The Tall Spindle Apple (TSA) -- critical steps to success

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First, let me tell you what excites me about the Tall Spindle Apple production system (TSA). It's what Terence Robinson (TR), Cornell University says about it: "The tall spindle system is the path to becoming fabulously wealthy." I believe it, but you must pay attention to details when growing the TSA.

TSA planting system basics

High tree density. TSA is a high planting density system at 1,200 trees per acre, 3 ft. X 12 ft. spacing is the standard. You can go as low as 900 trees per acre (app. 4 ft. X 12 ft.) with more vigorous scion/rootstock combinations.

Fully dwarfing rootstocks are used. These include, for example, Bud. 9, M.9 clones, Geneva 11, 16, and 41. Ottawa 3 and Vineland 3 are options if available.

You should plant high quality, feathered nursery trees. Preferably with 5-10 (or more) feathers (small branches). Trees should be 1/2" minimum caliper, 5/8" even better. Branches should not be too low on the tree (you would have to cut them off!) and trees should have a high graft union. Order trees early (2-3 years ahead of planting year), do your best to obtain and plant high quality trees!

High planting depth. Trees need to be planted with the graft union 4 to 6 inches above the ground. Caution: burr knots can become numerous with this high planting depth and attract dogwood borer.

Minimal pruning at planting. Trees are not headed. Remove low branches (less than knee height) and those breaking the 50% rule (diameter-based pruning) are removed. Leave as many feathers as possible without compromising growth of the leader. This should result in 2nd leaf crop.

Branch bending in first leaf. Remaining branches bent below horizontal at planting. First leaf only. Use wire or string. Very important to bend branches in first leaf to get 2nd leaf yield.

Superior support system. Based on pressure treated (or long-lasting alternative) end and line posts with hi-tensile wire. Use 5-6 inch diameter for end posts, 4-5 inch for line posts, all preferably driven (or alternately, but not as good, augered) 3 feet into the ground. Line posts should be installed every 40 to 45 feet (no farther!). Use 3-4 wires of 12.5 gauge hi-tensile wire down the row spaced 2-3 feet between wires. 'U-Hooks' of the large size (3 inch) are used to attach the trees to the wire. (Purchase from oescoinc.com or peachridge.com.) Trees should be supported ASAP after planting.

Trickle irrigation is a must with dwarf rootstocks assuring good growth during periods of dryness. Netafim 'RAM' tubing (24-inch emitter spacing, 0.4 gallons per hour) is recommended. Add fertigation if possible. It's really not that hard, contact Brookdale Farm in Hollis, NH for irrigation supplies and information.

How much does it cost per acre to establish a TSA planting?

A lot -- count on $10-15,000 per acre depending on tree density and cost. So what does this get you? High early yields! Target yields per acre are:

- 2nd leaf = 200 bushels
- 3rd leaf = 500 bushels
- 4th leaf = 1,000 bushels
- 5th leaf = 1,400 bushels

3,100 bushels total! You do the math: 3,100 X $40 retail (for Honeycrisp, at least) = $124,000 gross sales. Hence, as TR says "Fabulous yields in early years!" You CAN make a lot of money growing the TSA.

4 rules of mature TSA tree pruning

Rule 1: Limit tree height to no more than row spacing, preferably a little shorter. Don't cut leader until the tree reaches optimum height (app. 0.9 times row spacing). When the leader has to be cut, prune leader to fruitful side branch.

Rule 2: Remove 2-3 of the largest branches per year. These are typically greater than ¾ inch diameter (quarter-size) or longer than 3 feet. Prune lower branches first, then upper; but don't leave large branches in top of tree. Use bevel cuts (aka 'Dutch cuts') to stimulate new shoot growth/branch replacement. Resist the urge to over-prune, but remember what TR says: "Large branches create large trees."

Rule 3: Simplify remaining branches. No forks ("forks belong on the dinner table"). Branches should be of a single axis (columnar), typically somewhat pendant nature.

Rule 4 (optional, depending on variety): Cut back pendant, weak wood on varieties such as Gala, Fuji that over-crop and have small fruit. Or, remove entirely weak branches. Pencil size (diameter) fruiting wood is ideal. This should help prevent over-cropping and small fruit.

Summary of TSA

In summary, selling points of the TSA include:

. Optimum economic tree density
a. High early production (assuming feathered trees)
b. High light interception (70-75%) as long as tree height = 0.9 X row width (app. 10-11 feet tall trees, no shorter, not taller)
c. Good light distribution with a thin, conical canopy; no permanent branches; and columnar/simple fruiting branches. Result is high fruit quality throughout canopy.
d. Improved labor efficiency -- simplified pruning, potential for partial mechanization of pruning and harvest
e. **Bottom line: TSA = happy grower!**

What's next?

. Plant one-half to one acre (600 – 1,200 trees)
a. Order trees ahead of time
b. Prepare site
c. Plant early
. Build superior support structure
a. Irrigate/fertilize
b. Pick fruit in following year
c. Make money $$$$$

For more information

http://www.tallspindleapple.com