

Mail Stop 3561

March 4, 2008

Via Fax & U.S. Mail

Mr. Terrell K. Crews
Chief Financial Officer
800 North Lindbergh Boulevard
St. Louis, Missouri 63167

**Re: Monsanto Company
 Form 10-K for the year ended August 31, 2007
 Filed October 26, 2007
 File No. 001-16167**

Dear Mr. Crews:

We have reviewed your filing and have the following comments. Unless otherwise indicated, we think you should revise your document in future filings in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Please respond to confirm that such comments will be complied with, or, if certain of the comments are deemed inappropriate, advise the staff of your reason. Your response should be submitted in electronic form, under the label "corresp" with a copy to the staff. Please respond within ten (10) business days.

Form 10-K for the year ended August 31, 2007

Management's Discussion and Analysis

– Seeds and Genomics Segment, page 31

1. We note your disclosure that the decrease in vegetable and fruit seeds gross profit as a percent of sales was partially offset by the effect on cost of goods sold associated with the inventory step-up for the Seminis acquisition, which was \$5 million in 2007 and \$50 million in 2006. Please explain to us the nature of this inventory step-up and your basis for the accounting treatment.

- Critical Accounting Policies and Estimates

2. Please consider revising your critical accounting policies and estimates section in future filings to include a discussion on management's assessment of the impairment of long-lived assets such as property and equipment and intangible assets other than goodwill given the significance of such items for each of the periods presented on the face of the balance sheet.

Notes to the Financial Statements

- General

3. We note from your disclosures in your Proxy Statement filed on Form DEF14A, that you have disclosed certain related party transactions. Please revise the notes to the financial statements in future filings to include disclosure of all related party transactions as required by paragraph 2 of SFAS No. 57.

Note 2. Significant Accounting Policies

- Basis of Consolidation

4. We note your disclosure that one entity that is a variable interest entity but which you are not the primary beneficiary is a biotechnology company in which you had a 9 percent equity investment. In light of the fact that your investment in this entity appears to be less than 20%, please explain to us why you believe it is appropriate to account for the investment under the equity method of accounting. As part of your response, please tell us if you are able to influence the operating or financial decisions of the investee.

Note 4. Business Combinations, page 67

5. We note your disclosure that charges of \$193 million were recorded in research and development expenses in 2007 for the write-off of acquired in-process R&D (IPR&D). Please explain to us, and disclose in future filings, how you determined the fair value of the acquired in-process R&D. Include in your response and revised disclosure, all assumptions and valuation techniques used in the valuation.

6. We note your disclosure that the estimated fair values of the 2005 acquisitions, including the EITF 95-3 liabilities discussed above, were adjusted during fiscal year 2006, resulting in additional goodwill of \$36 million. Please explain to us the nature of the fair value adjustments and why you believe it was appropriate to increase goodwill for these adjustments.

Note 6. Customer Financing Programs, page 70

7. We note your disclosure that you have programs to provide financing to customers in Brazil, Europe and Argentina, and these programs qualify for sales treatment under SFAS 140. For each of these financing programs, please explain to us why you believe the program meets the criteria in paragraph 9 of SFAS 140 to be accounted for as a sale. Please tell us specifically how your transferred loans have been isolated from you when they are still guaranteed by you.

Note 9. Investments, page 74

8. We note your disclosure that you realized gains of \$11 million net of \$6 million tax expense in 2007 as a result of a donation of equity securities. Please provide us details of this transaction and tell us how you accounted for the transaction. As part of your response, please explain to us how you calculated the amount of gain recognized and where the amount is recognized on the statement of operations.

Note 21. Commitments and Contingencies, page 95

9. We note from your disclosure in Note 21 that you have operating lease obligations. In future filings, please revise to include disclosure of a general description of the leasing arrangements. See paragraph 16 of SFAS No. 13.

Forms 8-K dated January 3, 2008, October 10, 2007, September 17, 2007, June 28, 2007, April 4, 2007, and January 4, 2007

10. We note your use of the non-GAAP financial measures free cash flow and EBIT. In future filings, please include disclosure of the reasons why management believes that presentation of the non-GAAP financial measures provides useful information to investors regarding your financial condition and results of operations. See paragraph 10(e)(1)(i)(C) of Regulation SK.

Mr. Terrell K. Crews
Monsanto Company
March 4, 2008
Page 4

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Claire Erlanger at (202) 551-3813 or Jean Yu at (202) 551-3305 if you have questions regarding comments on the financial statements and related matters. Please contact me at (202) 551-3816 with any other questions.

Sincerely,

Joseph A. Foti
Senior Assistant Chief Accountant