

Tall spindle system sends NY apple yields skyward

Key Points

- Higher yields and labor-saving platforms are key to payoff.
- Feathered branches, dwarf rootstock mark tall spindles.
- Tall spindle orchards projected to produce \$5,000 per acre net.

By KARA LYNN DUNN

HIGH-DENSITY, fully dwarf orchard systems are the future of New York's apple industry, contends Terence Robinson, a Cornell University horticulturist. That's a bold statement. But the proof is in the orchards of three fruit farms, as part of a three-year New York Farm Viability Institute-funded project.

The project goal, to modernize Empire State apple orchards, began with establishing tall spindle orchard systems. It was done in conjunction with trials comparing new rootstocks (Cornell-bred G.41, G.11 and G.935) and industry standards (M.9T337, Bud.9) suited to the system.

VanDeWalle Fruit Farms at Alton, N.Y., is growing Gala and Honeycrisp varieties in its new tall spindle orchard system.

"From the inception of the farm in 1983, we've continually invested in new orchards, planting increasing numbers of trees per acre," says Scott VanDeWalle, a partner in the business.

VanDeWalle has used many different planting systems.

"At this point, the tall spindle system combines elements of the slender spindle, vertical axis and super spindle. It'll be the orchard system we will be working with in the future," he predicts.

Tall spindle looks and pay

The tall spindle system spaces short, highly feathered (branched) trees at 2.5 to 3 feet between trees, and 10 to 13 feet between rows. Branches are trained to bend below horizontal for easier management.

Small fruiting branches attach to the trunk instead of to permanent scaffold branches. They're periodically renewed, notes Robinson.

A new orchard system costs about \$15,000 per acre. "Our long-term economic analysis comparing different orchard systems indicates each acre planted in a tall spindle system has potential to generate \$112,340 in positive cash flow



FRUITFUL SPINDLES: Scott Van DeWalle expects high apple yields in this high-population planting.

over its first 20 years," he adds.

"Opportunity for high, early and sustained yields helps offset the starting costs," elaborates VanDeWalle.

"Highly feathered trees will allow us to harvest apples from 1,000 to 1,400 trees per acre instead of 300 to 500 trees per acre."

"To establish the new orchard system, we followed due diligence with proper land preparation, tree spacing, trellis construction, startup pruning, irrigation, and fertigation. We also selected new rootstocks for strong survival rates, early production and smaller tree size."

The rootstocks require less pruning. "Being able to do all crop management from pruning to picking from ground level or by mechanized platform makes this system time and labor efficient," says this Wayne County

apple grower.

"This system results in higher yields per acre than traditional orchards."

And, Robinson adds, that use of labor-saving motorized platforms can reduce pruning costs by 30% and harvest costs by 20%.

Looking ahead

VanDeWalle expects to convert 30 acres a year to the tall spindle system.

"This is an exciting learning process as we add more acres into the new system and work to manage crop load per tree in the early years.

"We'll also develop better techniques of managing the mature canopy. Excessive shade can lower fruit quality," he adds.

Robinson calculates that by 2012, tall spindle orchards should generate about \$5,000

per acre in net income, compared to \$2,956 per year per acre in a central leader system. More than 40 New York growers now use tall spindle. "We expect that number to grow rapidly," Robinson adds.

For more information, contact Robinson at 315-787-2227, or e-mail him at tlr1@cornell.edu.

Dunn writes from her farm in Mannsville, N.Y.



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Crop Tech Update

Buy seed by seed count, not weight

It may take a couple of years to change seed marketing. But the seed industry is moving toward tagging all seed for sale by the seed count.

Greg Ruehle, CEO of the Independent Professional Seed Association, says his organization supports amending national standards to do so. IPSC has been joined by members of the National Seed Trade Association.

Agricultural seed is planted by count, or seeds per acre, in most cases, and seed companies prefer to market seed based on the units of measure most utilized by their customers.

First though, maximum variances have to be set.

Also, labeling requirements may need to be set for companies choosing to label contents by weight, by count or by both.

Honeybees can sting varroa mite nemesis

USDA's Agricultural Research Service has developed honeybees with a high expression of hygiene sensitive to varroa mites.

This genetic trait helps kick varroa mites out of the broodnest.

The mites have long been a parasitic nemesis to bees.

Honeybees often remove diseased brood from their nests.

But with this trait, they aggressively clean out and discard infected brood and mites from the wax-covered comb cells.

This hygiene kills the frail mite offspring.

Inoculant boosts the digestibility of fiber

Pioneer Hi-Bred's new 11GFT inoculant for grass and cereal crop silage aims to enhance dairy forage digestibility and reduce feed costs.

Following last year's introduction of 11CFT developed for corn, this product is exclusively for grass and cereal silage, and the first of its kind, says Kyle Whitaker, Pioneer's forage additive marketing manager for forage additives.

The inoculant stimulates "front-end" fermentation efficiency by rapidly dropping silage pH and helping to retain valuable nutrients, he explains.

It also increases neutral detergent fiber digestibility.

Another benefit is increased aerobic stability during feedout.

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