Key Considerations in Planning and Managing an Apple Orchard Organically

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Key Considerations

• Locally, organically grown apples are in demand
• How will you meet that demand?
  – Direct to consumer sales
    • On-farm sales, farmers’ markets, CSAs
    • U-Pick
    • Restaurants
  – Wholesale
    • Lower price for high volume; Competition with WA apples
  – Value-added products – have a plan
Key Planning Considerations

• Site Selection
• Cultivar Selection
• Rootstock and Tree Density
• Site Preparation
• Soil Amendments
• Final Layout
Key Management Considerations

- It’s an integrated, systems approach!
- Soil Fertility, Tree Health
- Orchard Floor Management
- Insect and Disease Management
- Thinning
- Record Keeping
Site Selection

- Elevation for good air drainage
- Well-drained soil
- Locating away from woods, brush, abandoned orchards*
Cultivar Selection

• Disease resistant cultivars
  – Plant some if not all disease resistant
  – Not all have same levels of resistance to each disease
Rootstock and Tree Density

• Hardiness of rootstocks
  – Cold
  – Diseases, insects*

• Dwarfing rootstocks
  – Produce sooner
  – More effectively manage*
  – More trees/acre
  – Most dwarfing need support, possibly water
  – Example: Bud-9
Site Preparation

- Build up the soil
- Reduce weed competition
- Start 3 years out if possible
- Till cover crops into the soil
- Smooth the land
- If nothing else, fall plow
Soil Health, Tree Health

• Take soil samples
• Amend soil accordingly
• Build soil organic matter*
• Nutrient additions to tank mixes
  – Fish
  – Kelp
  – Neem oil – for both health and insect pests
Orchard Layout

• Square is best
  – Reduces amount of perimeter*
  – Favors pest trapping and monitoring*

• Group varieties according to ripening
• Plant early blooming cultivars down slope
Orchard Floor Management

- Weed competition – esp. first years
- Affects apple scab disease
- Soil fertility
- Beneficial insect habitat
- Pollinator habitat
- Voles, mice
Insects to Manage

• Major insect pests
  – Plum curculio
  – Codling moth
  – Apple maggot

• Minor insect pests
  – Leaf rollers
  – Leaf miners?

Plum curculio
Insects to Manage

• Plum Curculio
  – Push-pull strategies, Michigan State University
    • Surround WP on tree canopy, interior rows
    • Pyganic on perimeter rows at night
      – According to degree days and scouting
  – Livestock?
    • Poultry
    • Piglets - rotationally grazed
Insects to Manage

• Codling Moth
  – Degree-day modeling
  – Pheromone-based mating disruption
  – Granulosis virus
  – Surround WP

• Leaf rollers
  – Bt at pink; later in tank mixes
  – Beneficial insects!!
Insects to Manage

• Mites are not an issue
  – Due to predatory mites
  – Unless too much S is applied

Predatory Phytoseiid mite larva, nymph and adult (l. to r.)
Diseases

- Apple Scab
- Fireblight
- Cedar Apple Rust
- Powdery Mildew
- Rots
Fire Blight

• Fixed Copper by half-inch green
• Use fire blight model(s)
  – Maryblyt
  – Cougarblight
• Streptomycin if model indicates needed
Apple Scab

- Understand the life cycle of scab
- Use degree-day monitoring
- Mow leaves to encourage decomposition
- Sulfur – elemental S prior to rain
- Lime-sulfur - for back action
- Include liquid fertilizers in sprays
Thinning

- Fish oil and lime sulfur at bloom
- Salt water at bloom
- Hand thinning
Record Keeping

• Do what works for you
• But do it!
• When, What, Rates, Where, (Why)
Resources

- Organic Tree Fruit Association
Organic Tree Fruit Association

- Midwest Organic Tree Fruit Growers Network:
  - newsletters, web-based info
- [www.mosesorganic.org/treefruit/intro.htm](http://www.mosesorganic.org/treefruit/intro.htm)
- Four fact sheets:
  - Considering Risk Before Starting an Organic Orchard
  - Planning the Organic Orchard
  - Organic Tree Fruit Certification
  - Resources for Organic Orchardists
Organic Tree Fruit Association

• Field days
• Newsletter
• Research
• Advocacy