Agenda

Overview of FLX Food

Projects and Work to Date

Growth of Organics

Questions
What is FLX Food?

Stakeholders in the Finger Lakes region collaboratively engaged in agriculture and food processing challenges and solutions.
FLX Food Background

Region rich with:
• Long-standing economic success in agriculture
• World-renowned Cornell University research in agriculture and food processing
• Strong collaborations with diverse synergies

Region with opportunity:
• Leverage our regional assets
• Attract, support and retain entrepreneurs
• Sustain a positive economic impact to our region – jobs & quality of life
Mission Statement

FLX Food will become the regional hub for food growing, processing, and manufacturing. We will help food people become successful in developing a sustainable market for their products. We will focus on natural, sustainable, healthy, organic products. We will use the unique assets of key stakeholders in the Finger Lakes Region to accomplish this. Ultimately, when food entrepreneurs and producers think about where to get help to start and build their business they will think of the Finger Lakes region first.

How We Define Success

In five years there will be four new businesses, or an expansion of existing food businesses, located in the Finger Lakes Region which will have a total of 250 or more new employees.
FLX Food Benefits

- Collaboration between strategic partners strengthens the supply chain
- Streamlines the supply chain process to new products
- Better for the environment – saves energy by reducing transportation
- Fresher products/better quality for local customers
- Lowers food waste
- More consistent availability of product (California drought)
- Supports local trend in food
- Local consumers get new items first
Key Stakeholders

Today

- Consumer
- Higher Education
- Manufacturing
- Processing
- Grower
- Entrepreneur

Future

- Manufacturing
- Processing
- Consumer
- Entrepreneur
- Higher Education
- NYS
- RIT
- NYS WORKS

Growing Agribusiness in New York
<table>
<thead>
<tr>
<th>Projects</th>
<th>Mission Profile</th>
<th>Type of Economic Development</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural</td>
<td>Healthy</td>
<td>Organic</td>
</tr>
<tr>
<td><strong>Food/Beverage - Processed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic Grains* (feed) Pork, CH</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Organic Grains* (Bakery) Bread</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Organic Wine</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Nirvana Water</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Food/Beverage - Fresh</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pride Pak Veggies</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mason Farms High Tunnel</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Love Beets</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hydroponics - Intergrow</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Manufacturing/Processing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Pressure Processing (HPP)*</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>BioSciences Energy/Synergy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Aseptic/TetraPak</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Plantic (UK)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>OLED Works</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Key:
- Yes
- Maybe
FLX Food Work to Date

• Assembled teams of stakeholders
• Identified potential projects and goals
• Held two Leadership meetings and many project team meetings
• Embarked on three key projects:
  • High Pressure Processing (HPP)
  • Organic Grains for Bread
  • Organic Grains and Feed
HPP is an approved cold “pasteurization” process that uses safe, natural water pressure to eliminate potential pathogens and spoilage organisms in a variety of foods.

When a product is put through high pressure pasteurization, water pressure is instantly and uniformly applied around the package.

Imagine a grape inside a bottle of water. If you placed your hand around the bottle and squeezed, the grape would stay intact because the pressure around it is equal from all sides.

https://www.youtube.com/v/qxk6nUnnTr8&start=56&end=150&autoplay=1&rel=0
Advantages of HPP

• **Product Quality**
  - Production of “natural”, safe value-added food with a superior quality
  - Increased product shelf life - even for food which is sensitive to heat
  - Low-temperature preservation method: no loss in product quality compared to heat pasteurization

• **Food Safety**
  - Additive-free preservation of food (chemical preservatives only slow the growth of pathogens that cause foodborne illness and spoilage.)
  - HPP safely and naturally eliminates these same pathogens
  - Enhanced food safety due to inactivation of spoilage organisms and relevant foodborne pathogens: Listeria monocytogenes, E. coli, Salmonella

• **Sustainability**
  - Processing in final consumer packaging is possible (no recontamination)
  - Waste-free and environmentally friendly, sustainable technology – only water and electricity are needed
Growth of HPP

100% growth in installations in the past four years

Total HPP Machines Worldwide in 2013 – 222 (half in the U.S. but none in NYS)
What we’ve accomplished…

- Visited multiple HPP operations
- Partnered with LiDestri Foods and identified facilities
- Completed NYS funding application – project identified as a priority by the FLREDCC
- Identified potential products and estimated Wegmans volume

What’s next…..

- Super premium juice opportunity -
  - Testing shelf-life, quality of product, food safety, merchandising decisions, process changes, etc.
- Further investigate other potential products and partnerships
- Project planning (timing, installation, staffing, etc.)
- Funding - NYS grant decision has been delayed
What we know:
- Local organic grain supplies for baking are limited. The demand is growing, especially for ancient & heritage grain varieties.
- Farmers need to be identified to grow the quantities and varieties to meet the demand and the diversity in flavor & attributes for differentiated artisan breads.
What we’ve accomplished:
  • Partnership with Lakeview Farms in Penn Yan (Mary-Howell & Klass Martens) and Champlain Valley Milling in Westport, NY (Sam Sherman)
  • Developed our first, all local, Penn Yan bread utilizing Red Fife, Spelt, Rye and Fredrick grains
  • Partnered with Cornell extension in Willsboro to plant 3 acres of Rouge de Bordeaux to use as seed for our future needs

What’s next:
  - Future research and development with Einkorn, Emmer, Spelt and other heritage varieties
  • Working to identify a resource who will develop organic grain strategies, and develop a network among farmers, millers and plant breeders for seed
  • Working with Cornell-CIFS –
  • 20 acres of organic grain at Wegmans Organic Farm for research

Organic Grains for Bread
Growth in Retail Organic Sales

- 350% increase over 10 years
- 20% increase year-over-year

U.S. organic food sales are expected to reach $35 billion in 2014

source – USDA Economic Research Service
Growth of Organics
Wegmans Total Organic Meat Sales - Organic Chicken & Pork

Organic Chicken is 57% of our Total Organic Meat Sales growing between 27-46%/year. It is up 157% since 2010! Organic Chicken is 8x larger than Organic Pork.

Organic Pork is 7% of our Total Organic Meat Sales growing on average 40%/year. It is up 97% since 2011.
Growth of Organics

Organic Grain Demand Forecast - Chicken

- Based on 25% gap in availability to total need
- Supplier committed to using only domestically grown corn & soybeans
Growth of Organics

Organic Grain Demand Forecast - Pork
based on 250 head/week

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>151,727</td>
<td>182,073</td>
<td>218,487</td>
<td>262,185</td>
<td>314,622</td>
<td>377,546</td>
</tr>
<tr>
<td>Corn</td>
<td>123,070</td>
<td>147,684</td>
<td>177,221</td>
<td>212,665</td>
<td>255,198</td>
<td>306,238</td>
</tr>
<tr>
<td>Soy</td>
<td>28,657</td>
<td>34,389</td>
<td>41,266</td>
<td>49,520</td>
<td>59,424</td>
<td>71,308</td>
</tr>
</tbody>
</table>
What we know:

- Conventional grain growers are hesitant to convert because it takes three years to become certified organic and they will lose about 20% of their yield for those three years.

- There is not a market for non-certified “On The Way” organic grain.

- Farmers require some subsidy for transitional years and/or assurances of a market for their non-certified organic grain.
Organic Grains for Feed

Identify and partner with one organic farmer by 6/1/15 to grow a total of 1,000 acres.

What we’ve accomplished:
• Support proposal in process from Pat Hooker/NYS Ag & Markets
• Held informational meetings with local farmers and key stakeholders

What’s next:
• Krehers developing cost scenarios and working with local farmers.
• Investigate markets for alternating crops.
• Develop a program assuring a market for organic grain.
Organic Grain for Feed Opportunity

Future & Current Prices per Bushel

<table>
<thead>
<tr>
<th>Crop</th>
<th>Conventional (futures)</th>
<th>“On the Way”</th>
<th>Organic (Current)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>$4.74 (Dec.)</td>
<td></td>
<td>$12 - 17</td>
</tr>
<tr>
<td>Corn</td>
<td>$3.27 (Dec.)</td>
<td></td>
<td>$12 – 17.50</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$9.23 (Nov.)</td>
<td></td>
<td>$25 - 28</td>
</tr>
</tbody>
</table>

Opportunity – market and price for “on the way” to organic
Questions?