculated in local currencies, sales rose by 2%. Growth in sales of enzymes within the phytase product group is moderate, as expected, while sales of enzymes for plant proteins were lower in the first half of 2005, particularly in Latin America.

Increased geographical distribution of sales of microorganisms



Sales of **microorganisms** in the first half of 2005 were 5% lower measured in DKK and 1% lower measured in local currencies than in the first half of 2004. The geographical distribution of sales is increasing, and sales outside the USA are showing healthy rates of growth. The lower level of sales in the first half of 2005 can mainly be attributed to North America and to the institutional and household cleaning segment. ■



Our business areas – in brief

Technical enzymes

Novozymes' enzymes for the technical industries include enzymes for detergents, conversion of starch into various sugars within the starch and fuel ethanol industries, and a long series of applications within the textile, leather, forest products and other industries.

Key figures

- Share of group turnover: 59%
- 5-year average growth rate (CAGR): 2%
- Market share: 45-50%
- Expected long-term annual sales growth: approx. 5% in local currencies.

Major competitor: Danisco/Genencor

Feed enzymes

Adding enzymes to animal feed increases the nutritional value of the feed and improves the animals' uptake of phosphorus. This means that pigs, for example, excrete less phosphorus via manure, which benefits the environment.

Key figures

- Share of group turnover: 11%
- 5-year average growth rate (CAGR): 25%
- Market share: 45-50%
- Expected long-term annual sales growth: 10-20% in local currencies.

Major competitors: BASF, Danisco

Food enzymes

Enzymes enhance the quality or the manufacturing process in the production of foods such as bread, wine, fruit juice, beer, noodles, alcohol and pasta.

Key figures

- Share of group turnover: 25%
- 5-year average growth rate (CAGR): 8%
- Market share: 30-35%
- Expected long-term annual sales growth: 10-15% in local currencies.

Major competitors:
DSM, Danisco, AB Enzymes

Microorganisms

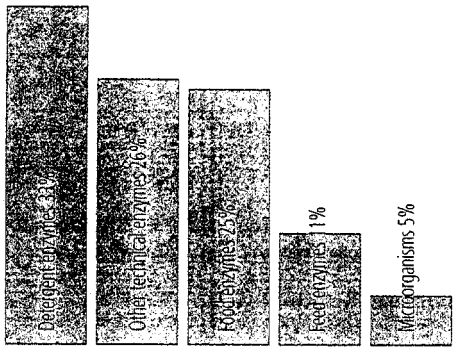
Novozymes' microorganisms are used in industrial wastewater treatment and to clean surfaces such as carpets, waste pipes and septic tanks. Novozymes' microorganisms also function as natural growth promoters for plants and lawns.

Key figures

- Share of group turnover: 5%
- Market share: approx. 50%
- Expected long-term annual sales growth: approx. 10% in local currencies.

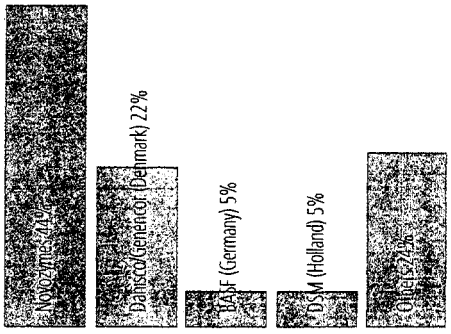
Major competitors:
a number of small companies

Percentage breakdown of sales



World leader in enzymes

Novozymes assesses that the value of the world market for industrial enzymes is approx. DKK 12.8 billion. The estimated market shares are:

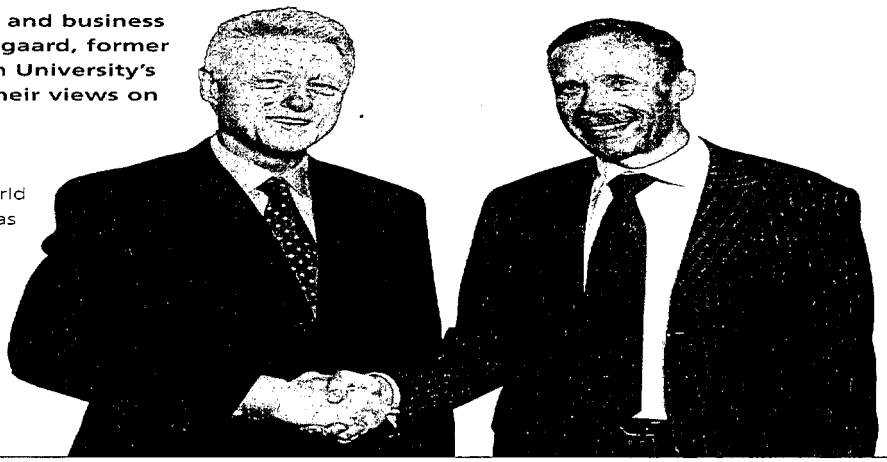


Financial calendar
October 27, 2005: Group financial statement for the first nine months of 2005
January 24, 2006: Group financial statement for 2005

Bill Clinton and Steen Riisgaard share podium

The audience was dotted with politicians and business leaders when Novozymes' CEO Steen Riisgaard, former US president Bill Clinton and Copenhagen University's vice chancellor Linda Nielsen presented their views on globalisation in Copenhagen on May 17.

Steen Riisgaard was invited to speak on how Danish companies stand to benefit from the world growing smaller and smaller. Using Novozymes as an example, he urged everyone to embrace the challenges and opportunities thrown up by globalisation. It is no use sitting back and waiting for the whole thing to blow over, he told the audience of around 1,000 people.



Bill Clinton and Steen Riisgaard both spoke at a conference looking at globalisation.

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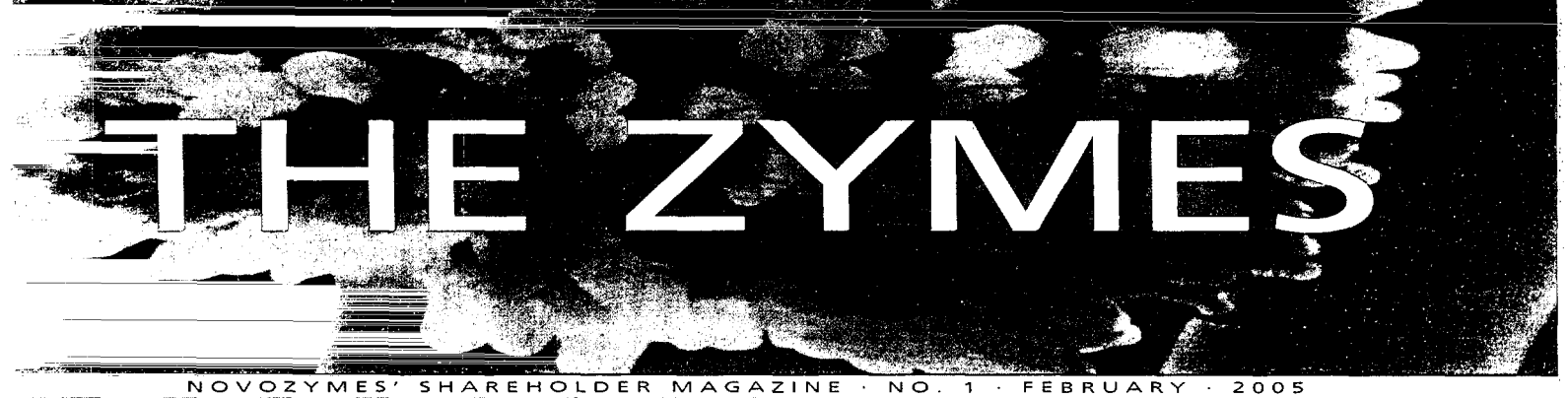
novozymes®
Unlocking the magic of nature



NOVOZYMES' SHAREHOLDER MAGAZINE · NO. 1 · FEBRUARY · 2005

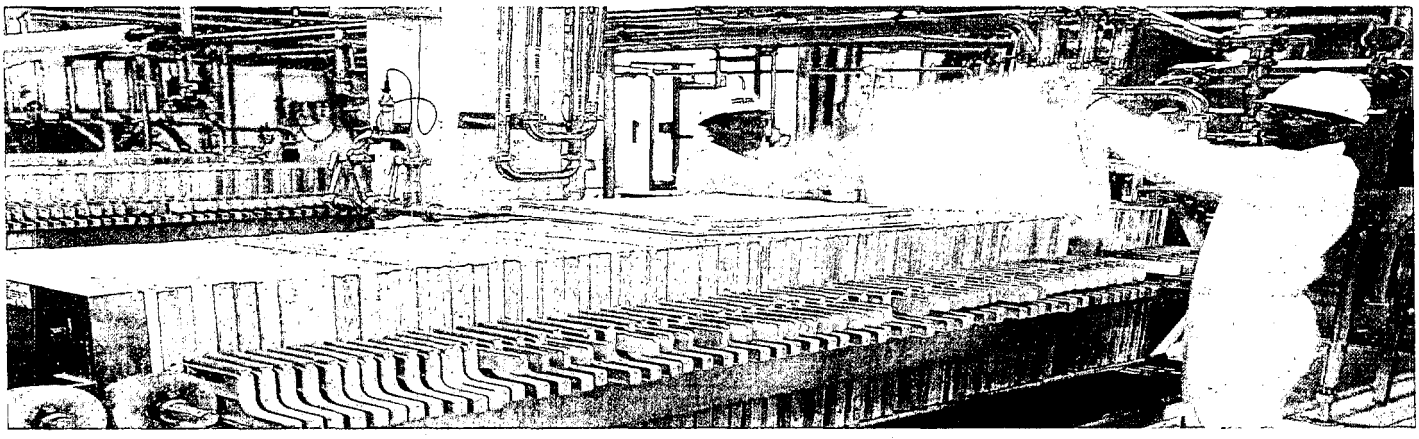
Production efficiency has environmental benefits

Production optimisation is one of the main reasons for Novozymes' improved earnings capacity in recent years, and it also means that we are using fewer natural resources.

A targeted drive to continually increase production efficiency has enabled us to make huge financial savings. We have also reduced our use of water, energy and raw materials such as sugar, potato starch and soya per unit produced.

The major productivity improvements Novozymes has achieved since the mid-1990s have been due to a combination of gene technology and traditional production optimisation. These improvements have enabled Novozymes to grow its sales by an average of 9% a year in local currencies since being listed on the stock exchange in 2000 without significantly expanding its production facilities, and this trend looks set to continue. The limits of what is possible – and so the potential for optimising production – are moving all the time.

Production optimisation also has benefits in the world outside Novozymes as it saves resources such as water and energy. Although our enzyme production in isolation does impact on the environment, this is more than offset by the advantages of our customers using enzymes instead of conventional technology. We have achieved the targets we have set ourselves of using less and less water and energy per unit produced, often exceeding them by a substantial margin. In 2004 we improved our use of water by 16% and energy by 13%. ■



Strong share price performance

The Novozymes share performed well in 2004, climbing 29% from DKK 215.50 in January to DKK 278 at the end of December. The reasons for this strong growth were partly a generally positive Danish stock market (the KFX blue-chip index gained 17%) but mainly Novozymes' continued good results in 2004, attained despite deteriorating exchange rates.

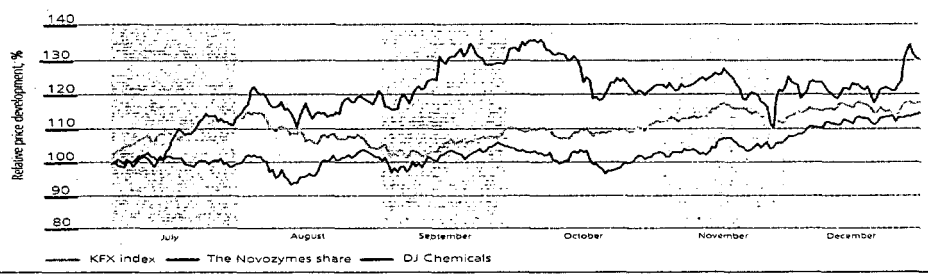
At the end of 2004 Novozymes itself held a total of 6,010,000 B shares, corresponding to 8.3% of its total share capital.

Share data 2004

- 12th most traded share in Copenhagen
- 37.5 million shares traded, against 36.4 million in 2003
- Share turnover DKK 9.8 billion
- Year-end market capitalisation DKK 20.2 billion

At the Annual Meeting of Shareholders on March 16, 2005 the Board of Directors will propose payment of a dividend of DKK 3.50 per share for the 2004 financial year, equivalent to 30% of net profit per share. ■

Novozymes' B share in the second half of 2004



novozymes®

Unlocking the magic of nature

Good year despite headwind

2004 was another year of very healthy bottom-line growth for Novozymes, despite the wind definitely not being with us. We have come through the negative effects of the falling dollar well, and we successfully parried rising oil prices because continual improvements in production efficiency and so better utilisation of resources meant that we were not so hard hit by higher energy prices. And yet again we demonstrated how our use of biotechnology enables organic growth, increased productivity and expansion into new areas.

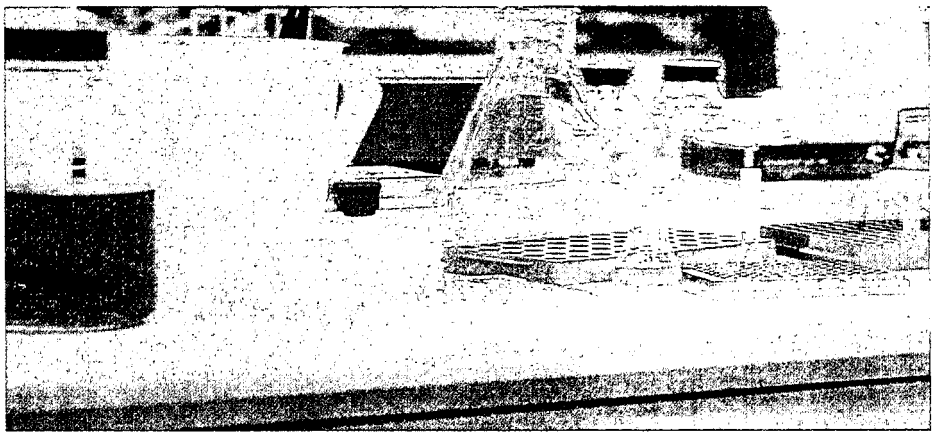
Strong Danish krone a challenge

But there are still obstacles in our path. The strong Danish krone is a particular challenge. When Novozymes was floated on the Copenhagen Stock Exchange in 2000, a dollar was worth DKK 8.70; at the end of 2004 we were getting just around DKK 5.50 for every dollar. We are good at hedging our exposure; however, if the dollar continues its decline, we must expect the market situation to be affected.

A technology on the up

If we look at the world around us, we can see that our technology, industrial – or 'white' – biotechnology, is now making major inroads, both in terms of enzymes and other areas. A century back a young, dynamic person wanting to help shape the future would have wanted to be a chemist. Chemistry was a young technology then, and it was clear that it would have an impact. Today it is to biotechnology that we need to look. I believe that a century from now – and maybe sooner – biotechnology will have had just as great an impact on society as the chemical industry has had today. Only this time we have an opportunity to create a better balance between the need for economic growth and the needs of society and the environment. I hope that Novozymes will play a central role in this development.

Steen Riisgaard,
President and CEO



New digestive enzymes are under development.

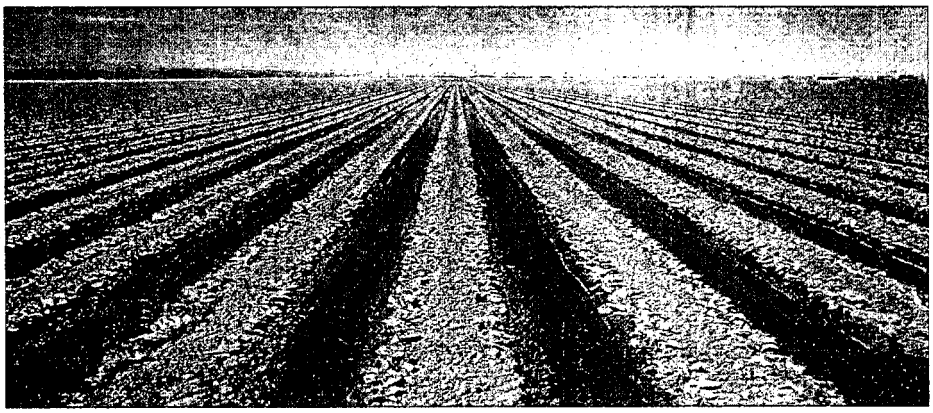
New digestive enzyme alliance

In November Novozymes entered into an alliance with Solvay Pharmaceuticals on the development of new products for the treatment of patients with digestive problems caused by diseases like cystic fibrosis.

An estimated 880,000 people worldwide have problems digesting their food and absorbing the nutrients in what they eat, which can lead to malnutrition. This disorder can result from diseases like cystic fibrosis or from pancreatic surgery.

The two companies plan to collaborate on the development of specially tailored digestive enzymes using biotechnology. These enzymes are already under development and are expected to have an efficacy profile close to that of human pancreatic enzymes, so making the treatment better than that offered by existing products. The two companies' technologies complement each other well in this project, as Novozymes is the world leader in enzymes and Solvay the leader in the market for products for the treatment of this disorder. Solvay's CREON® product line is currently the most widely prescribed in the world for this type of treatment.

The alliance with Solvay is a good example of how Novozymes can use its enzyme-based biotechnology in new areas outside its core businesses. ■



Enzymes to break down plastics

Novozymes has teamed up with Japan's Mitsubishi Chemical Corporation (MCC) to develop a biodegradable plastic product concept.

MCC, the largest chemical company in Asia, has developed a new biodegradable plastic, while Novozymes has contributed the enzymes which enable the plastic, which is used in agriculture, to be broken down biologically. Sales are expected to start in the spring of 2005, initially to Japanese farmers.

When farmers grow vegetables, they often lay black plastic sheeting on the fields to keep weeds at bay and retain warmth, so allowing them to get two or three harvests a year. Previously farmers would gather together the used plastic and burn it, but new environmental legislation in Japan has now banned this. Farmers using the new biodegradable plastic instead spray it with a solution containing enzymes from Novozymes. The plastic then breaks down biologically over three to four months, and no toxins are released in the process. ■

Dollar rate still a challenge

The dollar rate has fallen drastically over the last few years. At the time of Novozymes' stock exchange listing in 2000, one dollar cost around DKK 8.70, whereas at the end of 2004 it could be bought for DKK 5.50.

As a result of its significant volume of international trade, with more than 80% of sales being in foreign currencies, the Novozymes group has a very high level of exposure to exchange rate changes, particularly for the USD. Approximately 40% of Novozymes' sales are invoiced in USD. A 5% change in the dollar rate will have an impact of DKK 30-40 million on operating profit.

The lower dollar rate also poses another challenge for Novozymes as some of our competitors present their accounts in USD, which may give them a competitive advantage as a result of the lower dollar rate.

Novozymes adjusts to the challenge posed by the falling dollar on an ongoing basis, e.g. by hedging its currency exposure and being prepared for a possible change in the competitive situation. ■

Microorganisms ease environmental problems in shrimp industry

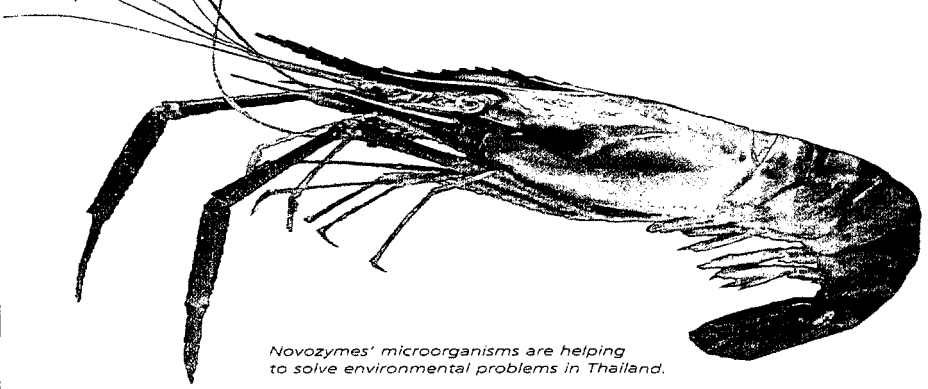
Novozymes' microorganisms show promising results on industrial shrimp farms in Thailand.

The market for tiger shrimp and other shrimp species has exploded since the 1990s due to growing industrialisation in countries where the shrimp are grown and harvested in large farming areas. Unfortunately the industrialisation of shrimp farming has caused environmental problems in the form of polluted water.

Microorganisms from Novozymes can help to solve the environmental problems in the shrimp-farming industry – especially in Thailand, China and elsewhere in Southeast Asia – as they have achieved remarkable results in controlling ammonia and nitrite levels in the ponds on Thai shrimp farms.

The product PrawnBac® PB has given Novozymes a foothold in the market for biological water management products in the shrimp-farming industry, and a promising new product, PrawnBac NC, is close to the market.

Novozymes' new industrial microorganisms business area was built up through a series of acquisitions in 2001-2003 targeted at applications for wastewater treatment, institutional and household cleaning, and biological plant care. In 2004 the focus was on consolidating the business area and generating organic growth. ■



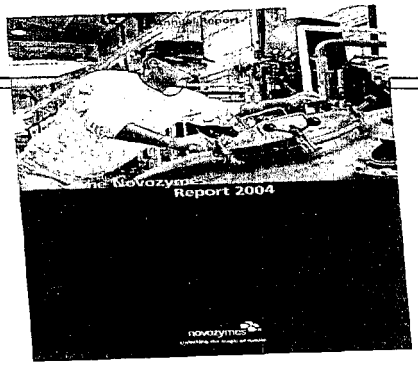
Novozymes' microorganisms are helping to solve environmental problems in Thailand.

Business integrity contributes to the global economy

Corruption is a burden to the global economy. The World Bank estimates that worldwide more than USD 1,000 billion are paid in bribes each year, and that global economic growth could be 3 percentage points higher without corruption. The World Bank's calculations also indicate that corruption effectively constitutes an additional cost to foreign direct investments of no less than 20%. Consequently, various stakeholders are increasingly asking companies to account for their position on corruption and the internal systems they have in place to prevent bribery.

As a global company with activities in many countries, Novozymes wants to show that it is possible to grow a healthy global business based on values such as transparency, responsibility, openness and honesty. This way of doing business has characterised Novozymes for many years and will continue to do so. Employees and customers are also seeking clear positions and guidelines in this area. In 2004 new initiatives were taken in the area of business integrity as part of Novozymes' sustainability work.

This work is now taking concrete form in the six integrity principles, which state, for example, that Novozymes neither offers nor accepts bribes under any circumstances. At the other end of the scale comes the exchange of small symbolic gifts at business visits and similar events. Cultural traditions in this area vary widely and therefore we will establish local upper limits for gifts in each country. ■



Order the annual report

The Novozymes Report 2004 can be downloaded in Danish or English from **www.novozymes.com**. The printed version will be published on March 7. This issue of *The Zymes* contains abridged versions of many of the articles in the report. ■

Employees at Novozymes' Chinese headquarters in Beijing.

China: Ten years of rapid development

China is one of the world's largest growth markets and is playing a central role in the internationalisation of Novozymes' activities.

Novozymes was one of the first international companies to start up a 100% foreign-owned company in China. This was in 1994, with the planning of a new factory in the Tianjin Economic Development Area (TEDA) near the port of Tianjin. The decision to enter China on an ambitious scale was part of a strategy of developing the Chinese market for enzymes. Local Chinese key employees helped us to get off to a good start, and skilled and committed employees in China are still an important element in Novozymes' ability to adapt to the rapid pace of development.

Centre for expansion and development

In recent years China has evolved from primarily being a world centre for production to also being one of the largest markets for selling goods. The Chinese market has developed positively for Novozymes, and the country is now our second-largest national market after the USA. The biggest sales areas are enzymes for the textile, detergent, starch and fuel ethanol industries.

The beginning of China's growth period was characterised by the desire to attract production and jobs and achieve economic growth. Today we are seeing an increased awareness that economic growth has to be combined with sustainable development. This is offering new opportunities for Novozymes and our strategy of providing environmentally friendly solutions to industrial problems.

Many of Novozymes' global functions are now located in China, e.g. the main centre for testing detergent enzymes, and in 2005 we will be taking a new, major step in China when the management of our textile enzyme business moves to Beijing as part of the globalisation of our own organisation. ■

Novozymes in China

Employees: 589

Headquarters and R&D: Beijing

Production: Tianjin, Hongda and Shenyang

Primary industries: textiles, detergent, starch and fuel ethanol

From bare soil to...

1994:
Licence awarded to set up a 100% Novozymes-owned company in China

1995:
Construction of factory in the Tianjin Economic Development Area (TEDA) begins

1995:
Joint venture set up with a strategic partner, Hongda

1996:
Chinese headquarters and R&D centre established in Beijing

1997:
Enzyme factory in Tianjin opens

1998-2003:
Gradual upscaling of production in China

2003:
Novozymes Biologicals expands into China

2004:
Novozymes celebrates its tenth anniversary in China

The enzyme phytase is used in chicken feed, for example.

New times in the feed enzyme market

After several years of very rapid growth in feed enzymes, new times lie ahead with fresh challenges and more moderate growth rates.

The strong sales growth of recent years has been driven mainly by Novozymes' well-known feed enzyme phytase, which improves the utilisation of phosphorus in pig and chicken feed, and also has major environmental benefits by reducing phosphate emissions from farms.

Sales to the feed industry are still going well, and Novozymes is sticking with its long-term target of 10-20% annual growth, but growth rates are likely to be lower than in recent years (in the order of 5-10%). Competitors are popping up worldwide, and the industry is maturing, leading to a battle for market share.

One of the feed enzymes currently selling best, especially in South America, is Ronozyme® VP. It is particularly popular right now because it enables livestock to make better use of the soya in their feed, and this is attractive to farmers now that soya prices have risen. ■

From Novozymes' factory in Brazil.

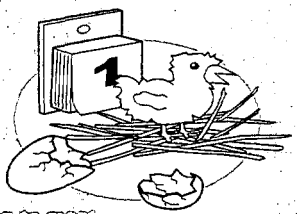
Growth in Latin America

Latin America is the region where Novozymes saw the greatest relative growth in 2004, and there is potential for further growth in the future.

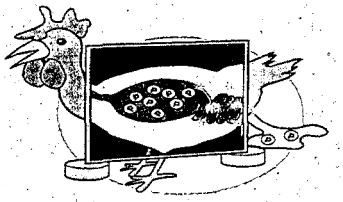
The economic and political climate in Latin America is more stable than ever, and foreign companies are increasingly moving into the region to exploit its increased purchasing power. With both production facilities and its own sales force in Latin America, Novozymes is in a good position to tap this potential. Novozymes currently commands around 40% of the enzyme market in Latin America, where the greatest growth is in feed, detergent and brewing enzymes. The detergent market is especially interesting because the Brazilians do more laundry more often than people in other countries. ■

Novozymes first started up in Brazil in 1975 in São Paulo. In 1989 we built our own factory in Curitiba, which currently has around 180 employees. In Mexico, where Novozymes arrived in 1980, we now have a subsidiary with 15 employees.

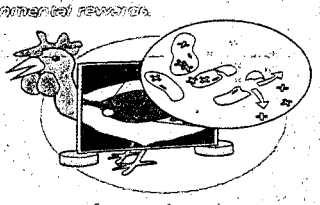
Enzymes save money and protect the environment



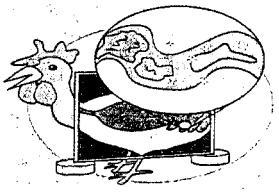
From egg to meat
When an animal is born, it needs food to grow. Piglets start off just drinking their mother's milk, but soon move onto industrial pig feed, while chicks need feed right from the start. For the farmer to make a living, he needs the feed for both types of animal to be as cheap and nutritious as possible – and that's exactly what enzymes can give him.



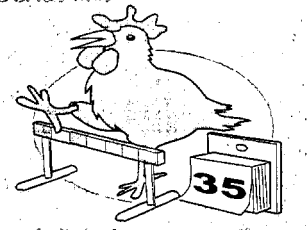
Saving both money and the environment
Adding Ronozyme® VP to feed helps the animal to absorb phosphorus, which is used to build strong bones. Without phytase in the feed the producer has to add large quantities of inorganic phosphorus, which is expensive. Phytase also reduces the amount of phosphorus which is released in the animals' manure and ends up in the aquatic environment, so there are both financial and environmental rewards.



Getting as much protein as possible out of the feed
Novozymes' vegetable protein (VP) products help animals to absorb more protein from vegetable protein sources by breaking down the cell walls in crops like soya, barley and wheat.



Preventing disease and promoting rapid growth
Chicks grow incredibly quickly and must therefore have plenty of nutrients. But if there's too much fibre in their diet, it creates a mucous mass of food in their intestines. Their bellies then get full, so they eat less and grow more slowly. In addition, the nutrients are exploited by micro-organisms in the intestines which can be a serious germ. Our enzymes break down this fibre to ensure a better flow.



Oven-ready in just over a month
A chicken is ready to be slaughtered and sent out to the store around 35 days after entering from its shell.

Key figures	2004 DKK m	2003 DKK m	% change
Net turnover	6,024	5,803	4
Operating profit	1,090	982	11
Net financials	-9	33	–
Profit before tax	1,081	1,015	7
Net profit	782	726	8
Operating profit margin	18.1%	16.9%	–
Cash flow before acquisitions	1,080	982	10
Free cash flow	1,080	800	35
Return on invested capital (ROIC)	17.3%	15%	–

Very satisfactory 2004 results despite the lowest dollar rates in ten years

Despite very negative exchange rate movements, the financial results are wholly in line with the upwards-adjusted outlook published in October 2004.

Sales rose by 4% to DKK 6,024 million. Calculated in local currencies, sales rose by 8%. Operating profit rose by 11% to DKK 1,090 million, while net financial costs were DKK 9 million, compared with net financial income of DKK 33 million in 2003. Net profit rose by 8% to DKK 782 million. Free cash flow increased to DKK 1,080 million, compared with DKK 800 million in 2003. No acquisitions were made in 2004; however, acquisitions in 2003 had an impact on free cash flow of DKK 182 million. ROIC is now in excess of the long-term target, having risen from 15% in 2003 to 17.3% in 2004.

Change to accounting policies

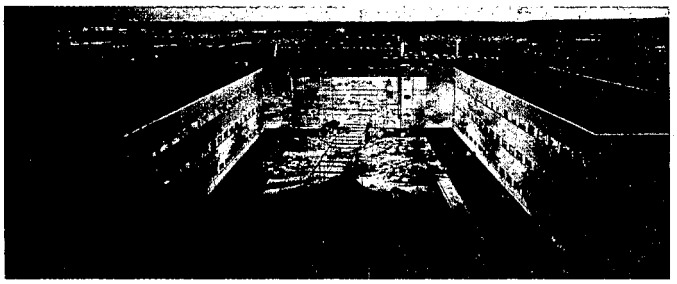
With effect from January 1, 2005 Novozymes is changing its accounting policies in accordance with the requirements of the International Financial Reporting Standards (IFRS). *The Novozymes Report 2004* explains the changes and the effects of the transition to IFRS.

Outlook for 2005

Novozymes anticipates sales growth in local currencies of 6-7%. Calculated in DKK, sales are expected to rise by approx. 4%. Growth in operating profit is expected to exceed 10%, while growth in DKK is expected to be just below 6%, significantly reduced by less favourable exchange rates. Net financial costs are expected to be DKK 40-50 million. Net profit is expected to rise by approx. 5%. Novozymes further expects free cash flow before acquisitions to be in the region of DKK 750-850 million, while ROIC is expected to be just over 17%, as in 2004.

The outlook for 2005 has been calculated in accordance with IFRS. The transition to IFRS does not impact on growth rates for 2005.

Novozymes around the world

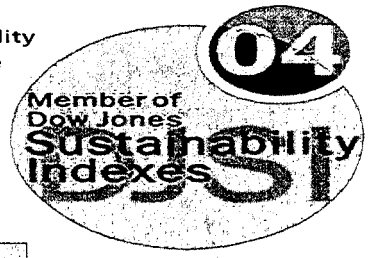


Best large workplace

Novozymes won the prize for the best workplace among companies with more than 1,000 employees in the Denmark's Best Workplaces 2004 survey. Novozymes was praised for its unique structures and policies to support a successful large workplace. Particular emphasis was given to senior management's ability to remain close to the employees. Equal opportunities, personal development plans, one year's paid maternity, flexitime and a wide range of leisure activities also played a role. ■

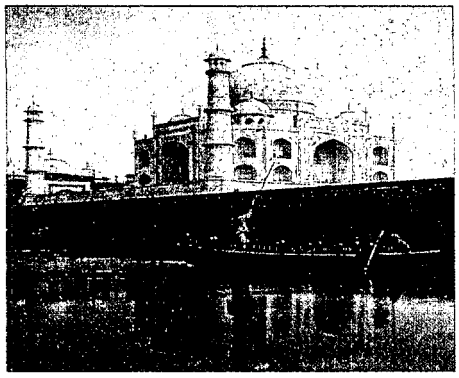
Best at sustainability – for the fourth time

For the fourth year in a row Novozymes was ranked number one by Dow Jones Sustainability Indexes for both Biotechnology and Healthcare. ■



Help for golf club

The greens at Kalundborg Golf Club had long been troubled by fungal attacks, but the use of traditional pesticides ran the risk of polluting nearby drinking water wells. Novozymes came to the rescue with an environmentally friendly biological solution. "We're delighted to be able to help Kalundborg Golf Club improve its greens and also help the environment," says Jens Møller Nielsen, vice president of Novozymes' Danish production. ■

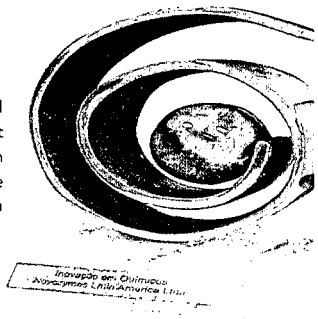


India on the up

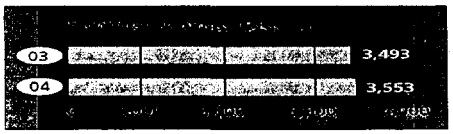
Novozymes spies exciting potential in India. As one of the world's most populous countries, India is an interesting market, and Novozymes already has a small sales organisation there. But India is interesting above all because it has very high levels of research and because the whole biotechnology field is developing rapidly. However, infrastructure, industry and market lag well behind China, for example, in terms of both standard and potential. In January 2005 Novozymes' management visited India in connection with its annual strategy meeting. ■

Prize from Unilever in Brazil

Each year Unilever Latin America awards prizes to its best suppliers around the world. Once again Novozymes Latin America won not only the innovation prize but also the best-of-the-best prize. ■

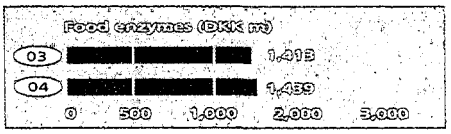


Fuel ethanol gains ground



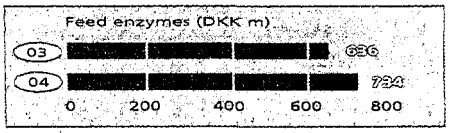
Sales of **technical enzymes** increased by 2% in 2004, reduced by less favourable exchange rates and the market situation being affected by exchange rate movements. Sales to the detergent industry were 1% below the figure for 2003, while there was a slight increase in sales calculated in local currencies. Sales of other technical enzymes grew by approx. 5% in 2004, driven mainly by growth in sales of enzymes for the production of fuel ethanol. Sales to the textile industry also grew healthily. Sales to smaller industries such as pharmaceutical proteins, leather and forest products rose satisfactorily.

Baking industry on a diet



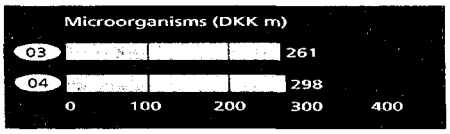
Sales of **food enzymes** rose by 2% in 2004, and more than 5% in local currencies. Sales to the baking industry were negatively affected throughout 2004 by significantly lower bread consumption in the USA, while sales of enzymes to the brewing industry rose. The trend in both industries has been driven by the American Atkins diet, which focuses on reducing the intake of carbohydrates. Enzymes for the remainder of the food industry coped satisfactorily.

Continued growth in animal feed – albeit at a lower rate

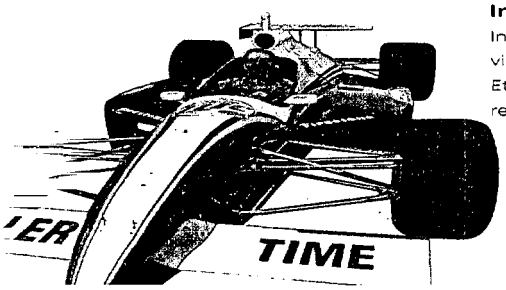


Sales of **feed enzymes** rose by 15% in 2004, significantly reduced by less favourable exchange rates, as an increasing proportion of sales is in USD and USD-related currencies. Market penetration has now reached a level where growth will be lower than the very high growth rates seen to date.

Integration of acquisitions completed

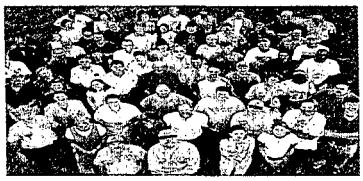


Sales of **microorganisms** grew by 14% in 2004, primarily within the markets for cleaning and plant care. As sales in this business area are mainly USD-related, growth has been negatively affected by exchange rate movements. On the other hand, some of the growth derives from acquisitions made in 2003. Integration of the purchased activities ran according to schedule, and the focus is now on boosting organic growth and increasing profitability in this business area. ■



IndyCar sponsorship

IndyCar driver Paul Dana in the USA is now helping Novozymes to promote the concept of environmentally friendly fuels. Novozymes has decided to co-sponsor car 91 – also known as the *Ethanol Car – together with various other companies in the ethanol industry. The Ethanol Car* replete with Novozymes' logo should feature at the Indianapolis 500 in May 2005. ■

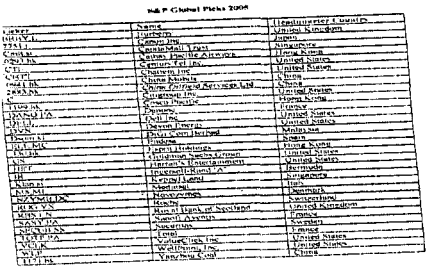


Prize in Salem for environmental contribution

On September 22 a panel of judges from industry, academia and the regulatory environmental authorities awarded Novozymes gold for its contribution to a clean and healthy environment. Novozymes in Salem was awarded the prize for its work on developing and promoting environmentally friendly biological solutions for cleaning and plant care. ■

Can biotechnology give us healthier food?

This was the question when the Danish Advisory Committee on Food Research hosted the conference "Healthy, safe and tasty food through biotechnology" in Copenhagen on November 8. The conference marked the start of a debate on the potential of biotechnology when it comes to *food. Decision makers, seats of learning, consumer* and other pressure groups, trade associations and companies all took part. Novozymes' CSO Per Falholt chairs a steering group which has produced a strategy for research into biotechnology which sets out clearly how consumers stand to benefit from the new technology. ■

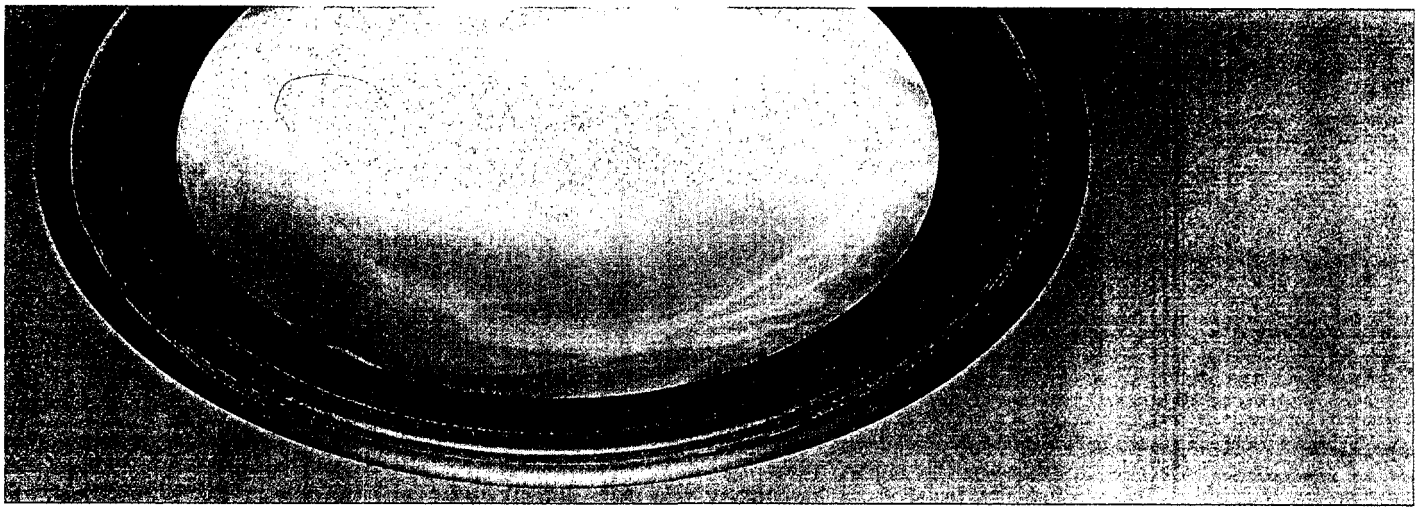


Novozymes in Standard & Poor's portfolio

Novozymes is the only Danish company to *feature in the Global Powerpicks 2005* portfolio of the 30 stocks expected to yield the best returns in 2005 compiled by analysts at Standard and Poor's. Novozymes has been included for delivering stable and high growth rates and impressive earnings margins. ■

BioJapan

BioJapan, Asia's largest biotechnology conference, was held in Tokyo in 2004 and attracted more than 10,000 people working with biotechnology all over the world. Novozymes attended the conference partly to find alliance partners for its new business areas but above all as an opportunity to raise the company's profile in the industry, and CEO Steen Riisgaard gave a speech looking at white – or industrial – biotechnology. ■



Novozymes' new product, HyaCare®, can be used in face creams and cosmetics, for example.

First product outside traditional markets

In 2004 Novozymes launched its first biopolymer product, a hyaluronic acid called HyaCare®.

Many people would love a smoother complexion, and many are willing to pay good money to get it. Therefore the cosmetics industry markets a wide range of products to keep the skin looking young. With the launch of HyaCare for use in face creams and other cosmetics, Novozymes took its first step into this new market.

Hyaluronic acid is found naturally in humans and animals, and has a well-documented ability to bind water. This enables the substance to stop the skin from drying out and, for example, help wounds to heal faster.

Adults have an average of 14-18 grams of hyaluronic acid in their skin, eyes and joints, but it gets broken down with age, and the low level of hyaluronic acid may be the reason why wrinkles form. Hyaluronic acid is often an important ingredient in face creams at the top end of the market.

Novozymes produces HyaCare using a new production method which sets the product apart from other hyaluronic acids on the market. Existing products are either extracted from cocks' combs or produçed by fermenting *Streptococcus* bacteria. Novozymes' hyaluronic acid is produced by a microorganism called *Bacillus subtilis* which has been approved and used for decades in the production of foods such as soy sauce and rice wine. Our experience of fermentation technology and controlled production processes means that we can supply a particularly pure product of uniform quality.

As well as being used in creams and cosmetics, hyaluronic acid has a broad range of applications in other areas, for example in the treatment of arthritis and in eye operations.

Partnerships are an important strategic element in the new area. The production method for HyaCare was developed through an alliance with the US company Hyalose, which has long experience of researching and developing hyaluronic acid.

In the pharmaceutical industry Novozymes has entered into an alliance with the Australian company Meditech Research Limited, which is researching the use of hyaluronic acid in the treatment of cancer.

Novozymes' involvement in this field is a result of a strategic decision in 2000 to use the company's core biotechnological know-how to develop new areas, both within and beyond the enzyme field. ■

New faces at Investor Relations

Lene Aaboe took over from Michael Steen-Knudsen as head of Novozymes Investor Relations on November 1. Lene was previously head of Novozymes' Treasury department and has worked for Novozymes and Novo Nordisk for around ten years in total. Niels Eldrup Meidahl joined Investor Relations on July 14.

From left: Ella Begtrup, Thomas Kudsk Larsen, Niels Meidahl and Lene Aaboe.

Financial calendar

February 3, 2005 – Annual report 2004 available at www.novozymes.com

March 7, 2005 – Annual Report for 2004 available in printed form

March 16, 2005 – Annual Meeting of Shareholders, KB-Hallen, Peter Bangs Vej 147, 2000 Frederiksberg, Denmark

April 28, 2005 – First quarter 2005 Group financial statement

August 11, 2005 – First half 2005 Group financial statement

October 27, 2005 – First three quarters 2005 Group financial statement

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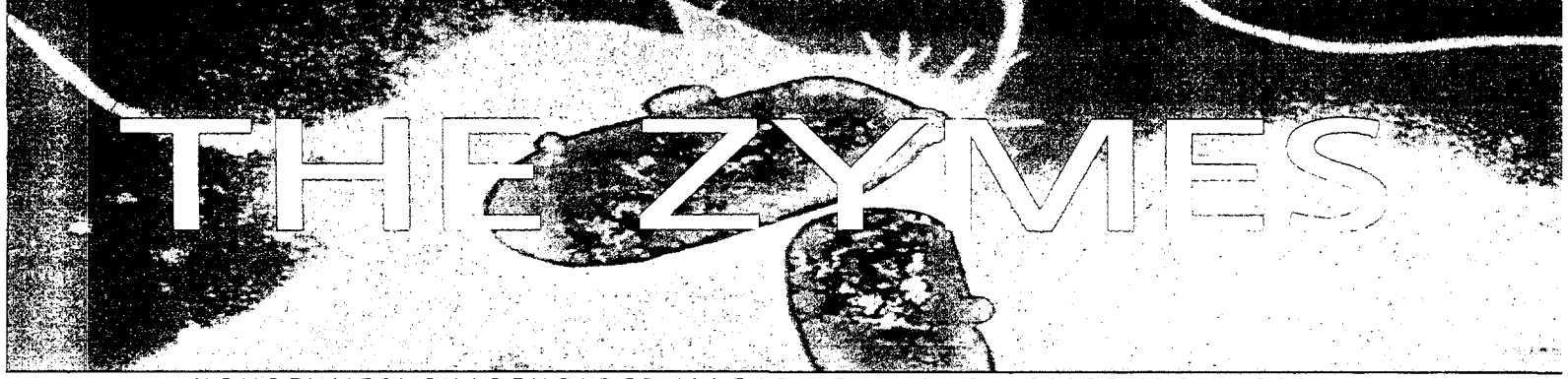
novozymes®

Unlocking the magic of nature



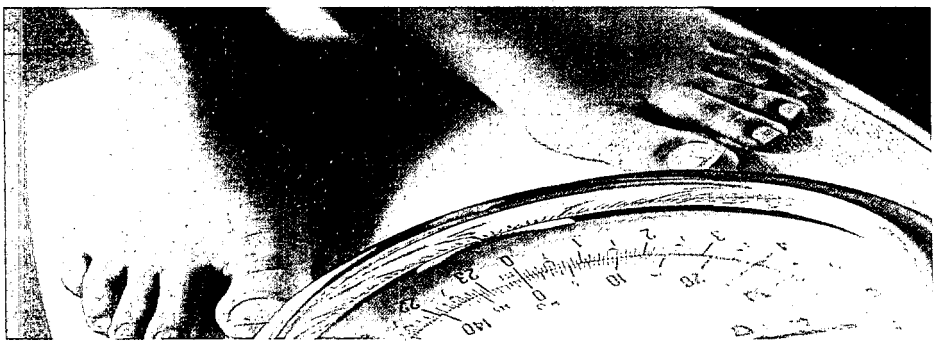
NOVOZYMES' SHAREHOLDER MAGAZINE · NO. 2 · SEPTEMBER · 2004

Slimming diets affect sales of food enzymes

The diet trend sweeping the USA is undermining sales of bread enzymes on the one hand, but boosting sales of enzymes for low-carb beer on the other.

Around 10% of the US population is estimated to be on one of the popular new diets recommending fewer carbohydrates and more protein. The trend is in fact so strong that it is changing the shape of the US food industry. The bread industry, among others, has been hit hard by the drop in carbohydrate consumption, while breweries with low-carb beer in their range are riding high. So Novozymes is experiencing both the upside and the downside of the new diet trend. Sales of our otherwise popular bread enzymes have tumbled, and although growing sales of enzymes for low-carb beer are pulling in the other direction, our expectations for sales of food enzymes this year are not up there with previous years. However, there is much to suggest that the low-carb diet fad has peaked, so the bread industry can now set about winning back some of its lost sales. ■

The US bread industry is being hit by both diet trends and rising gas, gasoline and flour costs. This in turn has impacted on sales of enzymes.



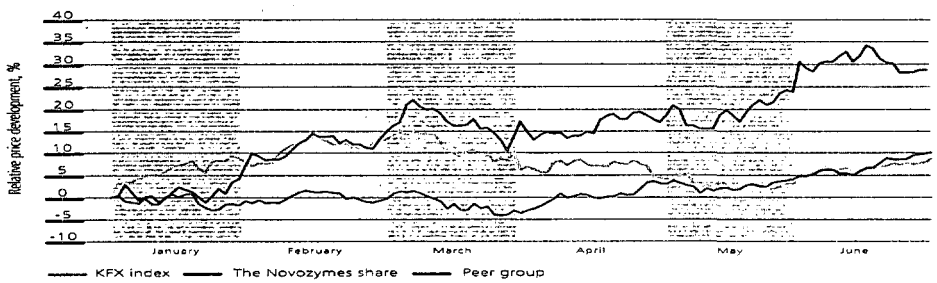
Keen foreign interest raises share price

Novozymes' share price rose by almost 30% in the first half of 2004. Given that the KFX index and the peer group index rose by around 10% in the same period, Novozymes' share has fared relatively well.

Part of the reason for the strong growth is keen interest from foreign investors, especially in the UK and the USA. So in spite of movements in exchange rates being negative for Novozymes, we still managed to maintain good growth in our share price.

Trading in the share has also been satisfactory, with the share being among the 11-12 most traded shares in Denmark. ■

Novozymes A/S' B share in the first half of 2004



The Zymes lives on

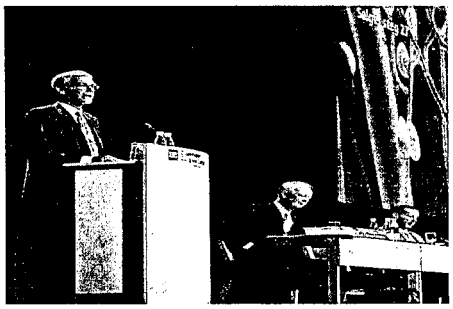
A shareholder magazine with no readers is money down the drain, so in the spring *The Zymes* asked readers whether they still wished to receive it. The response was a resounding yes. Of the 4,564 respondents, no fewer than 99% still wished to receive *The Zymes*, and 63% of these still wished to receive the magazine twice a year. As a result, readers will continue to be sent two issues each year.

The editorial team would like to thank readers for their interest and participation in the survey. □

Share capital written down

The write-down of Novozymes' holding of own shares has now been completed.

The annual meeting of shareholders on March 17, 2004 resolved to write down Novozymes' share capital, so reducing the company's holding of its own B shares from 7,213,224 to 4,374,392. The write-down has now been completed, leaving the total number of shares in issue at 72.6 million. ■



Chairman Henrik Gürtler announced the write-down at this year's annual meeting of shareholders.

Heading for new markets

With a solid half-year behind us, it is time to take stock of our strategic decisions. In 2001 we tackled the setting up of a new business area for microorganisms. With five acquisitions in the last three years, we have now also taken our place as world leader in microorganisms for cleaning, wastewater treatment and plant care. With a new, well-consolidated business area and good organic growth in sales, we are in the process of preparing ourselves for new markets and new business opportunities outside enzymes and microorganisms. This strategy involves developing technology from the enzyme business so that it can be used in the new segments of biopolymers, pharmaceutical proteins, antimicrobial peptides and low-allergen protein technologies.

We will soon be ready with our first biopolymer product – hyaluronic acid for the cosmetics industry – and we have just decided to develop hyaluronic acid also for the medical device and pharmaceutical industries.

As far as pharmaceutical proteins are concerned, we have decided that in 2005 we will invest in the expansion of the production plant that we purchased in Lund in 2003 so that it can obtain FDA approval. We have also agreed to extend the cooperation with Neugenesis Corp. that we began in 2002 as the project continues to make progress.

Within antimicrobial peptides we have identified several interesting classes of naturally occurring peptides. One of the projects is now so far advanced that we are seeking a partner to take the project further.

The fourth and – so far – final new area in which we are researching the opportunities for our technology is low-allergen protein technologies, and here too we are seeing good results. We have succeeded in developing a system for producing and recovering one of the two main house dust mite allergens and manufacturing variants that can reduce the risk of the allergic reactions that can result from allergy vaccination.

Best wishes
Steen Riisgaard

In 2008 Beijing will be receiving thousands of guests from all over the world, so it needs to be clean. This may benefit Novozymes' sales of microorganisms.

China spring-cleans ahead of Olympics

China's hosting of the 2008 Olympics could boost the demand for microorganisms. After a series of acquisitions, our microorganisms business is now in the consolidation phase, and sales are under way in Europe and Asia.

China in particular may prove an interesting market. The Chinese have already begun to spring-clean in preparation for the Beijing Olympics in 2008, and this could boost the demand for microorganisms for cleaning, wastewater treatment and plant care.

Novozymes' microorganisms are used for cleaning, wastewater treatment and plant care.

By September the last of the five acquisitions which together make up our microorganisms business area will be fully integrated into Novozymes' microorganisms business in Salem, Virginia, USA.

"So far we've been concentrating on acquisitions and consolidation of the business area," says Ted Melnik, vice president of Novozymes' microorganisms business. "Now we can focus on growing our sales."

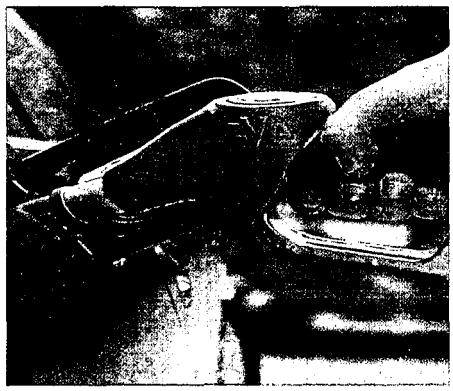
Novozymes anticipates organic growth of around 10%, much of which is expected to come from Europe and Asia, where the markets for microorganisms are still untapped. ■

More financial support for research in biofuel

In April the US Department of Energy extended its support for Novozymes' bioethanol project by a further year and USD 2.3 million.

After three years of working together on the production of ethanol from corn stover, Novozymes and the US National Renewable Energy Laboratory (NREL) have managed to reduce the enzyme cost from more than five dollars to less than 30 cents per gallon. These excellent results are down to the NREL's technology for pre-treating the leaves and stalks and Novozymes' subsequent enzyme treatment. To bring down the enzyme cost even further, Novozymes has had its contract with the NREL extended by a year and been awarded additional funding of USD 2.3 million.

The goal is to cut the enzyme cost per gallon of ethanol produced to ten cents. ■



For waste from corn production to be used as an octane booster in gasoline, the cost of the process needs to be reduced further.

R&D 100 Award for innovation

Thanks to their innovative low-cost method for converting biomass to ethanol, Novozymes and the NREL are among the winners of the [illegible] Awards presented by *R&D Magazine* for the year's 100 most technologically significant products. □

New boss for Novozymes in Lund

Anders Gram took over as vice president of Novozymes' biopharmaceutical operations at Novozymes in Lund in Sweden on April 1, 2004. He succeeds Harald Skogman, who has retired after more than 30 years at the helm. ■

Sharper focus on sustainability

Our first overall strategy for sustainable development is now in place.

Having an overall strategy for the environment, bioethics and social responsibility means that Novozymes can now approach sustainability with even greater consistency and focus.

The strategy has five focus areas for 2004: a strategy for genetically modified organisms, improvements to internal and external targets for sustainability, implementing sustainability in the strategies for individual industries, guidelines for business ethics, and local strategies for social responsibility.

The aim of the new strategy is to integrate sustainability even more closely into the business. ■

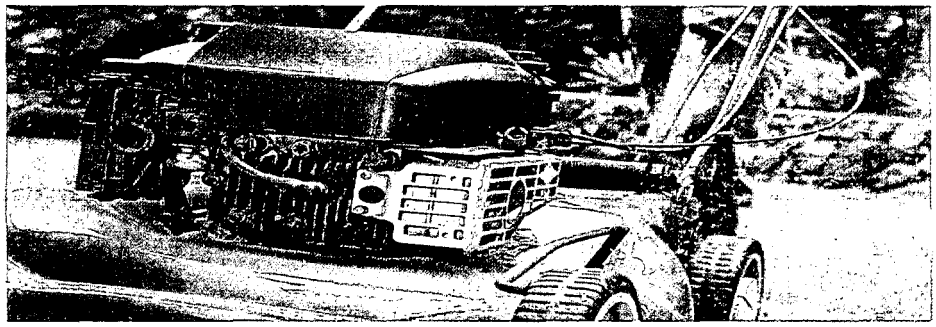
Good results in the hunt for new allergy vaccines

Technological advances in vaccines for house dust mite allergy may pave the way for safer and more effective treatment of many other types of allergy. Novozymes is now looking for partners.

The number of children with allergies has doubled in the last 20 years, and the number of allergy sufferers worldwide is on the increase. Novozymes' new technology makes it possible to meet the large and growing need for allergy vaccines. For example, people with dust allergy can be spared the daily inconvenience, while hay fever sufferers do not need to fear the summer.

The technology has been developed on the basis of house dust mite allergy. Immunisation against house dust mite allergy currently involves extracts of the mites' bodies and excrement. This method makes it difficult to administer precise doses and can increase the risk of violent allergic reactions, also known as anaphylactic shock. Novozymes has now succeeded in developing a new vaccination technology which can spare sufferers of house dust mite allergy from the unpleasant side-effects of treatment. Instead of using extracts from dust mites, Novozymes can instead produce the allergen using a microorganism, making it easier to give controlled doses.

The allergy project is an example of the use of low-allergen protein technology, which is one of Novozymes' initiatives outside its enzymes and microorganisms businesses. The research project forms part of our strategy to explore the long-term potential of our core technologies outside the enzyme field. Novozymes is now on the lookout for partners to help take the idea further. ■



Mowing the lawn can be an unpleasant experience for the many people with hay fever. A new technology for vaccination against house dust mite allergy may also bring relief to hay fever sufferers.

Managers' bonuses to depend on environmental performance

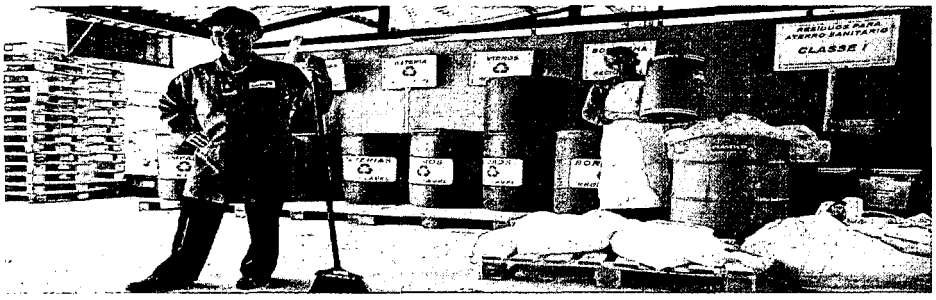
Our new bonus scheme is another step towards being a more socially and environmentally responsible business.

Novozymes is one of the first companies in Denmark to introduce a bonus scheme which is dependent on its social and environmental performance. All directors and vice presidents stand to receive a cash bonus if they help to meet 13 specific environmental and social targets. These targets include ensuring that there is no increase in the frequency of occupational accidents, and reducing the consumption of water and energy.

"We believe that environmental and social performance is very important for our future as a business," says CEO Steen Riisgaard. "One way of ensuring focus on this area is to integrate targets into the bonus system."

The 13 targets on which the new bonus scheme is based were published in the 2003 Annual Report. ■

Not only Novozymes' executive management but also all directors and vice presidents must take account of environmental and social matters to receive their bonus.



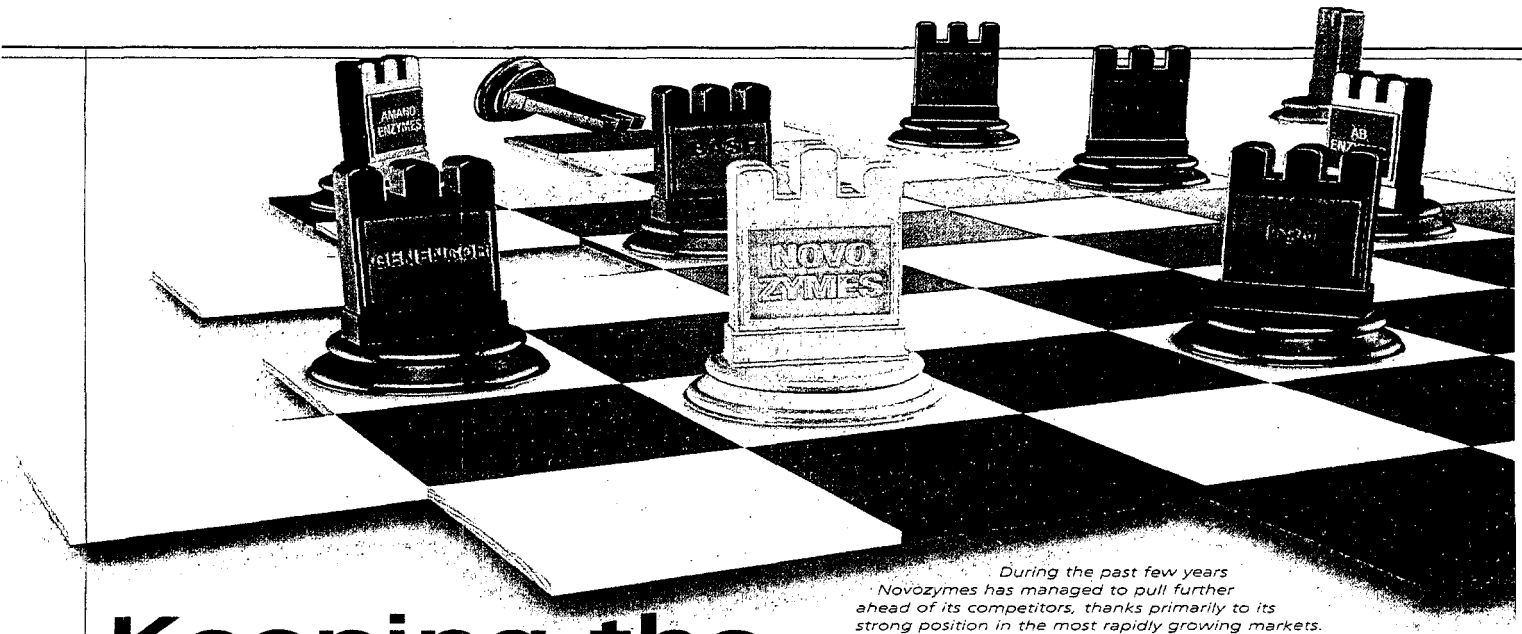
Hope for contaminated land

Collaboration on enzymes for cleaning up after attacks with chemical/biological weapons may also prove useful for chemical pollution.

With support from the Western European Union, Novozymes is in the process of developing effective and environmentally friendly enzymes to break down agents of chemical and biological warfare such as nerve gas.

The project has considerable potential, as the same enzymes can probably also be used to clean up other types of chemical contamination such as contaminated land, water pollution and chemical spills. This means that the project may have some interesting knock-on benefits.

The project is being supported by the Western European Union through the WRC research programme Eurofinder. The new enzymes can replace the traditional chemical-based systems available today. The project is currently due to run for four years. ■



During the past few years Novozymes has managed to pull further ahead of its competitors, thanks primarily to its strong position in the most rapidly growing markets.

Keeping the competition in check

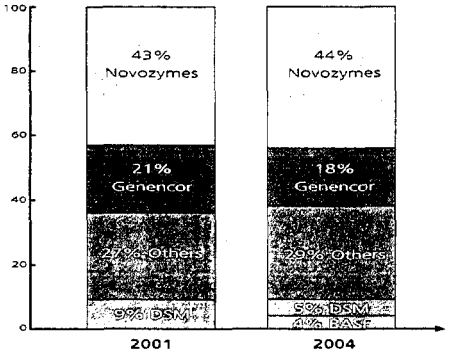
The state of competition in the market for industrial enzymes has been transformed in the last three years as strategic alliances make their mark.

In 2000 Novozymes had a successful alliance with Roche Vitamins on the distribution of feed enzymes. When Roche Vitamins was put up for sale by its owners, this sparked off a major shake-up of the competition in the feed enzyme market. Roche Vitamins was acquired by Dutch company DSM, Novozymes' second biggest competitor. But the two parties decided to continue collaborating on feed enzymes, and a new alliance was born. This in turn led to Germany's BASF, previously DSM's distributor, entering the market as a new independent player by taking over DSM's previous feed enzyme business. DSM's market share dropped from 9% to just over 5%, with BASF taking the remaining 4%.

One player unaffected by this reshuffle was Genencor, by far the biggest fish in the enzyme market behind Novozymes, because it has no real foothold in the feed enzyme market. With 44% of the enzyme market, Novozymes is the clear market leader, while Genencor currently has a market share of 18%. In recent years Novozymes has managed to pull further ahead of Genencor, thanks primarily to our strong position in the rapidly growing markets for food and feed enzymes. However, Genencor has strengthened its position in these areas by acquiring French food and feed enzyme producer Rhodia's enzyme business. DSM, which is now both our alliance partner and our competitor, is the third largest player in the market.

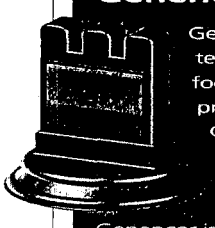
But now the sale of another player in the enzyme market has been announced, and the market is again buzzing with rumours and speculation. Last spring no less than Genencor was put up for sale by its owners, Denmark's Danisco and the USA's Eastman Chemicals. Whether this is good or bad news for Genencor depends on the buyer. Who will buy Genencor and when, nobody knows. Whatever happens, it will be interesting to follow developments – even though Novozymes' growth strategy is primarily about expanding the overall market for enzymes with new products and applications rather than winning market share from its competitors. ■

Market shares within industrial enzymes



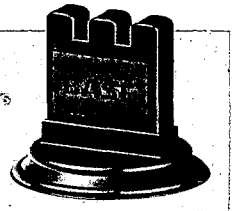
Novozymes' closest competitors

Genencor



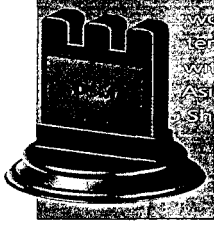
Genencor is a diversified biotechnology company and focuses on two markets: bioproducts and healthcare. Genencor generated sales in excess of USD 380 million in 2003 and employs about 1,300 people. Genencor is headquartered in the USA and its roots go back to 1982. Share of the market for industrial enzymes: 18%.

BASF



BASF is the world's biggest chemicals group and works in five business segments: Chemicals, Plastics, Performance Products, Agricultural Products & Nutrition, and Oil & Gas. BASF posted sales of EUR 33.4 billion in 2003. BASF is headquartered in Germany and employs around 87,000 people on five continents. Share of the market for industrial enzymes: 4%

DSM



DSM is active in life sciences and nutritional products, performance materials and industrial chemicals. The group has annual sales of approximately EUR 8 billion and employs 26,000 people around the world. DSM is headquartered in the Netherlands, with locations in Europe, Asia and the Americas. Share of the market for industrial enzymes: 5%

Research and alliances to expand the market

The need for a detailed patent strategy first became clear back in the 1990s. Today the management of patents and licences is an integral part of Novozymes' growth strategy.

When competitors applied for and obtained patents for some of Novozymes' core technologies back in 1985-95, the Novozymes story came close to a premature end. But we managed to pull the chestnuts out of the fire, and some 40 employees now work on managing Novozymes' patents, licences and alliances.

Novozymes' growth strategy is based on expanding the enzyme market with new applications and exploring the potential of our core technologies in new areas. 13% of sales turnover is invested in research, and the results are protected by more than 4,200 patents and patent applications. These make it harder for competitors to encroach on Novozymes' specialist areas.

On its own, Novozymes can commercialise only a certain proportion of its patented technologies. Licensing and partnership agreements are therefore an important tool – they help avoid a situation where valuable rights lie around unused, and ensure that the market is expanded through the development of new products. Novozymes has several hundred licence and partnership agreements in place with other companies, research bodies and universities. In most cases the partners are our customers, and the partnership is about developing and marketing new products. ■

Examples of partnerships

- In its core business, Novozymes has a partnership agreement with Dutch company DSM on the distribution and development of feed enzymes.
- In the dairy sector, Novozymes has a partnership agreement with Denmark's Chr. Hansen on expanding the market with new products, the first of which is due in 2005.
- Beyond enzymes and microorganisms, Novozymes has recently entered into an alliance with Australia's Meditech, which is in the process of testing a new form of cancer treatment in which hyaluronic acid is an important element.

Novozymes' 4,200 existing and pending patents plus several hundred licence agreements require regular review for updates and supplements. Here (from left): Ole Kirk, vice president of Strategic R&D Affairs, Gertrud Sonne Kofoed, head of Patents, and Svend Petersen, head of License Strategy.

Detergent enzyme saves electricity

A new enzyme can remove difficult stains and maintain colours even in cold water, benefiting both the environment and consumers' wallets.

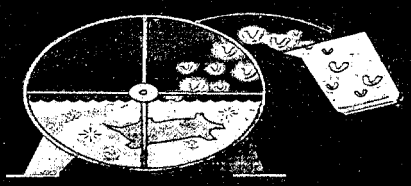
Stainzyme® is a new detergent enzyme which will allow us to wash at lower temperatures and still get rid of stains. It heralds a brand new generation of enzymes, because it can get clothes clean both in cooler water and on shorter cycles, so saving energy. If everyone washed at 30°C instead of 40°C, this would cut the energy consumed by washing machines by 30%, corresponding to around three nuclear power stations in the EU alone!

"We've been working on the product for five years, and we're proud that we've succeeded in coming up with a brand new type of enzyme which is so effective and environmentally friendly," says EVP Sales & Marketing Peder Holk Nielsen.

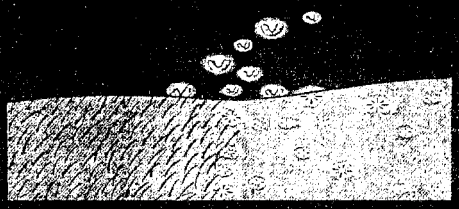
Detergent producers the world over have already shown an interest in the enzyme, and Novozymes expects Stainzyme to become a key ingredient of many high-quality detergents. ■

Lower temperatures and shorter cycles are the future, thanks to a new generation of enzymes.

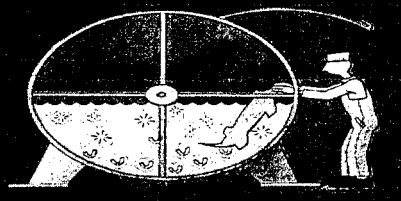
Enzymes provide the impetus in the leather industry



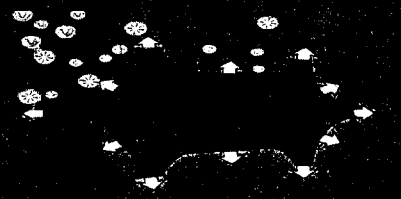
Save around 40 hours on soaking
By using enzymes, tanners only need to spend 6-10 hours on the soaking process instead of 48 hours. Most animal hides are salted and the tanners leave them to soak to restore their moisture content and open up their structure.



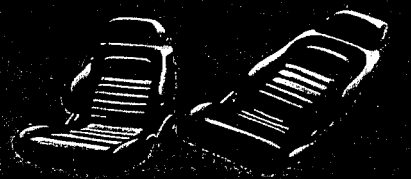
Remove hair with less chemicals
Now the pH value needs to be raised from 8-9 to 13 so that the tanner can remove the hair and keratin layer from the hide. Chemicals are always used in this process, but some of them can be replaced by enzymes.



Quick and effective bating
Now the hides need to be bated – a final cleaning process in which the tanner removes the remaining keratin and pigment to leave a clean, flat and fine piece of hide. Enzymes help to make this process quicker and more efficient.



Soften and enlarge the leather
Tanning is the next step in the process. Enzymes soften the hide and remove any creases. Chemicals are used for the actual tanning process, which stabilises the hide so that it does not rot. In the retanning process the tanner adjusts the pH of the leather depending on whether it is to be used for shoes, furniture or clothing. Enzymes help to soften and enlarge the leather. After greasing, dyeing, drying and finishing, the leather is ready for sale.



25 million m² of leather seats
Every year more than 25 million square metres of leather is sold to the car industry, mainly for use in car seats that are hard-wearing and comfortable – thanks to enzymes.

Solid growth despite continued negative exchange rate movements

Falling exchange rates continue to be a major challenge. However, growth is solid compared with the same period in 2003. Novozymes' outlook for operating profit for the year remains unchanged, while the outlook for free cash flow for the year is being adjusted upwards.

Key figures – first half	2004 DKK m	2003 DKK m	% change
Net turnover	2,976	2,840	5
Operating profit	522	458	14
Net financials	-12	44	-
Profit before tax	510	502	2
Net profit	378	361	5
Operating profit margin	17.5%	16.1%	

Environmental and social performance	2004	2003
Eco-Productivity Index, water	121	112
Eco-Productivity Index, energy	116	108
Occupational accidents per million working hours	8.9	7.2
Occupational diseases per million working hours	0.6	3.3
Number of employees	3,963	3,813
– Growth in number of employees, acquisitions	0	14
– Growth in number of employees, organic	64	61

Sales in the first half were DKK 2,976 million – 5% higher than in the same period last year. Calculated in local currencies, sales rose by 9%. Operating profit rose by 14% to DKK 522 million from DKK 458 million. The operating profit margin was 17.5% compared with 16.1% in 2003. Profit before tax rose by 2% to DKK 510 million from DKK 502 million. Net financial costs were DKK 12 million compared with net financial income of DKK 44 million. Net profit rose by 5% to DKK 378 million. Earnings per share were DKK 5.4, an increase of 6%. Free cash flow was DKK 477 million, compared with DKK 335 million in 2003.

In the environmental area, good results were achieved in the first half of 2004 for water and energy utilisation, which have improved by 21% and 16% respectively. The initiatives outside the enzyme and microorganism areas continue to show good progress. The outlook for growth in operating profit remains unchanged, despite exchange rate movements. Growth in profit after tax is expected to remain at around 7%. The outlook for free cash flow before acquisitions is now DKK 0.9-1 billion.

The history of Novozymes

1923-1942

1923 Founding

August Krogh and Hans Christian Hagedorn start Nordisk Insulinlaboratorium (later Nordisk Gentofte A/S). Two years later brothers Harald and Thorvald Pedersen start Novo Terapeutisk Laboratorium (later Novo Industri A/S).

1939 Production of enzymes

Thorvald Pedersen decides to expand the business to produce enzymes.

1942 The first staff outing

The tradition of an annual staff outing begins during the war. Unfortunately, the tradition has to stop because there are too many employees.

1960-1965

1960 First pilot plant

We build our first pilot plant in the factory at Fuglebakken in Copenhagen.

1961 Hallas-Møller becomes President and CEO

Thorvald Pedersen dies on September 20. Dr Knud Hallas-Møller takes over as President and CEO.

1965 Extra holidays

We celebrate our 40th anniversary and all employees get three extra days' holiday from now on.

1969-1974

1969 New enzyme factory

We open the world's largest enzyme factory in Kalundborg, Denmark, on November 7.

1970 Jogging club

We form Denmark's first company jogging club.

1971 Troubled times

We have to reduce our staff from 2,100 to 1,700.

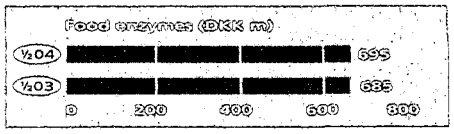
1974 Novo Industri A/S on the stock exchange

Novo Industri's B shares are quoted on the Copenhagen Stock Exchange. For the first time employees are given the opportunity to buy shares.

Significant growth in fuel ethanol and textiles

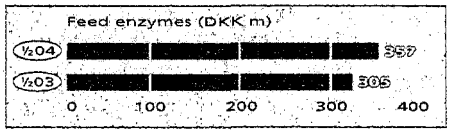
Sales of **technical enzymes** were 2% above the level in the first half of 2003. Sales of **detergent enzymes** were 1% higher than in the equivalent period last year, and even higher calculated in local currencies. Sales of **other technical enzymes** rose by 4% despite very negative exchange rates. Sales of enzymes for the production of fuel ethanol and for the textile industry have grown nicely.

Enzymes for baking and brewing affected by slimming diets



Sales of **food enzymes** were 1% higher than last year. Measured in local currency terms, the sales growth was considerably higher. Sales to the baking industry continue to be negatively affected and sales to the brewing industry positively affected by low-carbohydrate slimming diets in the USA. In the second quarter, sales of baking enzymes stabilised, while sales to the wine and juice industry started earlier this year than last year.

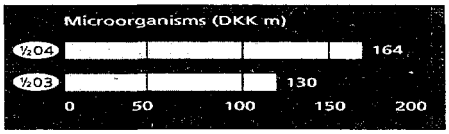
Stock-building helps to increase feed enzyme sales in second quarter



Sales of **feed enzymes** increased by 17%. Calculated in local currencies, sales growth is significantly higher as an increasing proportion of sales is in USD and USD-related currencies.

In the second quarter of 2004, sales of feed enzymes rose by a full 34%, though this was partly due to stock-building by distributors.

Sales growth in microorganisms affected by acquisitions and fall in the dollar

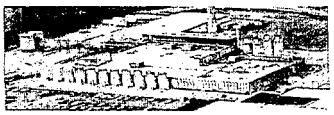


Sales of **microorganisms** rose by 26%. Growth has been positively affected by the full-year effect of the purchase of the activities of Roots last year, but negatively affected by movements in the dollar exchange rate. Organic growth is above 10%. The plant care business area within microorganisms is seasonal, with most sales in the first half of the year. ■

1979-1989

1979 Factory in the USA

We open an enzyme factory in Franklinton, North Carolina, USA.



1981 Mads Øvlisen takes the helm

Dr Knud Hallas-Møller retires and Mads Øvlisen takes over as President and CEO.

1989 Factory in Brazil

It's love at first sight when Victor Barbosa, former film director and pilot, sees the piece of land where he's to build the factory from his aeroplane. Eighteen months later the first enzyme is produced and sold.

1989 A big company

Novo Industri A/S and Nordisk Gentofte A/S merge to become Novo Nordisk A/S.

1992-1998

1992 Novo Nordisk Biotech

Novo Nordisk Biotech (later Novozymes in Davis) is opened in Davis, California, with Glenn Nedwin at the helm.

1994 First environmental report

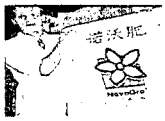
In 1994 we are one of the first companies in the world to publish an environmental report. A social report follows in 1999.

1998 Factory in China

A brand new enzyme factory is finished in Tianjin. When the time comes to hire employees, thousands of applicants turn up. Unfortunately, only 40 can be taken on and many have to go home disappointed.

1998 NovoGro®

The new factory in China means that Danish, American, Brazilian and Chinese farmers are all receiving free NovoGro.



1999-2000

1999 3,000 employees

For the first time, more than 3,000 employees are working with enzymes.

2000 Enzyme sales top DKK 5 billion

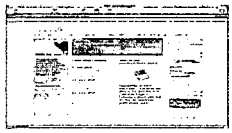
In 2000 enzyme sales top DKK 5 billion for the first time.

2000 Novozymes

Novo Nordisk splits into three independent companies: Novo A/S, Novo Nordisk A/S and Novozymes A/S. Steen Riisgaard becomes President and CEO of Novozymes.

2000 Enzymes online

Novozymes' new e-commerce website allows customers to buy enzymes online for the first time.



2001-2003

2001 Microorganisms

Novozymes acquires Sybron Biochemicals in the USA, so laying the foundations for Novozymes' microorganisms business in Salem.

2001 Environment-friendly petrol

Novozymes in Davis signs a contract with the US government to produce enzymes that can convert biomass into environment-friendly fuel.

2003 Successful alliance

DSM and Novozymes agree to continue and expand the strategic alliance in feed enzymes after the US authorities approve DSM's takeover of Roche Vitamins & Fine Chemicals. The partnership has been the driving force behind the expansion of the markets for feed enzymes in Europe, Asia, North America and Latin America.

Head of IR Michael Steen-Knudsen was completely inundated with phone calls and e-mails when Novozymes was listed on the Copenhagen Stock Exchange in November 2000. But all the effort paid off: the offer was 15 times oversubscribed.

When Novozymes came to market

90 investor meetings in 20 cities, 400 phone calls, 1,000 e-mails, countless internal meetings – these were the harsh realities of our stock market launch in November 2000. Today Novozymes is one of the best-performing stocks on the exchange.

Four years ago Novozymes as an independent company and an independent stock was still in the making. Novo Nordisk's enzyme business was busy preparing to cut the cord and courting investors.

"Launching the new company on the market was by no means easy," recalls Michael Steen-Knudsen, head of Investor Relations (IR) and the driving force behind the listing in 2000.

Defied categorisation

"One of the biggest jobs, quite literally, was the prospectus, which comprised several hundred pages and was difficult

to piece together," he continues. "Another major challenge was to paint a clear picture of Novozymes as an enzyme business. Investors like to pigeonhole companies and compare them with similar businesses, but Novozymes didn't really fit into any of their categories. Novozymes could equally well be classified under chemicals, biotechnology or food ingredients, so it was important to identify some key characteristics to which investors could relate."

Novozymes' investors at the end of 2003

- Novozymes had around 55,000 investors
- Novo A/S held 25.5% of our shares
- Other institutional investors held around 65%
- Private shareholders held around 9%

But all the effort paid off: the offer was 15 times oversubscribed, Novozymes is now one of the best-performing stocks on the Copenhagen Stock Exchange, and a large number of our shareholders are based outside Denmark.

Meetings with investors from around the world

This high proportion of non-Danish investors makes Novozymes very different to its peers in Europe. According to the IR team, our highly international investor base is due to meetings, meetings and more meetings. Each quarter the team travels around on roadshows to London, Edinburgh, Paris, Frankfurt, Stockholm, Helsinki, Boston, New York, Toronto, Montreal, San Francisco and Chicago – and since last year their travels have also taken in Australia, Singapore and Tokyo.

Investor contact in the USA

"With our new location in the USA we have got closer to the world's largest capital market, and this has already opened doors to investors that we had never heard of before," says Thomas Kudsk Larsen, who after just a few months in the USA has been able to double the number of investor meetings. Thomas joined the Investor Relations team in Denmark in 2001, but relocated to the USA in March to increase awareness of Novozymes among investors and financial analysts and to coordinate efforts with the media and biotech organisations.

A good knowledge of the investors and their cultural differences is essential, and some things have to be presented differently, explain the two travellers in the IR team, who spend 60-70 days a year in transit meeting investors all over the world. The strategy is the same as it has been since the introduction to the stock exchange – to try to hold as many meetings with investors as possible. ■

Thomas Kudsk Larsen from the IR team has relocated to the USA to increase awareness of Novozymes among American investors.

October 27, 2004
Q3 corporate financial statement to be published.

The Zymes is published by Novozymes A/S and distributed to shareholders, the press, business connections, etc. in English and Danish. **Print run:** 33,400 Danish and 3,000 English. **Named publisher:** Michael Steen-Knudsen. **Editors & text:** Anne Thommesen, Annegrethe Møller Jakobsen, Thomas Kudsk Larsen and Bo Øksnebjerg. **Layout & production:** Quote Grafik. **Print:** Salogruppen A/S. **Photos:** Cristian Barnett/Real IR, Claus Boesen and Willi Hansen. **Illustrations:** Per Diemer and Claus Lunau. **Translation & proofreading:** Borella projects. **Address:** Novozymes A/S, Krogshøjvej 36, 2880 Bagsværd, Denmark. Tel. +45 8824 9999. Fax +45 8824 9998. **E-mail:** thezymes@novozymes.com. No. 2004-29460-01.

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Unlocking the magic of nature

THE ZYMES

NOVOZYMES' SHAREHOLDER MAGAZINE · NO. 2 · SEPTEMBER · 2003

Growth continues

Half-year brings excellent figures – record year in sight.

Novozymes can show splendid half-year net profits of DKK 361 million compared to DKK 270 million for the same period in 2002. This represents an increase of 34%, and for the whole year Novozymes expects growth of 13% compared to last year.

Sales of enzymes to the detergent industry are once again on the rise (calculated in local currencies), while developments in feed enzymes are particularly promising. Here, sales rose by 19%, and an important strategic alliance for Novozymes in this sector looks set to continue. The Dutch company DSM is in the process of taking over Roche Vitamins. Assuming that DSM obtains approval of the agreement from the US Federal Trade Commission, the present alliance will continue, but between Novozymes and DSM.

General sales rose by 5% to DKK 2,840 million from DKK 2,715 million in the first half of 2002. Calculated in local currencies, the sales increase was 16%, which means that exchange rate movements had a negative effect of no less than 11%. ■

Novozymes well rooted

Novozymes has continued to expand its new business area of industrial microorganisms.

The acquisition of US company Roots heralds a sharper focus on the market for products for golf courses, sports facilities, nurseries and landscape gardeners.

Roots is the fifth acquisition in industrial microorganisms in two years. Its main markets are the golf and sports turf industry and nurseries. Combined with Novozymes' volumes and technological know-how in microorganisms, the plan is to supply care products and biologically produced fertiliser for greens on the world's golf courses. The market is substantial in both Europe and the USA. EVP Sales & Marketing Peder Holk Nielsen believes that there is a global trend towards reduced spraying with chemical pesticides and fertilisers. This is opening up the market for the company's biological products.

"Roots will give us new opportunities to achieve critical mass in plant care," he says. "The acquisition will give us a broader product range and significantly strengthen our distribution in both the USA and Europe." ■

EVP Sales & Marketing Peder Holk Nielsen has high hopes for the acquisition of Roots, which produces and sells biological care and fertiliser products, mainly for golf courses.

Novozymes pays you back

In 2002 Novozymes generated free cash flow before acquisitions of DKK 847 million in 2002 and is expected to generate DKK 800-900 million in 2003.

So what happens to all this money?

Put simply, there are two options: keep the money in the business or pay it back to shareholders.

Keep the money in the business

In February 2003 Novozymes told shareholders that it does not expect to make any major investments in expanding its production plants in 2003-05 because it believes there is still potential to optimise its existing facilities. So money is not needed for new factories.

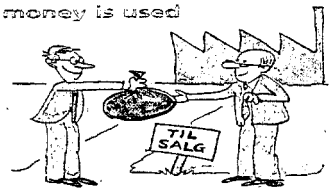
Another option is to repay debt, but Novozymes has relatively limited borrowings so there is not much scope here either. The final option is to buy up other companies, and Novozymes has already made six acquisitions in 2001-03. Acquisitions are a priority for the management but will be made only if they can add value for the shareholders.

Pay it back to shareholders

Since Novozymes was listed on the stock market, it has increased its dividend twice, paid three dividends and announced four share buy-backs. Almost DKK 1.3 billion has been paid back to shareholders who have chosen to put their faith in Novozymes.

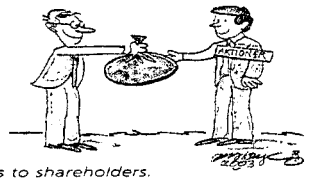
Thus acquisitions enjoy high priority but, if there are no major targets on the horizon, the money will head back to shareholders in the form of dividends and/or buy-backs, which help to increase the value of the stock. ■

How the money is used



Acquisitions.

Share buy-backs.



Dividends to shareholders.

novozymes®

Unlocking the magic of nature

A vital debate

At Novozymes we are keen to promote debate about genetically modified organisms (GMOs) and food. Novozymes has a long tradition of openness and dialogue, and experience tells us that we should continue to pursue this line when it comes to GMOs and food.

We have now built up 20 years' experience of working with gene technology. Since Denmark introduced the world's very first gene technology legislation in 1986 we have produced industrial enzymes using genetically modified microorganisms.

We grow these GMOs in large tanks and then harvest the enzymes they produce. It is the enzymes that we are after – in this context the GMOs are simply tools. But they are very important tools, because they are efficient and they make it possible to produce enzymes specially tailored to the processes in which they are to be used – for example in the food industry.

For us there is no doubt that enzymes produced with the help of GMOs have both environmental and technological benefits. They make it possible to produce more while making less of an impact on the environment.

We know from our customers that some feel under varying degrees of pressure not to use enzymes from GMOs. They fear consumers' disapproval – as reflected in opinion surveys over many years.

Novozymes and other raw material suppliers need to keep plugging away, and we need to have many more on board from every part of the production chain – first and foremost the food producers but ideally also from the retail trade.

We need to tell people how the use of GMOs reduces the consumption of both raw materials and energy and minimises the use of chemical additives. It is unlikely that this will mean lower-quality food for the consumer – and it may help to make daily shopping and food preparation a little easier and less stressful.

This is an issue and a debate that everyone should approach with an open mind. ■

Kind regards,
Steen Riisgaard,
President and CEO

Facing a tough issue

Novozymes is currently helping to find out why five wells near the site in Franklinton, North Carolina, have a high nitrate content.

Wastewater from the site may be behind these high nitrate levels, but the slow movement of groundwater in the region means that there are several other possible sources of nitrogen in the area. Over the summer Novozymes has worked with the environmental authorities to identify sources of pollution and figure out the best course of action for the future.

"In line with our philosophy of the Triple Bottom Line – which brings together environmental, social and financial responsibility – Novozymes takes its responsibility to its neighbours and the local community very seriously," says Lee Yarbrough, president of Novozymes North America.

What is Novozymes doing to help?
Novozymes got in touch with those neighbours whose well water was to be tested for a high nitrate content. In the spirit of neighbourliness Novozymes offered them bottled water while the tests were under way and is still supplying water to those whose wells did contain elevated nitrate levels. Novozymes is in constant contact with the authorities and local inhabitants to ensure an open and direct approach to tackling the problem. ■

Novozymes aims high

Novozymes is in the midst of a major efficiency drive which will affect half of the group's 3,700 employees and save the company expansion costs of DKK 1 billion.

Improved technology and knowhow mean that Novozymes' researchers can get microorganisms to produce larger quantities of enzymes than ever before. The production of enzymes will also be more focused than before in the sense that enzyme products can be tailored to customer needs at the very end of the process ('late customisation'). One goal for the future is not only to reduce lead times but also to minimise the number of enzymes held in stock.

This increased efficiency is enabling Novozymes to keep the promise it made to the stock market back in 2000: to keep capital expenditure no higher than depreciation charges. This promise now stands through to 2005.

"We'll have to work hard to keep this promise," says CFO Per Falholt, considering the challenges ahead. "We would like to see a more efficient approval process for our food and feed products, especially in Europe, and switching researchers between projects is another challenge."

Novozymes' promise to the stock market means that free cash flow this year will be in the region of DKK 800-900 million, so the money will be there for more acquisitions, share buy-backs and/or dividends. ■

Novozymes improves its microorganisms so that they produce more enzymes. The improved microorganisms (bottom) produce more enzymes than traditional microorganisms (top).

Enzymes for pet food

Novozymes teamed up with Roche Vitamins to market enzymes for animal feed back in 2001, and at the beginning of 2003 the alliance was extended to include pet food.

Roche has a global strategy for growing sales to the pet food industry, and the alliance with Roche gives Novozymes a well known and expert partner in a relatively new business area.

"Our enzymes for pet food are now sold exclusively through Roche, and I believe that Roche's sales channels and broad product range give us the best possible coverage," says Maria Yolanda Andersen, who heads Novozymes' team in the area.

Enzymes for pet food are currently used primarily to enhance their flavour. ■

Enzymes bring growth

Business was down for South African fruit juice producer Associated Fruit Processors – but then it started using enzymes.

South African fruit juice producer Associated Fruit Processors (AFP) has Novozymes' enzymes to thank for staying in business. In 1997 the company switched to using enzymes to extract apple juice and the following year production grew by 20%.

AFP's director Johan de Kock says that the introduction of modern technology saved the company:

"If we had not changed over to more advanced technology a few years ago, we would not have been able to survive in today's economic climate. New enzyme technology gave us the edge."

AFP is now working with Novozymes Switzerland on optimising the processing of fruit into juice. "Enzymes always have been a major cost item for us, but they have proven to be cost-efficient even in times when imports to South Africa were expensive due to a weak local currency," adds Johan de Kock, who is looking forward to trying new products from Novozymes. ■

Enzymes are saving South African fruit juice producer Associated Fruit Processors money, says Johan de Kock (centre).

Time for action

There is a need for political support, both financial and moral, for biotechnology.

This is the message from Novozymes' CEO Steen Riisgaard, who is also vice-chairman of EuropaBio, the European Association for Bioindustries. In April he attended the BioVision conference in Lyon where the appeal from biotech industry leaders to Europe's politicians was formulated.

BioVision adopted a number of recommendations for the European Commission. These include benchmarking European countries against other OECD countries in the development of a bio-based economy and establishing a vision and roadmap for "white biotechnology" in Europe. A real effort needs to be made to promote public awareness of and support for biotechnology.

"Everyone has a right not to do something and to say no, but if we say no to white biotechnology we are also saying yes to continued pollution and continued heavy consumption of petrochemicals," says Steen Riisgaard.

Modern biotechnology is divided into three different areas: red, green and white. Red biotechnology is that used in the pharmaceutical field. Green is primarily about plants, such as GM sugar beet, corn and rape. White biotechnology is about biological processes and products. ■

Dialogue with suppliers

Novozymes arms purchasers with social questionnaire.

Novozymes has been evaluating its suppliers' social performance since the beginning of 2003. Purchasers worldwide are liaising closely with suppliers and asking them to answer a series of questions on social issues.

"We're not out to save the world, but we would like to know where our suppliers stand when it comes to social responsibility," says Rikke Jarvad Netterstrøm from Novozymes' Sustainability Development Center.

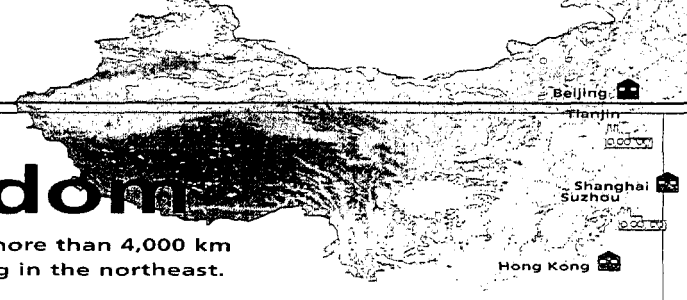
Each year Novozymes spends more than DKK 500 million on raw materials for enzyme production. It is therefore important for suppliers worldwide to understand Novozymes' social values.

To kick-start this dialogue Rikke Jarvad Netterstrøm has armed all of Novozymes' purchasers with a special questionnaire: "We're sending the questionnaire to a number of our most important suppliers, asking them to complete it and then following up by contacting them again afterwards."

"We're looking to engage in a dialogue with our suppliers," says Rikke Jarvad Netterstrøm. "We aim to take account of the varying conditions and legislation in each country."

35% of Novozymes' raw material costs were covered by the scheme after six months, and Novozymes aims to have 80% covered during the course of 2004. ■

Novozymes' global purchasers (from left): Henrik Petersen, Ida Pace, Rikke Jarvad Netterstrøm (Social Responsibility team), Rong Li and Aristedes Tadeu Gianello.



The middle kingdom

Mighty is the Chinese market, especially the area stretching more than 4,000 km along the coastline from Hong Kong in the south to Shenyang in the northeast.

This area is the economic engine behind the world's most populous nation. China is divided into 32 administrative areas, of which 22 are actual provinces. It is the big cities on the east coast that are behind the country's annual GDP growth of 7-8%, while the plains and mountains of central and western China still feature widespread poverty and stagnation.

The average Chinese earned USD 890 in 2001 but on the east coast things are better. Regions like Shanghai (USD 3,230), Beijing (USD 2,140), Tianjin (USD 1,950) and Guangdong (USD 1,340) lie well above the national average. The opportunities for making money in these areas mean that the cities play host to as many as 50 million migrant workers hoping to earn money for their families back in the countryside.

Thanks to the Communist-controlled transition to a kind of market economy, there is everything to suggest that growth rates will hold up in the years ahead. Foreign investment in China has increased fivefold in the last decade, and most recently the SARS scare helped the Chinese authorities to recognise that openness and increased international cooperation are the way forward for sustained economic development.

Industries like clothing and textiles are being transferred from state ownership to private entrepreneurs, making the market very lucrative for foreign players.

30 years in China

Novozymes has been in China since 1972 and its business there has grown steadily over the years. 1997 was another landmark year, heralding the opening of the plant in Tianjin, 150 km southeast of Beijing, where Novozymes has its Chinese headquarters.

In recent years production has been stepped up to match the rates of growth typical of China's eastern regions – growth that will in all probability continue in the years ahead.

"The Chinese market has overtaken Japan to become our second-biggest market after the USA," says EVP Sales & Marketing Peder Holk Nielsen.

Facts about China
Number of inhabitants:
1.3 billion, of whom one third in the cities and two thirds in rural areas
Currency: Renminbi (RMB)
Internet users:
33.7 million (1997: 400,000)
Key export goods:
Textiles, clothing, shoes, toys, machinery and equipment, weapon systems, minerals and chemicals
Foreign direct investment:
2002: USD 50 billion
1992: USD 11 billion
Sources: World Bank, IMF and Chinese trade ministry

He estimates that Novozymes commands 60% of the Chinese market for industrial enzymes – a market that is complex and demands good local insight.

"We operate two brands in China: a low-price brand called Zuhong, which does well in many areas, and a Novozymes brand that signals foreign quality," Peder Holk Nielsen explains.

This dual brand strategy is unusual but just one of many examples of how both resources and in-depth local knowledge are needed to make money and get established in China. Competition, especially from local companies, is fierce.

Looking for partners

It is important to build up and maintain a personal relationship with customers, and in recent years the enzyme market has featured consolidation and difficult conditions for new players. Novozymes China is open to partnerships with local and international players to protect and increase its market share. Hence Novozymes has entered into a partnership with local company Hongda in the city of Suzhou.

From the outset Novozymes has concentrated both on having a good and open relationship with the local authorities and on having a well trained and dedicated workforce in the major cities in which the company is represented.

"Denmark and Danish companies generally have a good reputation in China, and at Novozymes we're working hard to maintain good relations with representatives of the city councils in Tianjin and Beijing," says Peder Holk Nielsen.

Fruitful area

On the research side there are many challenges when developing applications for enzymes.

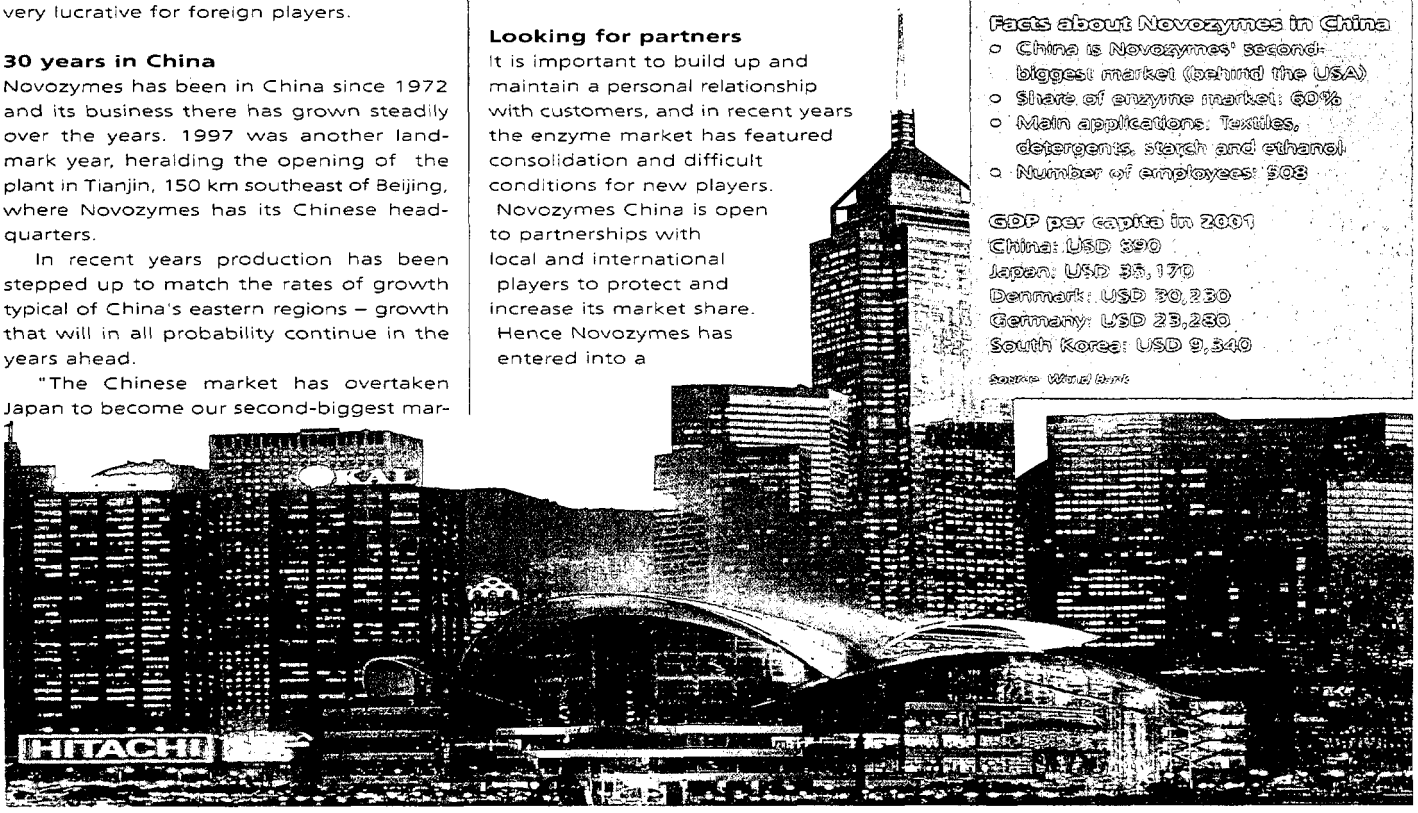
China's southernmost provinces are home to 25% of the entire planet's biodiversity – an amazingly fruitful area and a potential source of great knowledge and research.

Another challenge is to find applications for Novozymes' enzyme products in the preparation of fabrics:

"The Chinese like to wear fabrics that are a mixture of linen and cotton, and this requires a different type of preparation to something like denim," says Peder Holk Nielsen. "This is something we're working on." ■

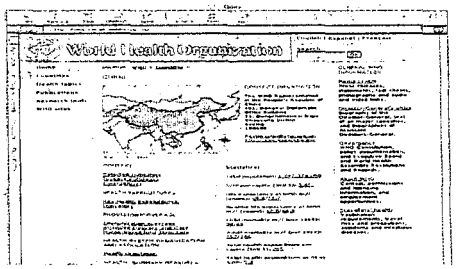
Facts about Novozymes in China
- China is Novozymes' second-biggest market (behind the USA)
- Share of enzyme market: 60%
- Main applications: Textiles, detergents, starch and ethanol
- Number of employees: 508

GDP per capita in 2001
China: USD 890
Japan: USD 35,170
Denmark: USD 30,230
Germany: USD 23,280
South Korea: USD 9,340
Source: World Bank



Life after SARS

The WHO has lifted its warnings about travel to and from China and no further cases of the mystical flu-like disease have been confirmed since mid-June.



Information on diseases can be found on WHO's website.

Throughout the spring Novozymes worked tirelessly to prevent infection and panic among employees and customers of Novozymes China. The management of Novozymes China presented a united front and offered employees separate transport and a chance to stay home from work if worried about their own or a family member's state of health.

Novozymes also donated money to the Red Cross to help quarantined hospitals and did everything to help the local community, reveals Weiming Jiang, president of Novozymes China.

He hopes that the lesson of the epidemic and the way in which it was tackled can be used to brighten China's future: "Maybe SARS will lead to better communication between citizens and authorities." He could very well be right.

At the end of June the Chinese health minister told other Asian health ministers that cross-border cooperation and communication need to be stepped up. There was also an unusual comment in the *People's Daily* saying that the Chinese media should have more scope to scrutinise the government and civil servants' actions and inactions.

Warning came late

The Chinese authorities confirmed the first case of SARS on November 16, 2002 in Guangdong Province but it was not until three months later that the WHO could place the disease on its official warning list of infectious and life-threatening epidemics.

SARS has led to a drastic drop in sales in the airline and tourist industries, and even if there are no further cases of SARS over the next few months, it may be a long time before the situation normalises in Southeast Asia and China in particular.

Fortunately SARS has had little impact on Novozymes. No employees were directly physically affected and sales did not suffer much during the months of uncertainty.

"We've seen a decrease in sales of brewing enzymes because the Chinese went out less than normal during the SARS period," says Michael Steen-Knudsen, head of Investor Relations. "We expect sales of these enzymes to return to previous levels. Otherwise the epidemic has not had any major impact." ■

Weiming Jiang, president of Novozymes China, is hoping for better communication between citizens and authorities after the SARS scare.

Novozymes named among China's best

Out of 68 companies with 18,714 employees, Novozymes has been named the fifth best employer in China in 2003, just ahead of Novo Nordisk in sixth place.

The study was carried out by Hewitt Associates and Harvard Business Review China, which unveiled their list of the best employers in Asia in May.

More than 500 people now work for Novozymes in China, and sales are growing.

"We have a very talented management team and many young and dedicated employees who not only do their jobs well but also continue their education after hours, especially in English and business studies," says Peder Holk Nielsen, EVP Sales & Marketing and chairman of Novozymes China.

Another prize followed in June when Tianjin Environmental Protection Bureau made Novozymes China number one of a total of ten winners of its prestigious new environmental prize, which recognises the businesses in the province with the best environmental performance. ■

Novozymes' employees are playing a key role in making Novozymes one of China's top companies.

Strong underlying growth continues

Key figures, first half-year	2003		2002		%
	DKK m	Euro m	DKK m	Euro m	change
Net turnover	2,840	382	2,715	365	5
Operating profit	458	62	429	58	7
Net financials	44	6	-52	-7	-
Profit before tax	502	68	377	51	33
Net profit	361	49	270	36	34
Operating profit margin	16.1%		15.8%		

1 euro = DKK 7.43

Sales rose by 5% to DKK 2,840 million from DKK 2,715 million in the first half of 2002. Calculated in local currencies, sales rose by 16%; the exchange rate movements have thus had a negative impact of no less that 11%. Adjusted for acquisitions and minor one-off items, the sales growth calculated in local currencies was 13-14%.

Operating profit increased by 7% to DKK 458 million from DKK 429 million and the operating profit margin was 16.1% compared to 15.8% in 2002. Profit before tax rose by 33% to DKK 502 million from DKK 377 million in 2002 and net profit rose by 34% from DKK 270 million to DKK 361 million. Earnings per share were thus 5.02, an increase of 37%. Free cash flow, including acquisitions, was DKK 335 million compared to DKK 201 million in 2002. Excluding acquisitions, the figure was DKK 457 million compared to DKK 304 million in 2002.

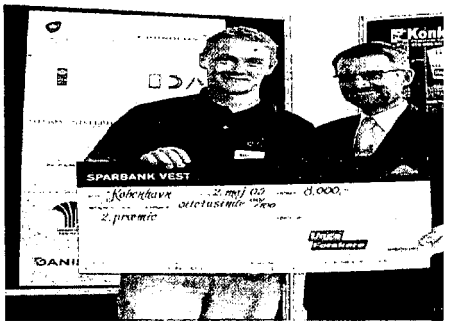
Outlook for 2003

Net profit is expected to increase by 13% (compared to the previous outlook of 10%) due to favourable developments in net financials, while the growth in operating profit is still expected to be 3-5%. The outlook for free cash flow before acquisitions has been adjusted upwards to DKK 800-900 million compared to DKK 750-850 million previously. ■

Novozymes around the world

In the bag

Young architects Susanne Skov and Marie Juul Christoffersen ran off with the first prize of DKK 77,777 in Novozymes' big bag competition, a big bag being the white sack in which Novozymes transports its enzymes. The winning entry – six smart hats that can be used for role plays in the workplace – was one of no fewer than 176 ideas for alternative uses for a big bag. There was no shortage of original ideas, such as the wedding dress that won second prize. ■



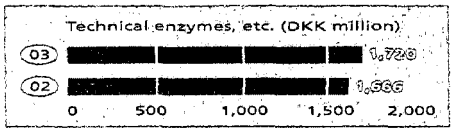
Top marks for budding researcher

When Thomas Rasmussen was doing his final-year school biology dissertation on problems with diacetyl in beer, he searched for information about the substance on the Internet. And hey presto – Novozymes popped up with its enzyme Maturex® L. Thomas Rasmussen's experiments gained him the highest possible mark of 13 for his dissertation and a second place in the Danish Young Researchers 2003 competition. ■

Fungi in the Thai rainforest

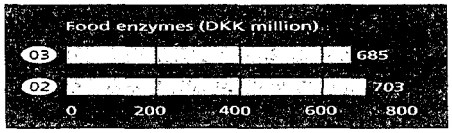
Novozymes has sponsored a trip to Thailand by PhD student Stig Rønhede to study fungi in the rainforest. The fungi in question live inside small insects and are found throughout Thailand's extensive rainforest, in which new species are discovered every year. What interests Novozymes is partly the substances that the fungi secrete after the insect is dead and partly the enzymes that enable the fungus' sprouting spores to get inside the insect. Maybe finds like this can be used to produce the environmentally friendly products of tomorrow. ■

Progress in detergents



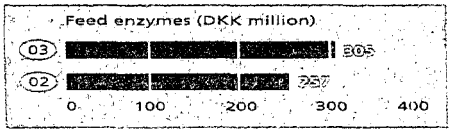
Sales of **technical enzymes** rose by 3%. Sales of **detergent enzymes** were 2% lower than in the same period last year, but calculated in local currencies, this represented a nice growth. Sales developed slightly more positively than expected, but were markedly affected by the lower exchange rates. Sales of **other technical enzymes** rose by 12% in spite of the negative effect of the exchange rates. Sales of enzymes for the production of fuel ethanol and for the textile industry continue to show high growth rates. ■

Weak dollar impact



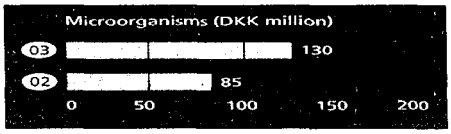
Sales of **food enzymes** were 3% lower than last year, significantly reduced by lower exchange rates, especially the US dollar. Sales to the baking industry grew nicely, while sales to i.a. the brewing industry were negatively affected by lower production (especially in China) and delayed sales due to the late wine harvest. ■

Important alliance



Sales of **feed enzymes** grew by 19%. The total market for phytase products is continuing to expand, boosted by Novozymes' alliance with Roche Vitamins. On July 23, DSM's acquisition of Roche Vitamins was approved by the European Competition Authority and the strategic alliance between Novozymes and Roche will continue with DSM as a new partner, assuming that DSM obtains the final approval from the US Federal Trade Commission. ■

Growth and acquisitions



Sales of **microorganisms** by Novozymes Biologicals rose by 46%. The majority of this growth can be attributed to the whole-year effect of company acquisitions in 2002 and the acquisition of Semco Bioscience with effect on February 1, 2003. On June 20, 2003, Novozymes acquired most of the activities in the company Roots, headquartered in Kansas, USA. This acquisition makes it possible to achieve critical mass in plant care. ■

All eyes on Asia

Novozymes has been supporting the Images of Asia cultural festival in Copenhagen. According to VP Stakeholder Communications Anne-Marie Skov, the festival aims to "get us to look at relationships and provide inspiration for how we tackle common challenges". ■

On show in the USA

This year for the very first time Novozymes had a booth at BIO, the world's largest biotechnology convention, held in Washington in June. Novozymes also donated USD 10,000 to the WWF as part of the drive to make a name for itself in the US biotech market. ■

Children on the move

In May Novozymes sponsored class 6A from Bagsværd Kostskole boarding school as they cycled, skipped and jumped to raise money for children in Eritrea. The children collected DKK 16,800. ■

Brazilian farmers learn about Novozymes

Last year 36 Brazilian farmers got answers to all their questions about Novozymes and biomass when Novozymes Latin America invited them to spend two days learning about the biomass they get for their fields. The seminar also served as a forum where the farmers could exchange views and discuss their concerns about everything from the environment to social development in general. ■

Novozymes helps save bird

Local farmers in the southern part of Yunnan Province in China have been working to save the beautiful Derbyan parakeet, which is held sacred by the locals but is close to extinction due to illegal trapping and trading.

The WWF has joined in the work, thanks in part to funding from Novozymes, helping the locals to put up nest boxes. ■

IR prepare for another of their roadshows, which take them right around the world. From left: Steen Riisgaard, Thomas Kudsk Larsen and Michael Steen-Knudsen.

What does Investor Relations do?

IR staff are often on the move and need to know every aspect of Novozymes' business.

As the name suggests, Investor Relations (IR) deals with contact with investors, both current and prospective. IR also handles day-to-day contact with the 18 equity analysts who closely monitor Novozymes. The IR department is responsible for compliance with the Copenhagen Stock Exchange's regulations and for compliance with internal communication policies. All presentation materials following financial reports – whether for teleconferences or investor meetings – are produced by IR, which also attends all such meetings. IR plans capital market days, arranges and hosts meetings with private investors, prepares presentation materials and takes part in industry seminars. IR holds a steady stream of meetings with investors. Each year our Executive Management and IR hold 250-300 meetings around the world. Each quarter 15-20 different cities in Europe and North America are visited to inform investors about our results.

Feedback to Executive Management

All this is to ensure that interest in the Novozymes stock is sustained and will be well known to those who are familiar with the stock market. Perhaps less well known is that IR is also responsible for drafting all financial press releases in conjunction with Executive Management. IR then presents these drafts at board meetings where the final approval is given. Giving Executive Management feedback from investor meetings is also an important task so that it is always up-to-date on how the stock market is thinking and what it makes of Novozymes.

Other duties include responsibility for the shareholder magazine in your hands, participating in working parties for the annual report and annual meeting of shareholders, maintaining the IR website on the Internet (www.novozymes.com).

Finally, IR's work is not just a matter of direct contact with players in the stock market – there is also a lot of homework that needs to be done. ■

Investors want openness

Better communication, transparency, personal meetings and presentations of strategic plans are future focus areas for investors. This is what IR experts told Danish financial newspaper *Børsen* when it named the best IR departments in Denmark.

Analysts rate head of Novozymes' IR Michael Steen-Knudsen highly, and he came in third in the category "Best person at investor relations". ■

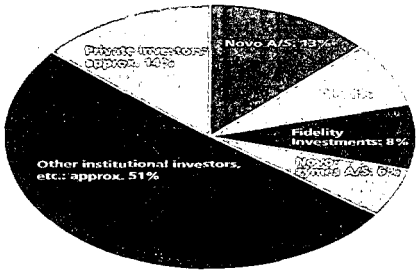
Novozymes has many owners

Novozymes currently has around 55,000 shareholders, of whom 35,000 are registered by name. The exact number of shareholders is not known but, since we know the number of Danish accounts to which we pay dividends, this figure is a good guess.

Of these 55,000 shareholders, around 300 are institutional investors and the rest are private investors. By far the majority live in Denmark.

Our principal shareholders – in other words those that hold more than 5% of our B shares – are shown in the diagram.

Various Danish and foreign institutional investors hold between 1% and 4.9% of our B shares, and there is also one private shareholder who just creeps into this category. All in all, institutional investors are estimated to hold 86% of our B shares and private investors the remaining 14%.



Shareholders by size of holding

Geographically, around half of our shares are held in Denmark and the rest abroad. US and UK investors in particular have large holdings in Novozymes but the company also has a number of major institutional investors in Asia. ■

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THE ZYMES

NOVOZYMES' SHAREHOLDER MAGAZINE · NO. 1 · FEBRUARY · 2004

12 steps closer to bio-based fuels

Novozymes has reduced the cost of turning plant waste into biofuels – not just ten-fold as promised but twelve-fold.

The number of cars on the roads has almost exploded worldwide. However, new advances mean that good news may still be on the way for the environment.

Novozymes has succeeded in designing enzyme blends that turn plant waste into sugars for fuel ethanol production more efficiently by improving both enzymes and production method. With funding from the US Department of Energy, Novozymes was aiming to reduce enzyme costs in this process by a factor of ten by the beginning of 2004 but actually managed to do so by a factor of 12.

Many cars in the USA already run on a gasoline blend where the non-biodegradable additive MTBE has been replaced with ethanol, derived primarily from corn. Several US states have banned MTBE, which, like ethanol, boosts the gasoline's octane count.

Novozymes' customers aim to replace the MTBE in gasoline with ethanol based on corn stover, etc. In the long term plant waste may be able to replace crude oil as a fuel.

There is still a long way to go before it becomes profitable to use plant waste in this way, but the potential is colossal. In addition to agricultural waste such as corn stover and rice straw, biomass from the forest industry such as branches, sawdust and paper may one day be able to replace crude oil in the production of not only fuels but also other useful products such as plastics, polymers and organic acids.

See how biofuels are produced on page 5. ■

Should *The Zymes* continue?

You could very well be reading the final issue of *The Zymes*. Whether the magazine continues is up to you, the reader. At Novozymes we think *The Zymes* is useful but will only produce it if it is actually read.

We will decide the fate of the magazine on the basis of the positive replies we receive.

So if you think that *The Zymes* should continue, please complete and return the enclosed postcard "YOU decide". If you plan to attend the annual meeting of shareholders, you can send it in the same envelope. Otherwise simply post the card.

You can also reply at our website: www.novozymes.com/youdecide ■

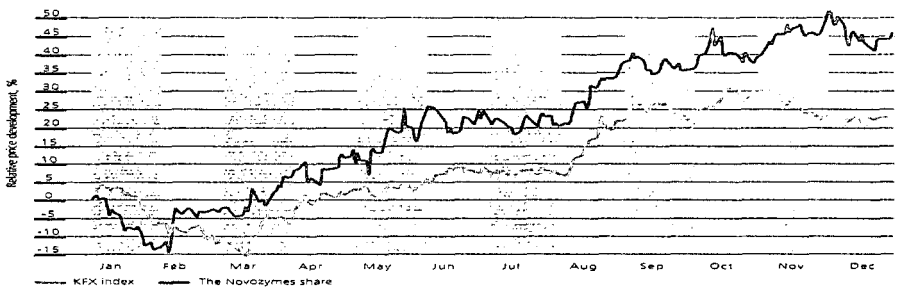
Strong share price performance

The Novozymes share had a good year in 2003.

The share price climbed 46% from DKK 148 at the beginning of January to DKK 215.50 at the end of December. The reasons for this healthy growth are partly a generally positive Danish stock market (the KFX blue-chip index gained 22%) but mainly Novozymes' strong results in 2003, attained despite deteriorating exchange rates. Many investors also gained a better insight into Novozymes' business during the year, helping to boost the share price.

At the end of 2003 Novozymes itself held a total of 5.9 million B shares, corresponding to 7.9% of its total share capital. ■

Novozymes A/S' B share in 2003



Share data 2003

- 13th most traded share in Copenhagen
- 36.4 million shares traded, against 29.3 million in 2002
- Share turnover DKK 6.3 billion
- Year-end market capitalisation DKK 16.3 billion

novozymes®

Unlocking the magic of nature

Politicians must take action

2003 was a great year for Novozymes. Growth in sales of biological solutions in local currency was the best since our stock market listing. But there is a need for change if we are to continue in this vein – not least to the benefit of the environment in Europe.

A fragmented EU, a lack of understanding and political will, and unfathomable environmental policies in Europe are blocking the road to a cleaner environment.

The debate on gene technology in Europe lacks focus and is holding back readily available biological alternatives to traditional and often harsh chemicals. We have been discussing gene technology for 20 years now, and for many years we have been united in the field to which Novozymes belongs, known by some as 'industrial biotechnology' and in the EU as 'white biotechnology'. It is about sustainable solutions where social and environmental responsibility goes hand in hand with financial performance.

It is important to differentiate the debate rather than tar everything with the same brush as is currently the case. The use of genetically modified (GM) production organisms in facilities like ours is a far cry from the growing of GM crops and research into stem cells. We are keen to take part in the debate but let us please consider each area on its own merits.

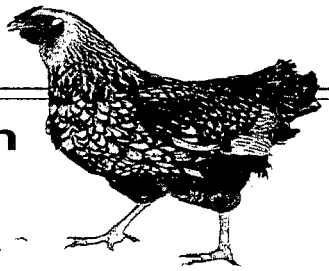
I would also urge industry and researchers to come up with more arguments and documentation so that the debate does not continue to be steered by emotion rather than fact.

Because legislation will be needed for the substitution of harsh chemicals with biological solutions to continue. While the USA and Japan have taken major steps to support industrial biotechnology, politicians in Europe have yet to define their policy in this area despite its potential. And time is running out – Europe is beginning to lag behind more far-sighted continents. ■

Kind regards,
Steen Riisgaard, President and CEO

Alliance brings growth

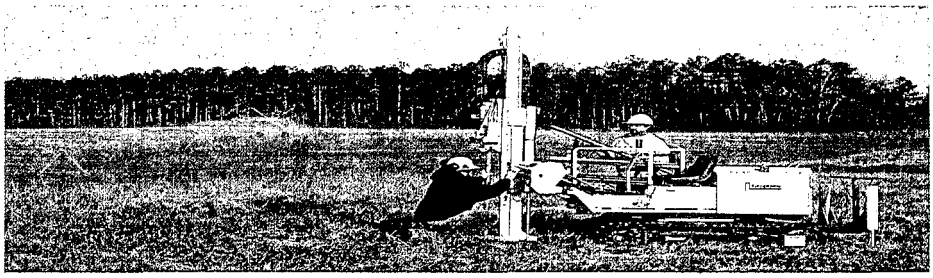
DSM's acquisition of Roche Vitamins was approved by the US Federal Trade Commission during the autumn.



At the same time Novozymes and DSM announced that they would be continuing the successful strategic alliance in feed enzymes that Novozymes had previously enjoyed with Roche Vitamins.

The alliance was strengthened by the inclusion of pet food and the Australian and Indian markets in the agreement in 2003 – and is expected to grow even stronger in the future.

So far feed enzymes have been used mainly for pigs and chickens, enabling them to make better use of the nutrients in their feed and produce less pollution. Feed enzymes account for a growing share of Novozymes' turnover. Sales have soared in the three years since the alliance started up. In 2003 sales came to DKK 636 million, equivalent to 11% of Novozymes' total turnover. This growth is due primarily to the enzyme phytase making a major breakthrough in markets outside Europe, especially North America, Asia and Latin America, where phytase is increasingly being seen as a competitive alternative to inorganic phosphates. ■



Novozymes carries out checks on groundwater around our site in Franklinton, North Carolina, to monitor the level of nutrients in the water.

More nitrate tests under way

In 2003 levels of nitrate exceeding the North Carolina quality standard for drinking water were detected in groundwater wells around the Novozymes site in North Carolina, USA. Novozymes is taking this situation very seriously and, together with the authorities, we will do all that we can to identify the sources and the extent of nitrate in the groundwater.

At this point in time we cannot eliminate Novozymes as a potential contributor to the elevated levels of nitrate. However, nitrates can derive from various sources, especially in an agricultural community such as Franklin County where Novozymes is located. Nitrates naturally occur in the groundwater and common sources of nitrate in groundwater are agricultural fertilisers and septic systems.

At the end of 2003 Novozymes delivered a preliminary report to the local environmental authorities, but more testing is required to assess the impact of nitrates beyond Novozymes' property boundaries. This additional testing is expected to be complete by September 2004. ■

More money for shareholders

Novozymes is faced with an unusual problem: the business is generating high levels of free cash flow, but what should we do with it?

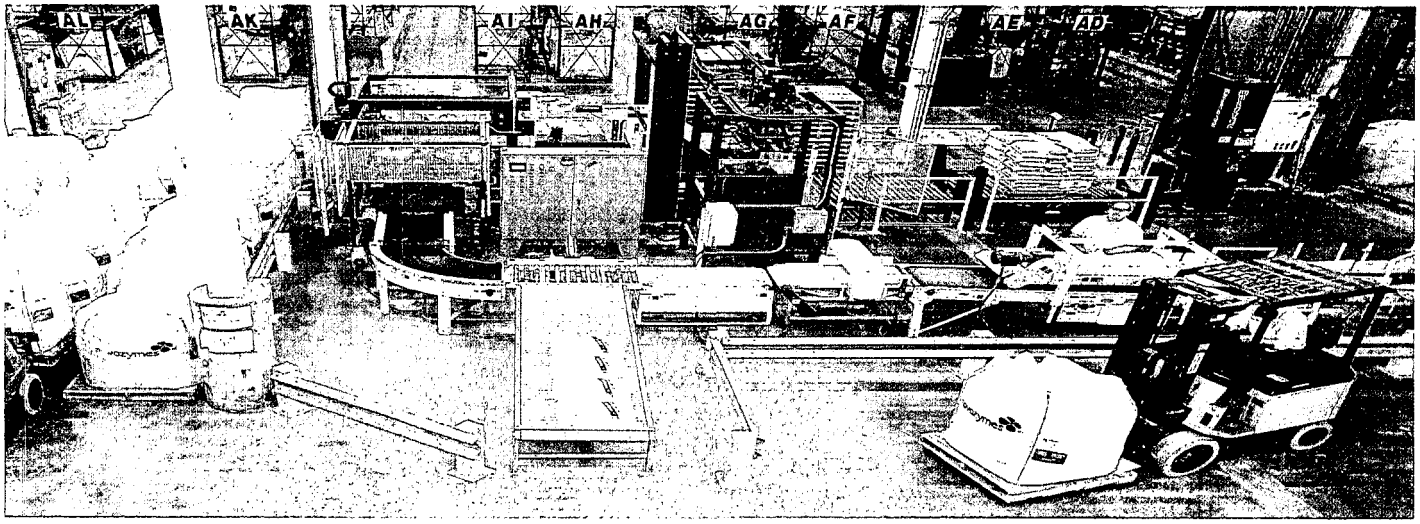
Novozymes' business model is generating high levels of free cash flow. Since sales growth can by and large be handled through productivity improvements, Novozymes has pledged to keep investments at or below the level of depreciation in 2003-2005. Instead free cash flow can either be used to reduce debt, be used to fund acquisitions or be repaid to shareholders.

In connection with the financial results for 2003, the Board of Directors resolved to propose to the annual meeting of shareholders that the dividend for 2003 be increased to DKK 219 million or 30% of the net profit for the year. This corresponds to DKK 3.15 per DKK 10 share outstanding, an increase of 40%. Furthermore, the intention is to pay out at least 30% of net profit in dividends in the future.

Shareholders will also benefit from plans to buy back more Novozymes shares: up to DKK 650 million in 2004 and a total of up to DKK 2.5 billion over the next 3-4 years. It will also be proposed that the share capital be written down by some of the shares previously bought back, so allowing further shares to be bought back. ■

How shareholders are being repaid

(DKK million)	2000	2001	2002	2003
Dividend for the year	124	146	162	219
Share buy-backs during the year	8	424	185	392
Total	**132**	**570**	**347**	**611**
% of net profit for the year	27	95	54	84
% of free cash flow	20	117	60	76



Forklift drivers, production planners and order bookers are just some of the many employees who have now been brought together to make customers even happier with Novozymes.

Novozymes manages customers' stocks

New organisation aims to make customers even happier with Novozymes.

Happy customers are loyal customers. And when customers want Novozymes to manage their stocks so that they no longer need to worry about ordering enzymes, we do just that.

Novozymes has now put itself in a better position to meet customers' growing demands. In 2003 some 300 employees were brought together in a new organisation called Supply Chain Operations. The idea is to finish and deliver enzymes even more quickly, in larger quantities and even more flexibly – and so get even closer to our customers.

A wide range of projects have been launched following this reorganisation. These include managing customers' stocks so that buying enzymes is as easy as turning on a tap and buying water.

"For the first time ever we now have an organisation focusing exclusively on our supply chain," says Thomas Videbæk, who heads the new area. "We're getting ready for the customer needs of tomorrow."

Companies are working closer and closer together these days. Our customers therefore have a say in how we produce, quality-assure, pack and deliver. ■

Stringent management of processes

One of the most important jobs for the new Supply Chain Operations is to predict accurately what we will be selling so that customers enjoy better service. Smaller stocks and smarter, faster, cheaper processes are the keywords in this context. ■

Order the annual report

The Novozymes Report 2003 can be downloaded from the front page of www.novozymes.com. You can also order a copy of the printed report on the website or by ringing +45 4442 2379. The printed version will be published on March 4 and will not be sent out automatically.

The Novozymes Report 2002 won Danish financial newspaper *Børsen's* Annual Report Prize 2003 and the prize for the best annual report from a company in the Copenhagen Stock Exchange's KFX blue-chip index when the awards were held for the 26th time during the autumn. ■

New products

Novozymes launched one feed enzyme, two food enzymes and three technical enzymes in 2003.

Better animal feed RONOZYME® P 5000 is an improved phytase used mainly for pigs and chickens. It enables them to make better use of naturally occurring phosphorus in their feed and so they grow faster and gain more weight per kilo of feed. The result: stronger bones and a cleaner environment, since ⅓ less phosphorus is released in manure. Phosphorus contributes to eutrophication in rivers, lakes and, to a lesser extent, the sea. Phytase accounts for the bulk of the global market for feed enzymes.

Fewer production stoppages Resinase® HT for the pulp & paper industry reduces the number of stoppages in production by removing excess resins and also improves the properties of the paper.

Saves energy Novozym® 51054 substantially reduces the consumption of energy in paper production.

Banishes stains Pectaway® for the detergent industry removes stains left by bananas, apples, tomatoes and vegetables.

Improves dough Gluzyme® Mono for the baking industry replaces some of the ascorbic acid and bromate normally added to bread and improves the dough as effectively as comparable enzymes already on the market but is much cheaper.

Keeps rye bread fresh Novamyl® SD for the baking industry is used in sourdough and is a niche product for a market in which Novozymes has not previously sold products. Sourdough accounts for 3-5% of the US bread market. ■

Sales move online

Sales of new products climbed from 17% of total sales in 1999 to more than 30% in 2003. More than ⅓ of all sales are now handled over the internet.

Novozymes won the 2003 Danish E-commerce Award for its site, which features seven different language versions and information tailored to individual customers and industries. ■

Production manager Cahit Taskýn from Akýn Tekstil in Turkey (right) uses several of Novozymes' enzymes in the production of textiles.

Green stamp for textile enzyme

An analysis by independent environmental research institute Öko-Institut e.V. in Germany has shown that Scourzyme® L can completely replace harmful chemicals in textile production.

The textile industry typically uses chemicals, vast amounts of water and high temperatures to remove natural impurities from cotton fibres.

Scourzyme acts as a natural detergent, cutting emissions to wastewater by 60%, and works at much lower temperatures, cutting energy consumption by 25%. The biological process is also 20% cheaper than the traditional chemical method.

Enzymes currently account for less than 1% of the market for textile chemicals, which is worth more than USD 15 billion. ■

Enzyme praised by US President

Scourzyme® L's sister product Bio-Prep® 3000 L won the Presidential Green Chemistry Challenge Award as an economical and environmentally friendly alternative to chemicals.

What our microorganisms are used for

Strengthening roots: The turf at sports facilities such as St Andrews Links and Celtic Park in Scotland and Taegu Stadium in South Korea now has stronger roots thanks to Novozymes' microorganisms.

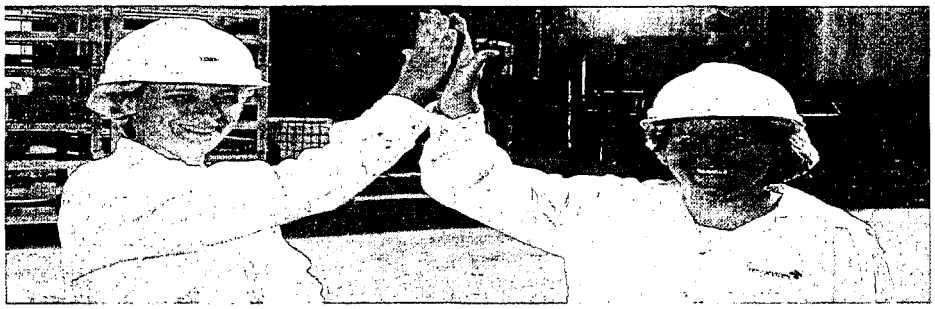
Turf is currently the largest market for biological plant care, but we also sell products to nurseries and landscape gardeners. The potential market is huge – biological plant care currently accounts for only a small proportion of the overall plant care market.

Cleaning up: Our bacteria are used to treat municipal and industrial wastewater and clean sewers.

Removing grease: The risk of slipping in an industrial kitchen is normally considerable due to airborne grease particles settling on the floor. Our harmless bacteria remove the layer of grease very effectively.

We also have products for cleaning drains, septic tanks and carpets. ☐

Measuring the sharpness of a knife in a kitchen from



Bernadette Silva (left) and Clarice Pereira are working successfully in production at Novozymes Latin America.

Success in a man's world in Brazil

Diversity in the workforce is under the spotlight in Brazil.

Clarice Pereira (36) and Bernadette Silva (35) have successfully entered a man's world at Novozymes Latin America, where until recently only men could wear the white helmet of the production worker and women were restricted to administrative and managerial posts.

Bernadette Silva spent a good two years working in administration before making the switch: "I'd spent 20 years doing administrative work and so it was a radical change, but I definitely feel much happier and more content now," she says.

In 2000 the spotlight was turned onto diversity in the workforce and equal opportunities. Pack sizes, dimensions and equipment had to be altered so that both men and women could work in production. Soon all functions can be performed by both men and women, and the number of female workers has risen over the last six years from 17 to 40 out of a total of 161 employees.

The UN's Universal Declaration of Human Rights has inspired other initiatives too: collaboration with an educational institution on employing people aged 15-18, and a change in the recruitment process to promote diversity, in particular the hiring of disabled employees. ■

Quarterly environmental and social reporting from now on

Last year Novozymes became one of the first companies in Europe to integrate its annual financial, environmental and social reports into a single fully audited report. According to a survey we conducted, it was a great success. In the future we will therefore be reporting data on environmental and social responsibility each quarter in the same way as our financial and commercial results, thus integrating social and environmental responsibility even more closely into the business. ■

Strategy group ensures sustainable development

A new strategy group referring directly to the Executive Management is to lay the strategic foundations for Novozymes' approach to sustainable development.

Representatives from all sites and business areas are now responsible for developing Novozymes' overall strategy for sustainability in line with our values and vision.

Thus the Executive Management is changing the organisation of work on sustainable development and the Triple Bottom Line from two committees and two strategies (one each for social and environmental responsibility) to a single committee and a single strategy.

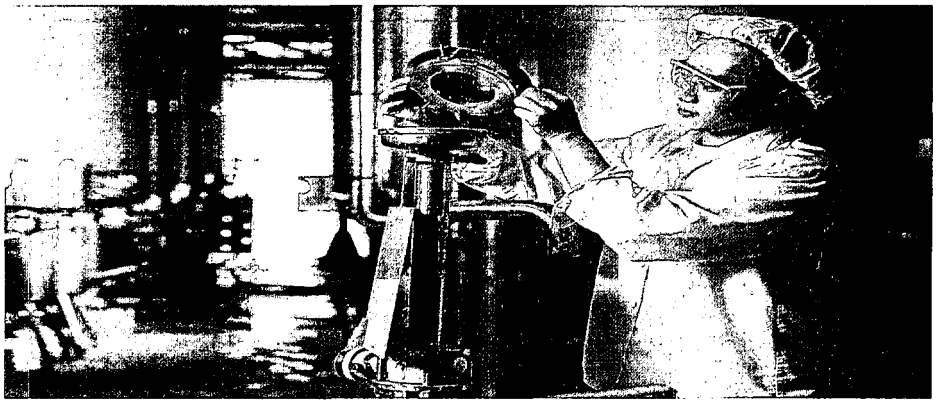
A Sustainability Development Center has also been set up to help the strategy group to develop and implement this strategy, report on projects and key performance indicators, and identify new trends that may impact on the strategy.

One important goal for this new initiative is to decentralise and integrate as many activities as possible into the line organisation and embed this work in the business. ■

VP Stakeholder Communications Anne-Marie Skov chairs the new strategy group.

Management to be measured on responsibility

From 2004 onwards Novozymes' Executive Management is also to be judged on its success in integrating environmental and social responsibility into the business when their annual bonuses are calculated. The idea is to ensure that the Executive Management constantly pursues Novozymes' vision of growing the business while simultaneously contributing to sustainable development.



Changing a dust meter filter as part of an extensive monitoring programme in Tianjin to ensure that dust levels are kept under control.

Focus on the environment in China

Mei Lin is responsible for the working environment at Novozymes in China, a field in which he has specialised for the last two years. Since there are few experts in this field in China, he visited Denmark in November to draw on the experience of 15 colleagues. He has brought this knowledge back to Tianjin where a team of three employees work on occupational health-& safety (OH&S), with a special focus on the risk of enzyme allergies and preventing occupational accidents.

One service unique to Novozymes in China is that all employees are offered a free annual health check-up by a doctor. The same service is also offered to employees elsewhere in the world since Novozymes' OH&S policy applies globally, however much local rules may vary. The guiding principle is that the more stringent of local rules and Novozymes' own standards must always be followed. Novozymes' OH&S standards in China generally exceed the standards required by the authorities.

However, the Chinese authorities are keen to improve OH&S standards and so they keep a close eye on what is being done by international companies like Novozymes.

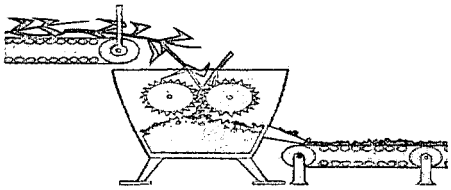
Deputy environment minister Wang Jirong came to visit our site in Kalundborg in Denmark during the autumn, only a year after environment minister Xie Zhenhua had done the same. The minister has since visited our site in Tianjin as well.

Xie Zhenhua has also advised others in China to visit us in Denmark to study our work. ■

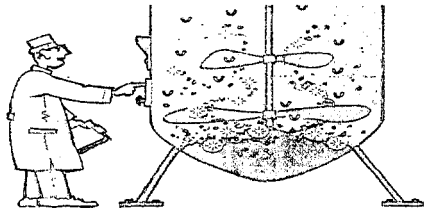
MAGIC MOMENTS

Enzymes turn plant waste into fuel

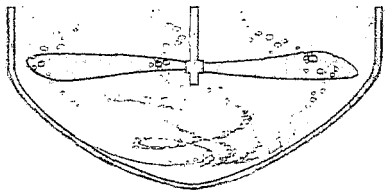
Plant waste arrives from farms
When corn is harvested, the stover (stalks) is currently treated as waste. In the future this stover could be used instead to produce fuel ethanol and other useful products.



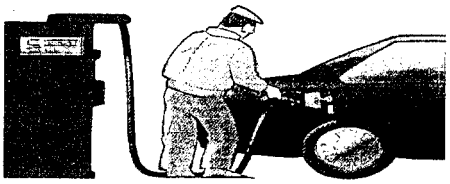
The stover is turned into a paste
The stover is chopped into very small pieces and treated with a weak acid at high temperatures and high pressure, turning it into a paste.



Enzymes turn the paste into sugars
Newly developed enzymes break down the stover's cell walls into sugars (glucose and xylose). It is especially the tough lignocellulose – the 'putty' of the cell walls – which the enzymes need to get to grips with.



The glucose is fermented into ethanol
Standard baker's yeast is used to turn the glucose into ethanol. For the process to be profitable, a way of using the xylose also needs to be found.



The ethanol is used as an environmentally friendly fuel
The resulting fuel ethanol can replace the non-biodegradable additive MTBE, since both boost gasoline's octane count. MTBE is being banned in more and more places, and many cars in the USA already use ethanol instead. In the long term plant waste may be able to replace crude oil in the production of fuels and maybe even be used in plastics, polymers and organic acids.

Key figures	2003 DKK million	2002 DKK million	% change
Net turnover	5,803	5,642	3
Operating profit	982	947	4
Net financials	33	-47	-
Profit before tax	1,015	900	13
Net profit	726	644	13
Operating profit margin	16.9%	16.8%	-
Cash flow before acquisitions	982	847	16
Free cash flow	800	575	39
Return on invested capital (ROIC)	15.0%	13.1%	-

Strong results despite less favourable exchange rates

2003 was a particularly good year for Novozymes, bringing success across the board. However, deteriorating exchange rates proved a major challenge and hit our results hard.

Sales grew by 12% in local currency and by 3% in DKK – exchange rate movements reduced sales growth by a good nine percentage points. Operating profit climbed by 4%, also substantially reduced by exchange rate movements. Some of these currency losses were clawed back under net financials, which generated net income of DKK 33 million. All in all, profit before tax and net profit grew by 13%. This corresponds exactly to the full-year forecast for net profit which Novozymes revised upwards on two occasions during the course of 2003.

Cash flow held at a high level throughout the year, and Novozymes also hit its 15% target for return on invested capital for the first time ever.

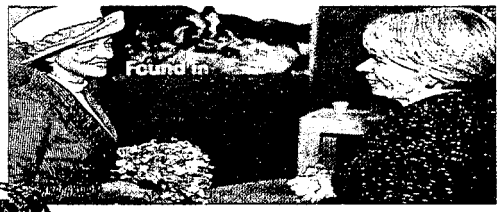
Sales are forecast to grow by around 4% in DKK and 8% in local currency in 2004. Operating profit is expected to rise by 4-5% while net financials are expected to generate net income of DKK 0-10 million. Net profit is forecast to grow by around 4%. Cash flow before acquisitions is expected to remain at a high level – DKK 750-850 million – and return on invested capital is expected to hold at around 15%.

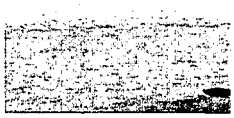
Novozymes is included in the consolidated accounts of the Novo Nordisk Foundation since the Foundation's holding company Novo A/S holds all A shares and 8,541,280 B shares in Novozymes A/S, corresponding to 25.5% of the total share capital and 67.4% of the votes.

Novozymes worldwide

Royals visit Novozymes

Prinsess Alexandra of Denmark visited Novozymes' stand and shook hands with VP Stakeholder Communications Anne-Marie Skov at the Scandinavian International Career and Education Fair in October.





Grand Duke Henri of Luxembourg visited Novozymes in October at his own request – accompanied by bomb dogs, legions of broad-shouldered bodyguards and a police escort.

And **Princess Sirindhorn of Thailand** showed an interest in Novozymes when fungus researcher Lene Lange opened the Bio Thailand conference in July: the princess made three pages of notes during Lene Lange's speech and asked to be sat next to her afterwards at lunch. ■

Career tips from Nobel laureate

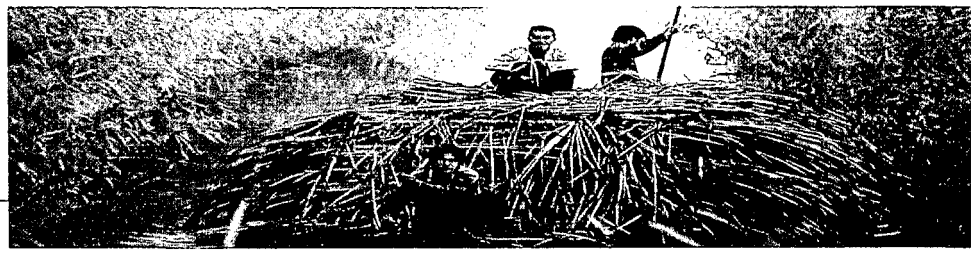
Novozymes trainee Christina Nielsen was given sound advice by Sydney Brenner, winner of the 2002 Nobel Prize for Medicine, at a conference celebrating the 50th anniversary of the discovery of the structure of DNA. The conference was arranged jointly by Novozymes, the British Council in Denmark and the Experimentarium science centre, which hosted it. In his speech Steen Riisgaard presented his views on the direction in which biotechnology is headed. ■

Best at sustainability – for the third time

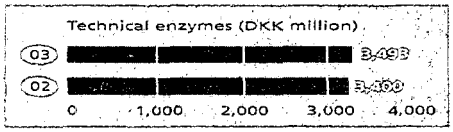
For the third year in a row Novozymes was named the most sustainable company in healthcare in Europe and in biotechnology worldwide by Dow Jones Sustainability Indexes, which ranks the world's top 2,500 companies for sustainability according to their ability to seize opportunities and manage risks deriving from economic, environmental and social factors. ■

Novozymes and WWF create unique wetland in China

The WWF has opened a new environmental learning centre in Beijing with support from Novozymes. The new centre has transformed a barren four-hectare wasteland area into a stunning wetland ecosystem demonstration site. Novozymes has been working with the WWF on protecting threatened species in China since 2001. ■

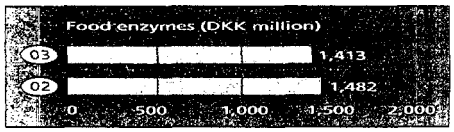


Healthy growth in detergent enzymes



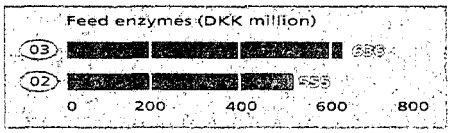
Sales of **technical enzymes** grew by 3% in DKK and more than 10% in local currency. Sales of **detergent enzymes** grew healthily in local currency, especially to emerging markets and smaller producers. Sales of **other technical enzymes** grew by 7% in DKK and more than 15% in local currency. Enzymes for the production of fuel ethanol performed particularly well, while enzymes for the forest products and textile industries also grew healthily.

Soft sales of food enzymes



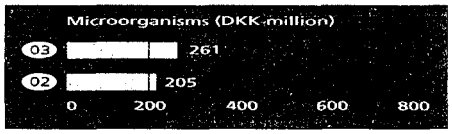
Sales of **food enzymes** fell by 5% in DKK but increased in local currency. Sales to the baking industry grew healthily but growth was hit by stock reductions at the beginning of the fourth quarter. Sales of brewing enzymes accelerated during the year but were down on 2002 after a poor start to the year due to decreased beer consumption, especially in China. Sales of enzymes for beverage alcohol and fruit juice are still weak but sales to the wine industry were highly satisfactory.

Alliance boosts phytase sales



Sales of **feed enzymes** grew by 15% in DKK and even more in local currency. Phytase still accounts for the bulk of sales growth but other enzyme types also grew healthily. Novozymes' alliance with DSM is continuing to increase market penetration.

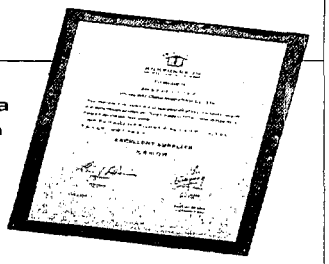
Bacteria generate growth



Sales of **microorganisms** grew by 27% and were boosted by acquisitions in both 2002 and 2003. Since this business is based primarily in the USA, the negative effects of exchange rate movements were considerable. Sales grew most in the cleaning and plant care markets. The integration of the two companies acquired in 2003 – Semco Bioscience and Roots – is running to schedule. ■

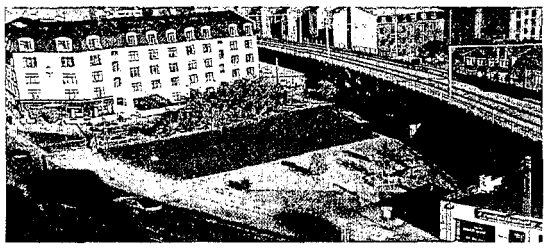
Showdown with customer

Late summer Novozymes played its 18th baseball game against Lion, one of our two big detergent customers in Japan. The first game took place 20 years ago, and last year the two companies decided to dust off bat and ball again after a break of seven years. The next showdown is planned for March. ■



Unilever award for Novozymes China

Novozymes received Unilever's Excellent Supplier award for the third year in a row in 2003 in recognition of our Chinese workforce's unique performance, collaboration and support. Novozymes scored highly on product quality, delivery, logistics, technical innovation and service, documentation, safety and the environment, and corporate conduct. ■

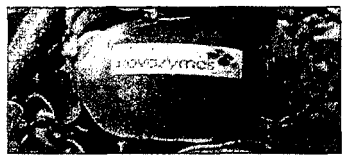


From junkyard to green oasis

On the initiative of three local artists, Novozymes has helped to sponsor the transformation of a sorry-looking inner-city square littered with scrapped cars, refuse and weeds. The result: a green oasis opposite Novozymes' Fuglebakken site in Copenhagen which is now being maintained by local people. ■

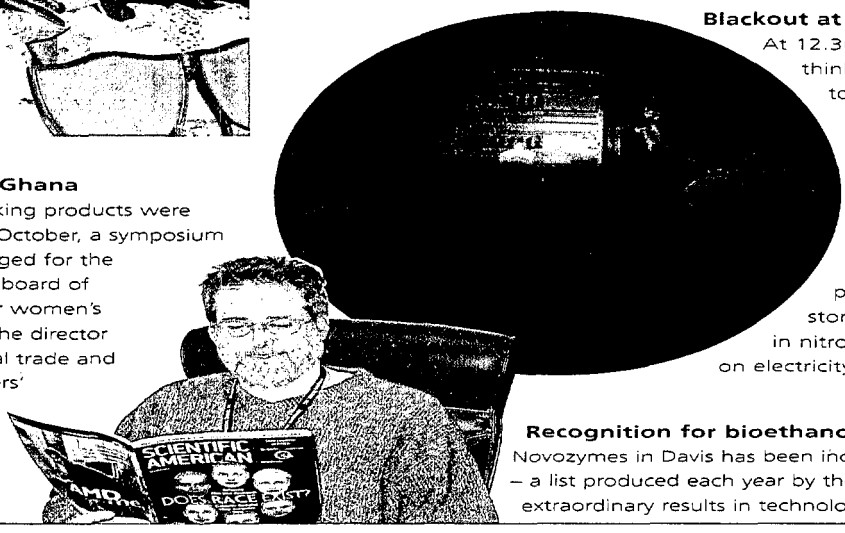
Baking enzymes on the advance in Ghana

When Novozymes' baking products were launched in Ghana in October, a symposium on enzymes was arranged for the head of the Ghanaian board of health, the minister for women's and children's affairs, the director of the board of internal trade and imports, the local bakers' association and representatives from mills and bakeries. ■



Apple fun

Novozymes' employees gasped in astonishment when apples like this were served in the canteen in Bagsværd. Stickers were applied to the apples before they ripened and removed afterwards to reveal, as if by magic, the Novozymes logo. ■



Blackout at Danish sites

At 12.36 p.m. on September 23 the unthinkable happened. Power was lost to the whole of eastern Denmark, including Novozymes' factories. Fortunately we got off lightly, losing less than DKK 10 million in production. Novozymes' crown jewels – the world's largest collection of microbial strains for enzyme screening – are protected through duplication and stored either in freeze-dried form or in nitrogen freezers which are not reliant on electricity. ■

Recognition for bioethanol project

Novozymes in Davis has been included in the *Scientific American* 50 – a list produced each year by the renowned journal to celebrate extraordinary results in technological leadership during the year. ■

At the Capital Markets Day analysts and investors get to know Novozymes' business better. Here we see them experimenting with enzymes and fabric samples.

Investors in lab coats and ties

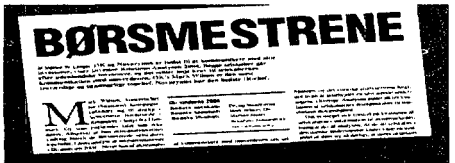
Novozymes served a cocktail of beer, bacteria and fabrics at the annual Capital Markets Day.

A beer-tasting was on the agenda for analysts and investors when they visited Novozymes' headquarters in Bagsværd in late November for the annual Capital Markets Day. Beer experts from both within and outside Novozymes explained the art of brewing and how enzymes can be used to produce beer with fewer calories.

The drinks were well deserved after a tour of the textile laboratory, where our guests got to don lab coats and carry out their own experiments with enzymes and fabric samples. This came after hearing about the textile market and our new strategy of focusing more on textile mills, an area where we anticipate healthy growth.

Earlier in the day the 40-odd analysts and investors from Denmark, the UK, Switzerland and France learned about the new business area, industrial microorganisms, which Novozymes has built up through acquisitions since 2001.

At the Capital Markets Day investors get to meet some of the people behind the company and delve deeper than our financial statements and investor roadshows. ■


BØRSMESTRENE

We are the champions

Novozymes took gold in this year's Danish Investor Relations Awards. Novozymes and industrial group EAC were in a class of their own, well ahead of the pack, and shared the award for "Best company".

This first place was due in part to Michael Steen-Knudsen, who was again crowned "Best IR manager". Novozymes also came out top for "Best annual report" and "Best website", and was in the top three in all of the six categories in which the companies were assessed. Steen Riisgaard took silver for "Best CEO at IR", while Novozymes took bronze in the categories of "Senior management's openness" and "Best information stream".

The analysis by business magazine *Berlingske Tidendes Nyhedsmagasin* was broader-based this year than before and is the most detailed in Denmark. ■

Enzymes are used everywhere

Almost 100 private shareholders visited Novozymes and discovered that enzymes play a role in almost everything.

One thing after another came out of Steen Riisgaard's shopping bags in October while he explained to almost 100 private shareholders just what this had to do with enzymes. A great deal in fact: wine, cheese, fruit, soap, jeans and even his leather wallet had all encountered enzymes during their production. Most people are surprised by how many products and processes enzymes from Novozymes are used for.

Steen Riisgaard also discussed the company's performance during the first few months of 2003 and took questions from the floor about Novozymes' plans for the future.

Private investors can read and learn more about Novozymes at www.novozymes.com under Investor Zone. The presentation from this very event can be found there, among many other things. Novozymes is also a member of the website www.investor-relations.dk where a series of Danish companies have teamed up to create a joint portal for private shareholders. ■

Steen Riisgaard reveals just how many everyday goods are produced with the help of Novozymes enzymes.

March 17, 2004	Annual meeting of shareholders
April 29, 2004	First quarter 2004 group financial statement
August 4, 2004	First half 2004 group financial statement
October 27, 2004	First nine months 2004 group financial statement

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