Mechanical Pruning and Harvesting
2008 - 2013

Louise Ferguson
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Bill Krueger and Elizabeth Fichtner
Rocky Hill Ranch
Burreson Ranch
ENE Inc. and Gold Country Hydraulics
Belle Carter Olives
Musco Family Olives
Mechanical + Hand Pruning

Traditional: 139 trees/Ac
2008 - 2013

Hedgerow: 202 trees/acre
2011 - 2013
Canopy Contact Prototype
Effect of Hedging and Topping on Yield
Average Annual: 2008 - 2013

5.3 tons/acre (2912 ft³)
4.2 tons/acre (1248 ft³)
Hedging and Topping Trial
Canopy Contact Harvester Efficiency
2013

81% efficiency
92% efficiency
Mechanically vs. Hand Pruned Hedgerow

Hand:
- 3.7 tons/acre
- 80% harvest efficiency

Mechanically:
- 4.3 tons/acre
- 81% harvest efficiency
Pruned trees:
180 trees/acre
$1,000.00/acre
30 - 40”/tree = 90 – 129 trees/hour
2 tons/hour
22/09/2012: > 95% acceptable

Hand harvested control
Trained Sensory Panels
Taste Test for Black Olives

1~3 pm
RMI Sensory Rm. 1000

Consumer Preference Panels

10~3 pm
RMI Sensory Rm. 2000
Neither panel could distinguish hand vs. mechanically harvested olives.
Mechanical Harvesting Progress Summary: 2008 -2013

– Trunk shaker
  • 77% efficiency
  • Grades = hand harvest
  • Commercially available

– Canopy Contact Harvester
  • 80 - 92% efficiency
  • Grades = hand harvest
  • Prototype with no catch frame
Mechanical Pruning + Harvesting
2014 Progress and Plans

- Rocky Hill Ranch: 139 trees/ace
  - Interior hand cuts: 3/25/2014
  - Mechanically hedged: 4/21/2013
  - crop failure

- Nickels Estate: 202 trees acre
  - Mechanically and hand pruned 5/16 + 28/2014
  - University of Cordoba Mechanical Harvesting Group
  - Testing two canopy contact harvesters
    - Prototype (EVA funding)
    - Double sided Coe (Argentinian purchaser)