

Field day addresses mechanical harvesting

By Barbara Hyman and Fritz Roka

To the audience of almost 50 attending the IFAS Citrus Mechanical Harvesting Field Day in Immokalee, the word of the day was abscission, better known as CMNP.

Jackie Burns, a University of Florida-IFAS horticulturist and lead researcher in citrus abscission, gave a brief overview of the IFAS Citrus Mechanical Harvesting Program.

The top topics addressed by the team were abscission management, machine enhancements and improvements, industry education and outreach, tree health, late season problems, and abscission registration. Other subjects receiving attention included economics, food safety and robotics.

Fritz Roka, an economist with the UF-IFAS, talked about the potential economic benefits from using an abscission agent. He pointed out that the biggest advantage from abscission agent application would be the ability to mechanically harvest throughout the Valencia season without adverse impacts on next year's fruit production. Abscission agent application should allow mechanical systems to harvest an additional four to six weeks at the end of the season.

Faster harvesting speeds is another important benefit. If sufficient trailer allocations permit, faster harvesting speeds could significantly improve a machine's overall efficiency and thereby lower unit costs for harvest. Because abscission agent application loosens mature fruit, Roka noted, a third benefit would be the reduction of machine force and thereby the amount of visible damage to the tree.

Several growers attending the field day expressed concern about tree damage from mechanical harvesters. They commented that the tree "looks" weaker after it has been mechanically harvested. Jim Syvertsen, a UF-IFAS plant physiologist, assured the group that a healthy, well irrigated citrus tree can compensate for the visible injuries that can occur in mechanical harvesting.

IN THE GROVE

The field day moved to the Silver Strand III grove where Burns led the group through a series of demonstrations designed to show the effects of abscission agent application on mechanical harvesting. First, attendees had a chance to "pull



Burns, right center, discusses abscission.

fruit" and feel the difference between a tree sprayed with the CMNP abscission agent and an unsprayed tree. Next, the group watched as a trunk shaker shook trees at full throttle and half throttle on trees with and without abscission agent application. Burns explained how this demonstration showed that the mechanical harvester could be operated at a lower throttle speed and, with abscission agent, still remove more than 95 percent of the fruit.

Like on other mechanical harvesting field days, the group observed the Oxbo Freedom 3200 machine, a continuous canopy shake and catch system. In addition, Oxbo highlighted new equipment, including a sprayer that may improve abscission agent application through more uniform coverage and a new fruit pick-up machine. This pick-up machine is designed to sweep fruit from under the tree canopy into the middle of a bed or swale where the fingers of the unit pick up fruit and convey it to a trailing goat.

The IFAS Citrus Mechanical Harvesting group hopes to hold several more field days in the fall and spring. The team would welcome suggestions for topics to include in the field days. Email suggestions to Barbara Hyman, brh@ifas.ufl.edu