

# 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

- *The Apple Grower: A Guide for the Organic Orchardist*, by Michael Phillips
- *A Grower's Guide to Organic Apples*, Cornell University, IPM Publication 223
- 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