The Organic System: Putting it all Together

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The Driving Forces

Driving Forces for Organics

- Market and Consumers
- Environment and the Public Interest
- Ethos: Producer and Consumer
- Connections between Consumers and Health
- Connections between Producers, Consumers and Land
Organic Overview

• Organic Production is a production standard related to marketing
  – Operated by the USDA-AMS
  – Highly regulated

• It is not a quality standard
  – All other quality and grade standards for produce still apply

• All other ag practices apply
  – Nutrient BMP, GAP, GHP, HACCP, etc.
Organic Farming is a New Agriculture Paradigm
Agriculture Paradigms

**Conventional Agriculture**
- **Success Measures:**
  - Yield, Quality
  - Profit, Cash-Flow
  - Production Efficiency
- **Production Components Separated**

**Organic Agriculture**
- **Success Measures**
  - Multicomponent Outputs
    - Productivity and Quality
    - Environmental Enhancement
    - Sustainability
    - Consumer Satisfaction
  - Economics partnered with the Environment
- **Integrated Production**
  - Holistic Approach
Conventional Ag Model

Conventional Agriculture
• Production components are managed distinctly and separately from each other
**Organic System Model**

**Holistic Organic System**
- All production components are connected and inter-related
- Centerpiece of organic production system is: 
  - Soil Quality and Health
- Requires a Holistic View
- Requires Integrated thinking
Organic Producers

Organic Producers occur in 2 categories

1. Certified Organic Producers
2. Noncertified Producers
Certified Producers

Follow USDA-AMS National Organic Program (NOP) protocols and procedures
- Annually Contract with authorized certifier
- Annually Inspected
- Annually Report
Certified Producers

• Certified Producers can
  – Use the term “Organic” in labeling and marketing
  – Can use the USDA market label
  – Can use their certifier’s label

• Certified Producers certify because
  – Market advantage
  – Market value
Noncertified Producers

- May follow USDA or other organic production standards
- But, do not seek 3rd party certification
  - Do not submit to certification, inspection, reporting
- Noncertified producers can not
  - Use the terminology “Organic” in labeling or marketing
  - Can not sell product as organic
- May certify with other independent labels
Noncertified Producers

• Producers choose the organic methods of production for other reasons beyond labeling
  – Ethics
  – Customer base

• Producers do not certify but produce organically because
  – Too much trouble and expense
  – Do not perceive any additional benefit from the term organic or the label
Certification vs Noncertification

- Certification is more necessary at retail markets such as grocery stores, or required entering wholesale markets.
- Some markets, even farmers markets, require certification.
- Certification does not add much value to direct marketing beyond the value of direct market.
The Organics Paradigm
A System
Requires a Systems Approach
Principles of Sustainable Organic Production

**Basis of Production**

1. Principle-based decision making
2. Reduce Inputs
3. Soil Conservation and Preservation
4. Water Conservation and Preservation
5. Air Quality and GHGs
6. Integrated Cropping
7. Farm Biodiversity
8. Ecological Pest Management
9. Profits and Markets
10. Labor Welfare
11. Community Development
Must Fit all of the System Pieces Together

Requires a systems-approach

Pieces of the Organic System

- Certification Process
- Organic Management Plan
- Soil Quality and Health
- Crop Cultivar
- Nutrient Management
- Pest Management: weeds, insects, diseases
- Crop Physiology, Ecology and Meteorology
  • System Biology
- Honest and Integrity
- Consumers and Marketing
Definition of Organic Production

A production system that is managed ... to respond to site-specific conditions by integrating cultural, biological and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.

USDA - NOP Final Rule, part 205.2
Site-specific

Each Farm is Unique

- Farmer Objectives
- Market Goals and Needs
- Crop Production System
- Climate - environment, seasonal conditions
- Soil - texture, type, condition
- Ecology
  - Farm and surrounding areas
    - Plants, pests, beneficials, wildlife
- Community
Some General System Concepts

1. Everything is Connected to Everything
   – Not “input substitution”
   – Must be approached as a *SYSTEM* of interlaced elements

- Pest Mgmt
- Cultivars
- Soils
- Nutrition
- Environment
- Market and Consumer

[Image: Diagram showing interlaced elements of a system.]
Some General Concepts

2. System Sustainability and Environmental Enhancement

- The organic system works to reduce off-farm inputs
- The organic system increases farm system biodiversity and enhance ecology
- The organic systems increases soil quality, biological activity, root growth, and plant growth
Some General Concepts

3. Problem Prevention

- The system is not a reaction-based but a planning-based system

“An ounce of prevention IS worth a pound of cure”
Pest Management Standard

Producer must use management practices to prevent crop pests, weeds and diseases using

- Allowed crop rotations and nutrient management
- Sanitation to remove disease vectors, weed seeds, and habitat for pests
  - Remove and destroy infested, infected debris
  - Destroy source of infestations or infections
- Cultural practices that enhance crop health
  - Resistant cultivars
- Pest control through mechanical and physical means
Pest Management Standards

Pest Management Means

- Augmentation or introduction of predators or parasites of pests
- Development of habitat for natural enemies
- Nonsynthetic controls including lures, traps, repellents
Pest Management Standards

Competitive Vegetation Management

– Mulching with biodegradable materials
– Mowing
– Hand weeding and mechanical cultivation
– Flaming, heating, electrical
– Plastic or synthetic mulches provided they are removed at end of the crop season
Pest Management Standards

When previous pest management practices are insufficient to prevent or control pests, diseases, weeds

- A biological or botanical substance, or substance on the National List may be applied
  - Provided that, the conditions for using the substances are documented in the Organic Management Plan and Records
Steps to Pest Management

- Select healthy, productive, *resistant* cultivars
- Maintain a healthy system; reduced crop susceptibility
- Sanitation
- Exclusion
- Biodiversity
- Modeling, Scouting, Identification
- Use of beneficials
- Use of biocontrol agents
Equipment

- Must have separate equipment for organic production
  - or take steps to decontaminate and clean equipment to prevent contamination of organic fields
- May not mix prohibited chemicals in same equipment as to be used for allowed materials
Some General Concepts

4. Advance Planning
   - Slow system response
   - Longer rotations among crops
   - Must follow general best practices for agriculture
Soil Fertility and Nutrient Management

• Practices must maintain or improve physical, chemical, and biological conditions of the soil and minimize soil erosion
  – Minimize cultivation and tillage
• Must manage nutrition through rotations, cover crops, and application of plant and animal manures
  – Use of on-farm and local nutrient sources
• May not contribute to the contamination of crops, soils, or water by nutrients, pathogenic organisms, heavy metals
• May only use soil amendments on the National list
• May use mined mineral elements of low solubility
• Ash from burned plant or animal products unless prohibited (see specific rules on this)
Some General Concepts

5. Market Driven
   - Connected to Customers
     • Quality, Value, Healthfulness
   - It is still about making a living
Some General Concepts

6. Management Intensity
   - Organic Production is NOT
     • Farming by neglect
     • Old-fashioned farming; Going backward
     • Neglecting product quality or revenue
     • Anti-chemicals
     • Low Quality Food!
   - Organic Production IS
     • Using modern science and technology to understand, predict, manage the farm
Some General Concepts

7. Information and Experience

- Organic Producers are Information Consumers
  - Information from nontraditional and traditional sources
- Organic Producers tend to be innovators and experimenters
- Organic Producers tend to be in for the “long-haul”; it is not a quick operation
- Organic Producers tend to work hard and do much of the labor
Things To Remember

Cultivars:

– Use those that have strong environmental adaptability
– Grow vigorous cultivars and strains
– Select multiple pest resistances
– Select cultivars with strong market potential
Things to Remember

Soils – A Key

- Goal: To improve measurable soil quality and health
  - Reduce soil density
  - Increase organic matter and biological activity
  - Increase water infiltration, gas exchange
Things To Remember

Nutrition

– Can not make quick changes
– Build soil nutrition by building soil quality and health
  • Organic matter, soil biological activity
– Importance of good analytical procedures
  • Annual soil testing; annual foliar testing
– Manage for the long term
Things To Remember

Pest Management

– Start with plant resistance and health
– Build a healthy ecosystem; Build biodiversity
– Sanitation
– Know key pests; weeds, insects, diseases
  • Pest biology
    – Modeling, scouting
  • Economic impact thresholds
  • Management Strategies and Alternatives
Things To Remember

Know the Market

- Produce crops, cultivars, and quality that meets the market demand
  - Produce quality, healthy product
  - Maintain product safety
    - GAP, GHP, HACCP
- Produce products that are high value and therefore command a true price of production
Things To Remember

Know the Rules

– Must know the NOP
– Must know the Certifiers
– The Organic System is based upon grower, consultant, and certifier
  • Knowledge
  • Honesty
  • Integrity
Summary

What we have learned today

- Organic production consumption and market is increasing, rapidly
- Organic consumers have complex reasons
- Organic producers want agricultural, economic, social, and environmental outputs
Summary

What we have learned today

- Organic Production is highly regulated
- Organic production requires high level of knowledge
  - Information dependent system
    - Many sources; traditional and nontraditional
- Organic production requires traditional Agriculture Knowledge
  - Soil science, crop nutrition, pest management, etc.
Summary

What we have learned

– Organic Production is very Goal Oriented
  • Market targeted
  • High quality, high value, profitable crop
  • Sustainable
  • Reduced Inputs; reduced side-effects
Summary

What we have learned

– Organic production is a highly integrated system
Focus of Organics

The focus of the Organic System

- **The Consumer**: Preference - Health and Quality
- **The Grower**: Economics and Ethos, Family and Friends
- **The Environment** and Sustainability
- **Supporting Agriculture**;
  - Families, communities, economies, culture, heritage