Starting a High Density Orchard

Year 1 – Planning is Critical. You can't do too much prep work

- Select the site, decide where the rows will go, and measure to determine the MAX number of trees that will fit
  - I started with 10' Rows with 3' between trees. I'm now doing 12' rows as 10' was too tight.
  - Leave 35' at end of rows for turning equipment and 35' on edges of orchard
  - Allow 20' from last tree in row for End Posts and anchors TOTAL = 55'
  - Consider having some ground devoted to pollinators
  - Pay attention to drainage (WHEN IT IS WET!) and soil type – you may want to not plant trees in some areas of your proposed site
- How many Trees do you want or need?
  - Start with the Max your space allows and then ask yourself -- Do you want to do the work yourself, or have labor?
  - Business Case? It's a circular problem so use a Spreadsheet.
- Order Trees
  - Plan on 2 year lead time for large orders
- Test soil and Plan to adjust PH in YEAR 2
  - Slightly acidic – PH levels of 6 to 6.5 are good
- Remove any trees that are in the way

Sample Business Case Calculations (Numbers for Illustration)

How many trees do you want?	15,000
How many Trees fit?	10,000
Expense to Build Orchard (HIGH)	$250,000
Capital Expenses for Equipment (HIGH)	$250,000
Trees surviving to Year 7 (90%)	9,000
Low Yield by year 7 (1 bushel per tree)	9,000
LOW price for Harvest - $9/bushel	$81,000
Annual Maintenance and Harvest Costs (HIGH)	$45,000
EBITDA	$36,000
Return on Investment	7.2%
Does that work for you?	YES/NO

- If not, make adjustments and recalculate
- If so, go build your orchard!

Year 2 - Prepare

- Determine supplies needed to build trellis
  - 14' Posts - Row Posts (4") 30 feet apart with 2 extra at each end. The Extra posts are to allow you to have support wire at the right height almost to the end of the row.
  - Wire - 4 wires with lowest wire at 4 ft – Allow extra for waste and for twisting to connect end posts to anchors.
  - 14' End Posts (6") and anchors (2 per row)
  - leader poles (1 per tree), clips (4 per tree), row #'s (2 per row)
- Order supplies – Posts have longest lead time
- Arrange for Equipment (Buy, Lease, Borrow)
  - Planter, Post Pounder, Wire unwinder, auger
- Till the ground, adjust PH if needed and plant cover crop in the fall
- Order a weather Monitor and connect to a University system for updates on when to spray
  - I use Cornell University
- Get your Pesticide Applicator Certificate if you don't already have one

Year 3 – Plant and Build!

- Arrange for labor to help plant and build the trellis
  - I used 4 high school grads – I only needed 3 but having 4 worked well
- Plant trees!
- Pound Posts and build trellis
- If possible, watch for fire blight and other pests and spray when needed.
  - I didn't have time or weather didn't cooperate
- Maintenance
  - Mow!
  - Spray along rows to prevent grass and weeds around trunks

Long Lane Orchard DIRECT costs of establishing a 14 Acre, 14,000 tree Orchard

Item	Expense
Field Prep (Clear Trees, Plant cover crops)	$24,626
Trees – Including Shipping	$165,898
Posts - Including Shipping	$70,225
Leader Poles – Including Shipping	$34,837
Wire, Staples, Anchors	$16,907
Clips for Leader Poles	$5,195
AG Lock Ties	$5,633
Labor – Including Workers Comp	$63,643
Chemicals and Diesel	$6,181
Grass and Clover Seed	$4,447
Row Numbers and Misc.	$458
	$398,080
1,000 trees per Acre, 14 Acres -- Per Acre Cost	**$28,434.29**

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