

ELEMENT ♻ FARM

*florence, nj*

&

**PURE**spinach  
LOCALLY GROWN

We are a **technology-enabled** produce company.

# We grow and sell the **best spinach** in the world

**A better tasting  
spinach**

same seed,  
more nutritious

**Locally-grown,  
everywhere we go**

constant yield year-round,  
in all locations and climates

**Pesticide-free  
and ultra-fresh**

harvest to shelf in  
under 24 hours

# There is a **big gap for spinach** in the market



Farmers' Market



Sold in bulk

Unbranded  
Inconsistent Quality  
Exposed to Contaminants



Supermarket



Packaged

Imported / Not Fresh  
Bland Taste  
Chlorine Washed

# Year-round local spinach is the next big thing

Local produce market in US

9% growth | \$12 Billion (annual sales)\*\*

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Total US fresh spinach

\$1.1 Billion (annual sales)\*

Total US fresh leafy greens

\$8 Billion (annual sales)\*

\* USDA data

\*\* A.T. Kearney's "Firmly Rooted, the Local Food Market Expands"

# Year-round local spinach **is also impossibly tricky**

Hydroponic farmers don't have the tools & know-how



- “We are highly interested in spinach as a crop but do not have a reliable way of producing it.”



- “We tried growing spinach in multiple facilities but failed.”

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Field-farmers are constrained by climate and disease issues

95% of spinach  
sold in US comes from  
California & Arizona

2006 E.Coli outbreak in  
spinach has infected  
199 individuals\*

Field-farming of spinach  
is regularly interrupted  
by mildew outbreaks

\* Centers for Disease Control and Prevention “Outbreak Summary” (2006)

# We have a **solution**

Solving 3 key issues related to commercial scale greenhouse spinach production  
creating a superior production method for all leafy greens



## **Higher Leaf Quality**

dynamic spectrum LED fixtures  
& unique controls algorithm  
for exceptional taste and shelf-life



## **Safer Process**

unique processes in irrigation  
and crop handling  
for prevention of pathogens



## **Efficient Production**

custom designed seeding  
and harvesting equipment  
for consistency & cost-efficiency



Pending Process Patent

# We use **cutting-edge technology**

## Conventional Hydroponics for leafy greens



**Manual Operations**



**Low-capacity  
Supplemental Lighting**



**Re-circulating  
Water & Nutrients**

## Element Farms Hydroponics



**Automated Operations**



**High-capacity  
Intelligent Lighting**



**Carbon-Dioxide  
Supplementation**



**Multi-cycle Irrigation**



# Superior to conventional methods

## Production advantages

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**resource efficient**

**20x** yield  
per sqft

**90% less** water  
per lbs



**time efficient**

**14 day** vs 30 day  
crop cycle

**1 day** vs 6 days  
to shelves

## Marketing advantages

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**local & sustainable**

**Zero** agricultural  
runoff

**Local** distribution  
reduces carbon emissions



**nutritionally superior**

**Higher** in Iron, Zinc  
& Magnesium\*

**Lower** in Sodium  
and heavy metals

## Superior tasting product



PureSpinach

Blind Taste Test N=100	"Spinach A" PureSpinach	"Spinach B" Field-grown
Preference (%)	62	38
"Flavorful"	18	5
"Juicy"	16	1
"Sweet"	7	4
"Earthy"	6	4
"Crispy"	5	4
"Negative after-taste"	0	6



Wegmans Organic

"This [PureSpinach] is *what spinach should taste like*... but this [field-grown] is what I am used to"

## Conventional Produce Model

field-grown in CA/AZ, shipped nationally



## Element Farms Model

greenhouse-grown locally, shipped less than 100 miles



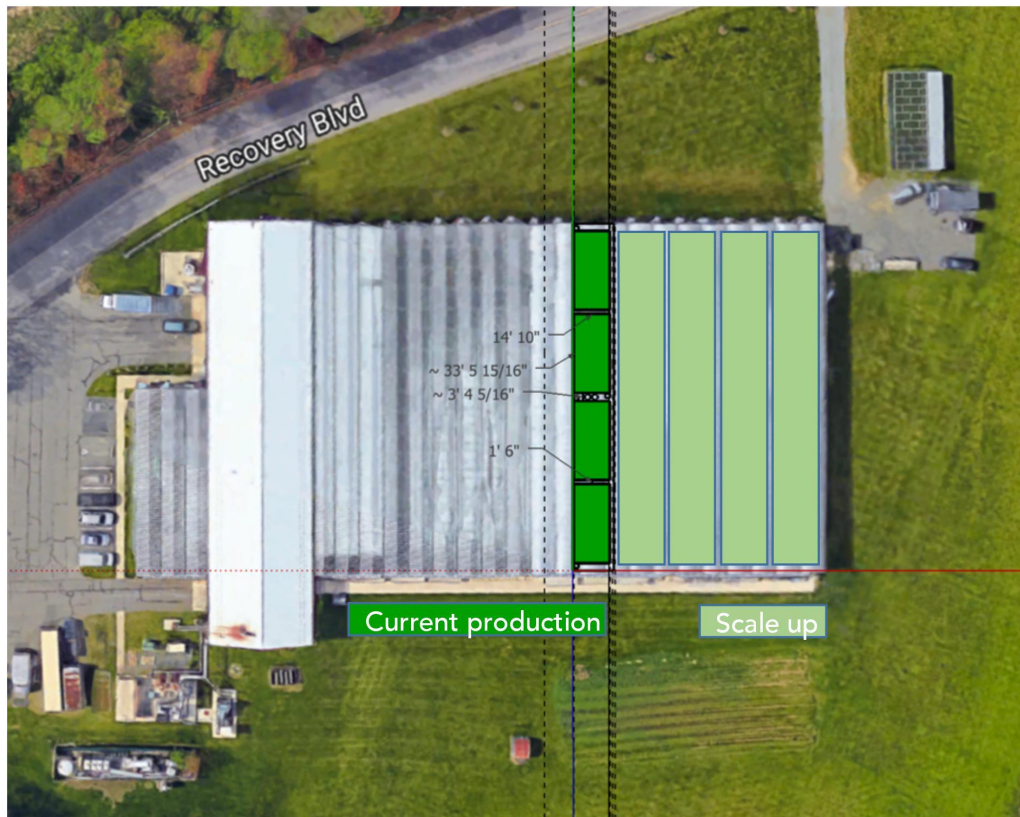
We are getting **traction** – fast



# R&D production and **scale up**

Rutgers EcoComplex Research & Demonstration Greenhouses

Florence, NJ



# We have a national **expansion** plan

10 greenhouses servicing 14 metro areas





## Team

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**Serdar Mizrakci**

CEO

B.S Industrial Eng [Sabanci '11]  
MBA [Cornell '17]  
2x Entrepreneur

Formerly founded robotics company,  
managed product at HP, Inc.

Expertise in manufacturing and  
business development



**Danny Janeczko**

CTO / Head Grower

B.S Biological Eng [Cornell '17]  
M.S Biological Eng [Cornell '17]  
Lester B. Knight Scholar

Worked in pharmaceutical  
process development and  
horticultural research

Expertise in hydroponics and  
process design



**Maya Kutz**

Food Safety Manager

B.S Engineering Sci [Smith' '15]  
Postbac Greenhouse Practices  
[NY Botanical Gardens '17]

Former Hydroponic/Aquaponic  
Science & Technology Program  
Assistant at Cornell University

5 years of professional growing  
experience



**Nazlican Goksu**

Branding/Marketing

B.A Product Design [CSM '12]  
Postbac Anthropology [Columbia '14]  
2x Entrepreneur

Formerly founded design studio,  
+37 Studio for design  
Works at IDEO as Design Researcher

Expertise in product design and  
brand management

## Main Advisors

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**Neil S. Mattson**

CEA Industry Expert

Associate Prof. and Greenhouse  
Extension Specialist at Cornell  
University

GPN Magazine 40 Under 40 '15

Expertise in hydroponic leafy  
greens and environmental  
control systems



**David Specca**

Crop Production Expert

Assistant Director for Controlled  
Environment Agriculture and  
Bioenergy at the Rutgers  
University EcoComplex

+20 years of experience  
growing hydroponic crops

Advisor to +10 CEA businesses  
Owner, Specca Farms



**Manoj Thomas**

Marketing Guru

Director, Business Simulation Lab  
Associate Prof. of Marketing at  
Cornell University

Co-author of the book 'Why  
People (Don't) Buy'

Expertise in purchasing patterns  
and product positioning



We are **redefining fresh.**



# Appendix

# The most resource efficient model in **indoor farming** landscape



## **In Home Systems**

Small standardized growing unit for use by consumers in home settings.



## **Container Farm**

Standardized, self-contained growing unit that employs vertical farming systems with artificial lighting



## **Soil-Based Greenhouse**

Translucent, climate controllable structure where plant are grown in soil



## **Indoor Vertical Farm**

Fully enclosed and opaque room with a vertical hydroponic, aeroponic, and/or aquaponic system. Artificial lights are used.



## **Aquaponic Greenhouse**

Translucent, climate controllable structure where plant are grown in water that has been used to cultivate aquatic organisms (i.e. fish)



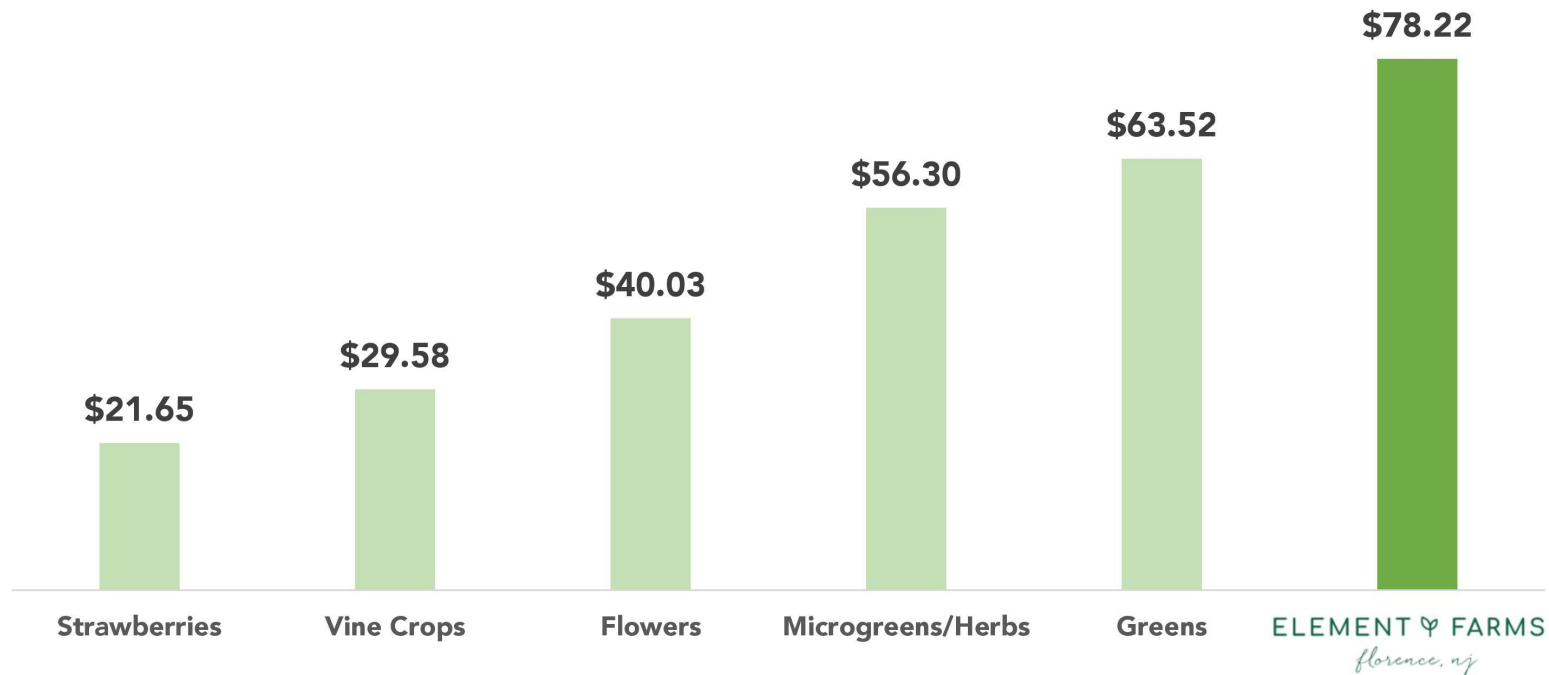
## **Hydroponic Greenhouse**

Translucent, climate controllable structure where plant are grown in water as opposed to soil benefiting from natural sun light

Resource efficiency from least efficient to most efficient

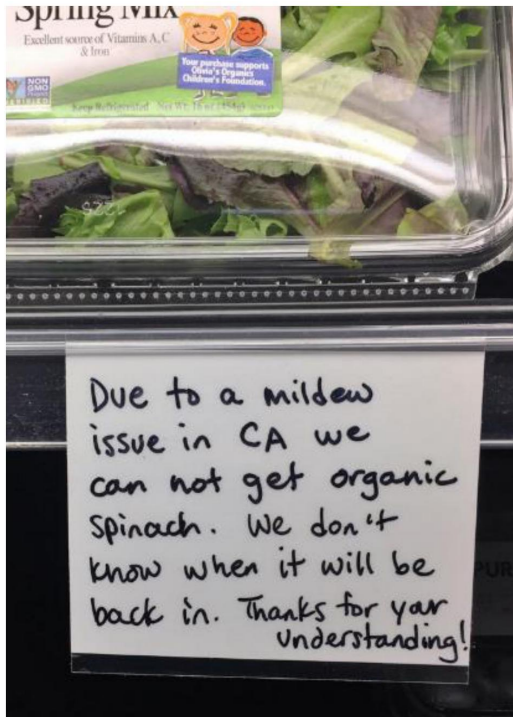
Element Farms has the **highest revenue** per square foot compared to other crops\*

Average Annual Revenue (\$/sqft)



\* Agrilyst's September 2016 report: *State of Indoor Farming*

# Industry problem: supply is **unreliable**



Sign at GreenStar Coop  
in Ithaca, NY

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Search

114 results

## LEAF LOW Spinach is like 'gold dust' in supermarkets after heavy rain in Spain damages crops

Sainsbury's, Tesco and Waitrose have a shortage of spinach in store and online

Refine by

- Popular
- New Products
- Special Offers

Area

- Spinach, Greens & Kale (17)
- Healthy Ready Lunch On the Go (1)
- Frozen Meat Free & Vegetarian (6)
- Prepared Salads & Accomps (6)

Product	Availability
Redmere Farms Spinach 200G	Sorry, this product is currently not available.
Tesco Baby Spinach 240G	Sorry, this product is currently not available.
Tesco Organic Spinach 200G	Sorry, this product is currently not available.
Fresh And Naked Spinach 125G	Sorry, this product is currently not available.
Tesco Leaf Spinach 900G	£1.40 (£1.56/kg)

Quantity: 1 Add

*"Apologies, for the next three weeks we will experience a shortage of spinach, due to torrential rain in Southern Spain... We are working closely with growers to maximize availability whilst ensuring that our quality standards are met..."*



# Consumers value **local, fresh, and healthy**



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Mother of two

Shops at Whole Foods

Prepares food at home

Lives in NYC

Reads **nutrition** facts

Uses **greens** in every meal

Consumers can not find a spinach product worthy of brand loyalty

# Awards

**Cornell Entrepreneurship  
Kickoff Event**  
September 2016

**Finalists**

**Entrepreneurship  
Summit NYC**  
November 2016

**First Place**

**Bangkok Business  
Challenge**  
February 2017

**Best Business Plan  
& Presentation**

**Hemmeter Entrepreneurship  
Award**  
May 2017

**Best Business  
Plan**

