

Mechanical harvesting: Overcoming obstacles and making the transition

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and
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During the 2010 Citrus Mechanical Harvesting Field Day and Workshop on April 21 at the UF/IFAS Southwest Florida Research and Education Center, experts with experience in cherries and sugarcane told how their respective commodities transitioned from hand to mechanical harvesting.

George McManus, a cherry grower and retired Michigan State county Extension agent, declared that when he started in the cherry business "... no self-respecting horticulturalist would allow a machine to shake the h*** out of their trees."

Yet, in the mid-1960s, Michigan cherry growers realized that changes had to occur or they'd go out of business. Regulations, increasing hand-labor costs, and the prospects of

unionization pushed Michigan growers to invest in mechanical harvesting. McManus described a fully-mechanized harvest system that saw four evolutions of machine design, the introduction of fruit abscission agents, tree skirting and several other horticultural adjustments in cherry production, along with a re-engineered processing operation. The feared collapse of cherry trees from trunk shaking did not occur. Most importantly, Michigan growers are harvesting cherries for



This cherry shaker was manufactured by Coe Orchard Equipment, which manufactured a trunk shake and catch system used in citrus several years ago.

Photo courtesy of King Orchards of Central Lake, Mich.

about 2 cents per pound. If hand-harvesting was still in place, costs would exceed 12 cents per pound.

Barney Eiland, a former agricultural engineer with the USDA-ARS, came to Florida in 1974 to work with other engineers to perfect mechanical harvesting of sugarcane. Eiland acknowledged many hiccups in machine design were experienced during the journey. But when growers became convinced that harvest costs could be reduced by at least 50 percent, the transition from hand to mechanical sugarcane harvest in Florida occurred almost overnight.

The most important insight shared by both Eiland and McManus was that successful adoption of mechanical harvesting required a coordinated and cooperative effort by all industry players, from production through processing.

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