



# A Healthy Harvest

Research proves that citrus mechanical harvesting can decrease costs while keeping yields high.

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To be competitive in an increasingly global marketplace, Florida citrus growers must reduce harvesting costs. Furthermore, immigration issues may force a substantial decrease in the available numbers of workers to harvest citrus. These concerns pushed the Florida Department of Citrus (FDOC) to re-examine the feasibility of mechanical harvesting for citrus. For the last few years, the FDOC and the University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS) have been supporting harvesting research and evaluating several mechanical harvesting machines and abscission chemicals to increase the efficiency of mechanical harvesting.

## Research Disproves Reservations

Despite the substantial cost savings of mechanical harvesting relative to conventional hand harvesting, the adoption of mechanical harvesting has been slower than expected. Many factors contribute to the slow acceptance of mechanical harvesting. One factor is the visible damage to the trees that can include breaking of branches, sloughing of trunk bark, exposing root systems, and noticeable leaf, flower, and young fruit drop. Growers worry that these visible signs of physical damage will have negative effects on tree health and future yields. When healthy, well-managed trees are mechanically harvested, there is no scientific evidence that these injuries negatively



*Many citrus growers have been slow to accept mechanical harvesting, but research shows that it does not compromise tree longevity.*

reduce tree yields or longevity.

For the last five years, several studies have focused on the physiological effects of mechanical harvesting. Short- and long-term physiological measurements revealed that the water use, growth, and yield of healthy, well-managed and well-prepared citrus trees was not negatively affected by mechanical harvesting — even when mechanically harvested annually for several consecutive years. The removal of healthy leaves by mechanical harvesting has no long-term effect on trees, and in some

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