



Cornell University
Cooperative Extension

*Helping New Yorkers Improve their Lives
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CCE IMPACT: CCE AT WORK

Weed Control Is Critical To Profitability In New High-Density Orchards.

Issues/Needs: Thousands of acres of apple trees in NY are planted at very high density with 1000-2000 trees per acre with smaller root systems, narrower tree canopy, to produce more high quality fruit beginning in the 2nd leaf. But from these intensive systems arise questions about the best ground cover and weed management program. Our current research base for weed control in orchards is based on semi-dwarf orchards at 3x6 m spacing, and has not been tested in higher density, super spindle or tall spindle orchards planted at 0.5-1x3 m spacing. The Lake Ontario Fruit Advisory committee listed ground cover management and weed control as one of the top 5 pest management issues.

Response: CCE-LOF conducted on-farm replicated research demonstrations to compare various herbicides side-by-side in 2 farms in Western NY for 2 growing seasons. The project provided information about strengths and weaknesses of new herbicides on the market, impact on tree growth and resulting crop potential and crop value, and impact on soil health. The results of the project have been shared with 200 growers at each of 2 summer tours, an article published in the NY Fruit Quarterly with the first year impact circulated to 700 industry members, and 300 growers at the 2012 LOF Winter Fruit School.

Outcome/Impacts:

- Preplant weed control is critical to reduce perennial weed competition.
- No single herbicide application in these plots gave season long control.
- Tree growth was significantly reduced in new planting if left weedy.
- After 2 years, the potential crop value was increased by \$2300 per acre in the super spindle planting, and \$1200 per acre in tall spindle plantings compared to the weedy untreated plots.
- This project will convince growers how critical weed control is in establishing new high density orchards and recovering new orchard establishment costs.

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