Mechanical Harvesting of Sweet Oranges for Juice Processing

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EQUIPMENT

Canopy Shake & Catch System - Pull Behind Oxbo International Corporation
Trunk Shake & Catch System Coe Collier
Canopy Shake & Catch System - Self Propelled Oxbo International Corporation

CROP MECHANICALLY HARVESTED

Mechanically Harvested Acres and Boxes

MOTIVATION FOR MECHANICAL HARVESTING

Illegally documented workers
Offset HLB related costs
Cost competition with Brazil

SIGNIFICANT OBSTACLES

Biological

- Tree damage
- HLB stress (MH & HLB stress)
- Late season Valencias (lower yield next year)

Institutional

- Trailer allocation (determined by juice plants)
- Limited Vertical Integration Grower ↓ Harvester ↓ Processor (all need to make profit)

Economic

- High capital cost ($1M+/set)
- Fruit recovery (80-85%) (need hand labor to glean)
- Cost of debris (10¢ per box) (cost borne by processors)

ANTICIPATED IMPACTS

- If mechanical harvesting fully adopted by industry, project a 50% savings in harvesting costs (from $1.80 to $0.90/box)
- Increase harvest labor productivity by 10X.
- Lessen reliance on foreign guest workers (H-2A)

STRUCTURAL CHANGES

- Cost advantage to larger growers, more efficient equipment utilization
- Workers shift from hand harvesters to equipment operators, higher earnings
- Harvesting costs shift from variable (labor) to fixed (equipment)