

Orchard Establishment: The Early Years of Sustainability

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Your Objective

- To develop an orchard that will be sustainably productive for years
 - To have a good orchard eco-system
 - To have productive trees
 - To have trees that produce high quality fruit
 - To have fruit for which consumers will pay
- Set and Strive for GOALS
 - Achieve first yield in season 3
 - Achieve FULL yield by season 5-7; annual yields
 - To make \$\$\$
 - To be environmentally sustainable

Ten Steps to Remember

#10. PLAN Ahead

- Develop a good set of plans
 - Use all your resources while planning
 - Be detailed, objective oriented
 - Set goals
 - Think ahead
 - Plan for the best of times
 - Plan for the "Worst Case Scenario"
- Invest in the orchard
 - Cutting corners can be costly in the long-run

#9. Select the Best Site

- Match the site to your crops and trees
- In your site, look for
 - Good site elevation and exposure
 - Good soils
 - Good water
 - Good Markets
- Match crops and cultivars to site and soils
 - Late blooming crops in "low" areas; early blooming crops in the "high" areas
 - As much as 3-5 feet can make a difference
 - Put apples, asian pears, blackberries on "heavy" soils; peaches, blueberries, strawberries on "light" soils
- Rotate crops periodically
 - Blocks should be replaced periodically
 - Young trees generally produce larger, higher quality fruit
 - Need newer cultivars to meet consumer demand

#8. Prepare the site and soil

- Assess the soil for pH and nutrient content
- "Rip and Lime"
 - Correct soil pH prior to any surface/subsurface work; season before planting
 - Correct all surface and subsurface drainage
 - Ripping 20-30" will eliminate compaction zones
 - Add any nutrients that are needed and hard to correct after planting; esp Ca, P, K, Mg
- Eliminate noxious weed pests;
 - Especially Bermudagrass, Johnsongrass, bindweed, etc.
- Establish a good cover crop; esp fescue
- Develop rows;
 - in heavy soils and low areas build berms

#7. Good Cultivars and Stocks

- Select recommended cultivars
 - Adapted to the region
 - Desirable for YOUR market
- Use recommended rootstocks
- Match Rootstocks to training system and planting density
- Tree Size (in apples at least) at planting DOES matter

Rootstocks to Remember

- Apple Rootstocks
 - 700-900 trees/acre: B.9, M.9
 - 500-800 trees/acre: M.9, M.26, CG.16
 - 300-500 trees/acre: M.106, CG.30
- Peach Rootstocks
 - Lovell, Bailey, Halford
 - Guardian

#6. Establish Irrigation

- Have the irrigation established prior to planting
- The frequency of dry springs (esp Feb, Mar, Apr) is increasing and newly planted trees will need water
- Causes less disruption to orchard

#5. Plant trees correctly

- Plant trees at correct time of year
 1. Best time: Nov 1- Dec 15
 2. Next Best time: Feb 1 - Mar 15
- Plant trees with bud of graft union 6-8" above soil line
 - Not lower; Not higher!

#4. Train Young Trees

- Training is more important than pruning young trees
 - Reduce pruning as possible
 - Pruning young trees delays and ultimately reduces cropping
 - Training encourages strong tree framework, encourages fruiting
- Have a goal to fill the allotted tree space in 3-4 growing seasons
 - Tree size is directly related to light interception and additional, future growth and productivity
 - After that time, fill-in that space

#3. Irrigate young trees

- Minimize water stress
 - Water is commonly the most limiting factor in establishing a young orchard
 - Young trees have very small, confined, but very dense root systems; they can dry out their rhizosphere quickly while most of the orchard soil seems "ok"

#2. Develop a Strong IPM

- Identify key pests
 - Diseases, insects, weeds, animals
- Develop the IPM program for each pest
 - "An ounce of prevention is worth a pound of cure";
 - e.g. prevent the problem from becoming a problem
- Match your IPM to your skill level, your region, your crops, and your Market

Some Key Pests

- Diseases
 - Fireblight, Cedar Apple Rust, Powdery Mildew, Scab, Bitter Rot, Black/White rots
- Insects
 - Scale, cutworms, plum curculio, codling moth, oriental fruit moth, Japanese Beetle, Green June Beetle,
- Weeds
 - Bermudagrass, Johnsongrass, bindweed, nutsedge
- Animals
 - Deer, rabbits, field mice (voles), gophers

#1. Reduce Stress

- Eliminate nutrient stress
 - (soil pH, insufficient or excess nutrients)
- Eliminate water stress
- Eliminate pest stress;
 - especially weeds and foliar diseases during the establishment years

Summary

- Establishing a sustainably productive new orchard or renewed block
 - Requires Detailed, Advanced Planning
 - Goal Setting
 - Requires intense, modern objective management
 - Requires continuous education and experimentation
 - Requires investing for the future