IR-4 Support Opportunities for Organic Agriculture

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Contents

- USDA National Organic Program Rule.
- Organic Crop Production.
- In the Field – Grower Issues.
Small Planet Foods

- Organic foods division of General Mills
- Agriculture-based
- Organic industry & certification pioneers since early ‘70s
- 200+ certified organic retail products under our brands
- Grower, custom farm, contract grow, direct purchase
- Utilize contract processors and packers

Source: Organic Trade Association
2008 forecast $24 bil
17% growth forecast
Re economic down turn - Growth not falling in fruit, veg, meats, milk
Alec McErlich, 10/13/2008
US Organic Sales

- Organic food sales reached $20 billion in 2007 (up from $12 billion in 2004).
- Represents approximately 3% of all food and beverage sales in US. (up from 0.8% in 1997)
- ~21% annual growth rate.
- Consumer’s demand for health, nutrition and food safety driving growth.
- Supply constraints restricting sales and new product development in some food categories.
- 69% of adult consumers buy organic at least occasionally.
- Largest food categories purchased—
  - Fruit and vegetables
  - Dairy products
  - Eggs
Mainstreaming Organic

- 73% of US consumers have purchased organic in last six months.
- Usage not driven by demographics.
- Initial triggers for buying organic – children, health condition, social network influence, concern about food production systems.
- Super center/discount and club stores increasing source of organic foods.

<table>
<thead>
<tr>
<th>Purchase Occasion</th>
<th>Year 2000</th>
<th>Year 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Weekly</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Monthly</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>Occasionally</td>
<td>34%</td>
<td>42%</td>
</tr>
<tr>
<td>Never</td>
<td>45%</td>
<td>31%</td>
</tr>
</tbody>
</table>

US Retail Sales of Organic Food - $16.9 Billion in 2006

Source: Organic Trade Association’s 2007 Manufacturer Survey
Fruit & Vegetable Consumer Sales
1997-2003

Annual Organic Growth Rate

Organic Penetration into Total Fruit & Vegetable Market

Source: 2004 Nutrition Business Journal
US Organic Production Statistics
U.S. Certified Organic Acreage and Operations, 2005

Source: USDA, Economic Research Service, based on information from USDA-accredited State and private organic certifiers.

Note: Alaska & Hawaii not shown; organic pasture/range in Alaska accounts for 60 percent of the U.S. total.
US Organic Vegetable Acres

Vegetables 95-05

Source: http://www.ers.usda.gov/data/organic/
US Organic Herb Acres

Herbs 95-05

Source: http://www.ers.usda.gov/data/organic/
US Organic Fruit Acres

Source: http://www.ers.usda.gov/data/organic/
US Organic Other Crop Acres

Other land 1995-2005

Source: http://www.ers.usda.gov/data/organic/
Moving to organic agric, 2005
Certified organic accounts for:

- 1.6% tomato acres
- 2.4% grape acres
- 3.1% dry pea-lentil acres
- 3.4% apple acres
- 3.7% lettuce acres
- 5.8% carrot acres
- 1% dairy cows
- <1% layer hens

Source: USDA-ERS
Organic Cropland by IR-4 Region

- Western 694,657 acres
- North Central 762,746 acres
- Northeastern 137,134 acres
- Southern 128,736 acres

USDA National Organic Program Rule
Organic Foods Production Act 1990

NOP implemented October, 2002

All accredited certifiers use this standard – single National organic standard

Any inputs used in organic production must be compliant with NOP standards, §205.105
Organic Farming....

- DOES NOT rely on synthetic pesticides, herbicides, fertilizers or other off-farm inputs
- DOES NOT use genetically modified seeds or organisms
- DOES NOT use irradiation
- DOES NOT fertilize with sewage sludge
- DOES NOT use growth hormones or antibiotics in livestock
USDA-NOP Rule

- Use of all natural substances allowed unless specifically prohibited e.g. nicotine, strychnine.
- Synthetic substances are prohibited unless they are specifically allowed according to the National List of Allowed and Prohibited Substances (National List).
- Listed synthetics may be used only as indicated on the National List, such as pest or disease control and restrictions on application method or crop must be followed.
- National List can only amended by National List Petition Process or the National List Sunset Process.
- See NOP §205.601, §205.602 and §205.607
§205.206 Crop pest, weed, and disease management practice standard. (text abbreviated)
A producer must use management practices to prevent pests, weeds, and diseases including but not limited to:

• crop rotation and soil and crop nutrient management practices.
• sanitation measures to remove disease vectors, weeds seeds and pest habitat.
• cultural practices that enhance crop health, including selection of plant species and cultivars and resistance to prevalent pests, weeds, and diseases.
• mechanical or physical methods such as the introduction of predators or parasites, development of habitats for natural enemies, approved lures, traps, and repellants.
• mulching with fully biodegradable materials.
• mowing, grazing, hand weeding, mechanical, flame, heat or electrical means.
• plastic or other synthetic mulches provided they are removed at end of growing season.
• Practices which suppress spread of diseases or application of non-synthetic inputs.
• Application of allowed materials when above measures are insufficient.

The rule encourages a producer to use cultural and physical tools before resorting to the application of approved pesticides.
Organic Crop Management
Key Approaches to Crop Management

- Reduce off farm inputs
- Manage pests, not eliminate
- Build soil quality and health
- Good crop rotation practices
- Utilize multiple techniques to address pest problems
- No silver bullets
Use Multiple Techniques

- Cross drilling
- Seed bank depletion
- Competitive varieties
- Cover crops
- Sanitation
- Cultivation
## Most Commonly Reported Pests

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Weeds</th>
<th>Insects</th>
<th>Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Foxtails</td>
<td>Cucumber beetle</td>
<td>Powdery mildew</td>
</tr>
<tr>
<td>2</td>
<td>Pigweed</td>
<td>Flea beetle</td>
<td>Late blight</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Phytophthora)</td>
</tr>
<tr>
<td>3</td>
<td>Quackgrass</td>
<td>Aphids</td>
<td>Blight</td>
</tr>
<tr>
<td>4</td>
<td>Grasses, in general</td>
<td>Colorado potato beetle</td>
<td>Early blight (Alternaria)</td>
</tr>
<tr>
<td>5</td>
<td>Lambsquarters</td>
<td>Codling moth</td>
<td>None</td>
</tr>
</tbody>
</table>

Taken from OFRF 2007 National Organic Research Agenda, based on data from Walz 1997.
How can IR-4 help organic producers
Opportunities for IR-4 Assistance

- Product efficacy.
- Alternatives to or reduced application rates for copper and sulfur.
- Evaluate pesticide effectiveness and impact on whole farm ecology.

- New materials needed
  - Wood preservatives
  - Sprout inhibitors
  - Fire blight (*Erwina amylovora*) controls
  - Blossom thinning agents
  - Biological nematicides
  - Biological fungicides
  - Seed treatments – cold temperature soils
  - EPA List 4 inerts.
Opportunities for IR-4 Assistance (cont)

- Herbicides – labels for crop use.
- Label expansion e.g. crop desiccants for potatoes and berries.
- Weed control issues
  - Perennial weeds
  - Existing herbicides temperature sensitive, non selective, expensive
  - Crop meals – registration.
- Consider pesticides with different modes of action – repellency, fumigant, anti-feeding, confusion, etc.
- Factors influencing consistency of pesticide performance.
- Methods to improve pesticide performance – UV inhibitors, feeding stimulants.
- UV light inhibitors, surfactants, pH buffers.
Opportunities for IR-4 Assistance (cont)

- Education on the transport & storage of biological pesticides.
- Provide information to pesticide companies on registration requirements and criteria for eligibility of materials.
- Consider scale of farms – average farm size increasing, impact on application methods, container size.
- Utilize organic research land.
## Size of Pesticide Companies *

<table>
<thead>
<tr>
<th>Sales ($ mil)</th>
<th>Number of Manufacturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $1 mil</td>
<td>110</td>
</tr>
<tr>
<td>$1 mil - $5 mil</td>
<td>101</td>
</tr>
<tr>
<td>$5 mil - $20 mil</td>
<td>88</td>
</tr>
<tr>
<td>$&gt; $20 mil</td>
<td>213</td>
</tr>
<tr>
<td>Not Disclosed</td>
<td>28</td>
</tr>
</tbody>
</table>

* Only manufacturers of crop pest, weed and disease control products are included. Livestock and processing pest control categories are excluded.

* Data provided by the Organic Materials Review Institute, Oct 2008
Assist with registration process

- Companies often small, new, have limited resources, regional, start-ups.
- Assist with registration requirements of new materials within EPA, organic materials approval, state permits.
- Petition NOSB for inclusion of new substances to National List.
- Resource link to OFRF.
Establish communication links

Communication links between IR-4 Liaison Representatives and organic industry.

- **Certification**
  - Public and private organic certifiers .US certifier database
  - National Organic Standards Board
  - National Association of State Organic Programs
  - Accredited Certifiers Assn

- **Organic grower groups**
  - NE Organic Farming Assn
  - Ecological Farming Assn
  - Washington Tilth Producers
  - Texas Organic Farmers & Gardeners Assn
  - Midwest Organic & Sustainable Education Service

- **Industry related groups**
  - Organic Trade Association
  - Organic Farming and Research Foundation
  - Organic Materials Review Institute
CASCADIAN FARM

LIVE LIKE YOU'LL DIE TOMORROW
FARM LIKE YOU'LL LIVE FOREVER

QUALITY ORGANIC FOODS SINCE 1972