

Common Mistakes to Avoid When Planting, Establishing, and Training Spindle Apple Trees

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We are finding that it is critical that you invest the necessary time and effort to manage feathers of a young Tall Spindle orchard if the trees are growing vigorously. For example, all feathers on Fuji (a vigorous apple cultivar) should be tied or weighted down below the horizontal at planting or before mid July to induce cropping and to prevent them from developing into large lower scaffolds. Feathers should not be shortened by pruning during their first year.

The steeper the angle of a feather, the stronger it will grow and the less fruit it will bear. The more horizontal a feather, the shorter it will grow and the more fruit and flower buds it will bear. Therefore, the pendant position of a feather “artificially bent below horizontal” results in a weak fruiting branch instead of a strong scaffold branch with a lot more fruiting potential (more buds are allowed to break and grow into fruitful shoots or spurs).

Fuji or Macoun feathers that are not tied down soon after planting will develop as strong upwardly arched limbs and will be problematic for the close 3-4 feet in-row spacing of the Tall Spindle system. These strong feathers will require severe (and unfortunately unneeded!) limb removal pruning at an early age, which invigorates the tree and makes long-term canopy containment problematic. Early branch management of the more vigorous apple cultivars allows for long-term cropping of many of the original feathers and little invasive pruning for the first 4-5 years of the Tall Spindle system. Even when feathers are tied down below horizontal, it is not uncommon for the new growth of Fuji or Macoun to turn toward vertical after tying. However, the initial tying down “tames” the branch and induces cropping in the second and third year, which will limit branch growth.

Tying is best done within one month after planting but can also be done in June, July, and even until August, (the latter is more difficult due to the presence of new growth and foliage and because the time required to tie down feathers below horizontal may be considerable longer and more expensive). Branch bending can be accomplished by attaching weights to the feather (poured concrete into small cans or cups, a piece of wood, rocks etc.) but selecting the adequate weight for a feather to be bent below horizontal may be difficult. Also, feathers can’t always be placed in the desired position. We have found the following materials to be particularly suitable for tying down feathers below horizontal for the Tall Spindle system: (1) a strip of 5/8”-wide Avis-strap nailed or tied from the base of the trunk then split into strands and tied to each of the lower feathers, (2) a pre-cut 20-inch black annealed wire (sold as a 1000 pieces/bundle) each

hooked around the feather directly down to the trellis wires, the conduit pipe or bamboo supporting pole, or the main trunk, and (3) a 4-inch long ghent rubber band (six-month-life with 880 rubber bands per bag) where the rubber band is tied on the trunk and the feather is placed through the band when it is stretched out. After about 4-6 months the rubber band stretches and is less effective for strong feathers while Avis-strap strings and the pre-cut black annealed wire are suitable for bending both weak and vigorous feathers.

Branch management research conducted by graduate student Leo Dominguez in Geneva has shown that bending 5 or 10 feathers below horizontal after planting significantly increased the number of spurs developed in Gala, Honeycrisp, Macoun, Jonagold and Fuji Tall Spindle trees. Bending feathers changed their crotch angle, retarded their longitudinal growth, and had a positive influence on cropping.

The tying down of feathers will be more critical if you plant a more vigorous apple cultivar with 8 or more long feathers. After the initial tying down of feathers at planting, new lateral branches that arise along the leader usually do not need to be tied down under NY orchard conditions. Most apple cultivars have moderate tree vigor and if the leader is not headed at planting the lateral shoots arising along the leader are often relatively flat and will bend below horizontal with crop load in the third year. This creates a natural balance between vigor and cropping without additional limb positioning.

We again remind growers that heading of the leader of a young apple tree is undesirable as it removes a significant portion of the tree structure already produced in the nursery. Even if a whip is planted, the leader is not pruned or headed at planting for the Tall Spindle system. Heading the leader disrupts and changes forever the natural growth and branching patterns of a young apple tree on a dwarfing rootstock intended to be grown as a Tall Spindle tree. We instead recommend applying Maxcel to stimulate branching of an “unheaded” whip so a more “calm tree” (without much new upright growth as result of the heading cut) can be produced in the orchard. However, we continue to recommend that growers plant the ideal tree which has a caliper of at least 5/8 inches with 8-10 feathers, each 10-16 inches long starting at a height of 24-26 inches above the ground, well distributed along the trunk, and with wide crotch angles. Feathers that are too low are not usable and must be removed after planting. We recommend that all feathers located below 24 inches be removed after planting for all apple cultivars.

Note: More orchard practices to avoid mistakes will be discussed during the presentation.