

Mechanical Harvesting Has Little Effect on Citrus Tree Health



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THERE ARE VISIBLE INJURIES CAUSED BY MECHANICAL HARVESTING:



Defoliation – Some leaf loss from canopy and trunk shakers is unavoidable. Depending on the shaker aggressiveness, a 5 to 13% loss of leaf area is possible.



Petal fall – Mechanical harvesting with either canopy or trunk shakers during bloom can cause marked petal fall but < 12% of fruitlets were removed.



Bark scuffing – Trunk shakers occasionally scuff bark off trunks and some damage frequently occurred on major limbs from canopy shakers.



Root exposure – Canopy shakers do not cause root exposure but trunk shakers frequently expose surface roots.



CONCLUSION – The minor injuries that occur during mechanical harvesting do not affect tree health and return yield. Although mechanical harvesting after May 1 can remove young fruit and reduce yield of the next crop, the use of a suitable abscission agent with less aggressive mechanical harvesting will make late season harvesting possible.



DO SUCH INJURIES AFFECT CITRUS TREE HEALTH?



Canopy function – The moderate defoliation caused by mechanical harvesting does not affect canopy light interception or leaf photosynthesis. Mechanical harvesting does not significantly reduce canopy leaf area or return bloom the following year.



Fruit growth – Most fruitlets remain on the tree after mechanical harvesting. Mechanical harvesting at bloom does not reduce final fruit set or young fruit growth.



Bark recovery – Injured bark on trunks or limbs of healthy trees, even re-injured bark in subsequent years, was replaced within the year. No increased pathogen infection or pest invasions were noted.



Root growth & function – in well managed groves, trunk shaking had little affect on root growth or root function as measured by water and nutrient uptake.

