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Mechanical Citrus Harvesting



Current Challenges of Mechanical Harvesting Technology for Citrus



Continuous Canopy Shake & Catch

Issues

- Trash issue
- Machine enhancement
- Trash detection



Citrus and Trash Combination

Concerns

- Trash awareness and associated expenses
- Hauling trash, equipment damage and downtime

Associated Variables

- Season
- Mechanical harvesting methods
- Citrus variety
- Percent of vulnerable branches
- Harvesting rates and approaches

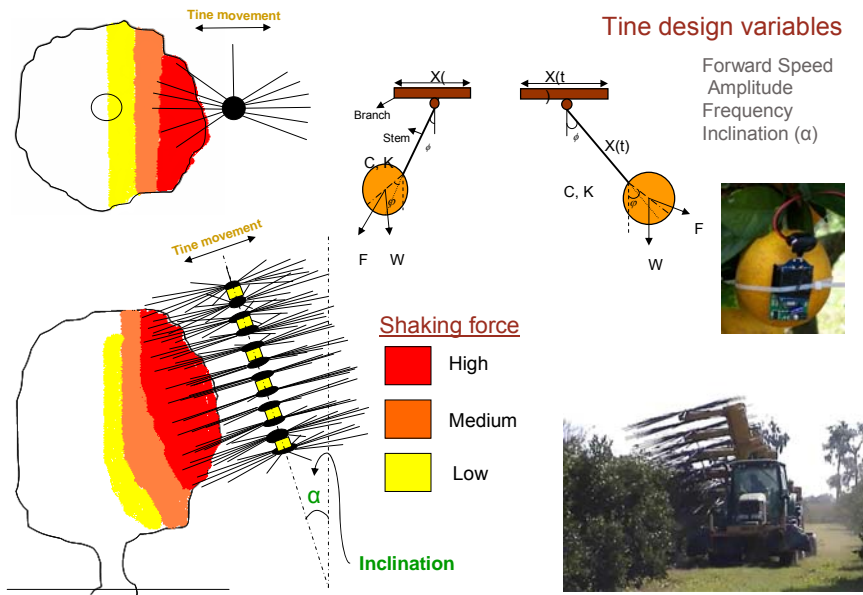


Citrus Orchard

Reduce the Amount of Trash by - Precision Agricultural Methods -

- Incorporate a **Variable Rate Shaking System** that recognizes various tree sizes, thus provides the appropriate shaking force, which minimizes trash

Force Distribution in the Tree Canopy during Mechanical Harvesting



- Monitor fruit removal forces
- Monitor force distribution in the canopy



Four band Sensor

- Incorporate **Abscission Compound** for timely and uniform citrus fall, reducing tree force, thus breakage and trash.



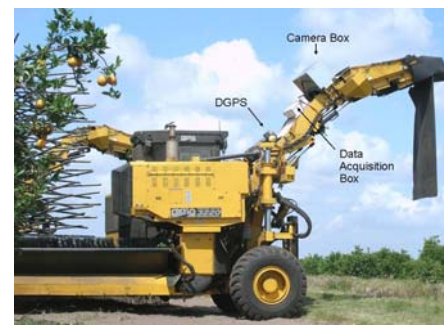
Citrus Tree



Impact Plate

- Incorporate an **Impact Plate** for citrus yield monitoring, which aids in distinguishing trash volume.

- Incorporate an **Imaging Process Trash Sensor** to provide the operator preventative trash related information.



Trash Sensor System