

# Economics of Working Efficiently

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March 14, 2013

# Economic Projection Assumptions

- 265 acre farm – Tall Spindle 3 x 12
- Compare hand labor for dormant & summer pruning & hand thinning
- Annual shearing with hedger
- Detailed Dormant pruning 1 of 3 years, no dormant pruning 2 of 3 years – maintain a pruning crew by pruning 1/3 of farm each year.

Hedgers: Annual Summer Hedging, 1/3 farm: Dormant pruned annually OTRP, & Hand thinning w/ all 3 platforms

**Equipment Additions:**

**1 Over the Row (OTRP), Tractor Mounted Platform @ \$45,000**

**2 Between Row (BRP) Tractor Mounted Platform @ \$12,300**

**2 Hedgers @\$13,000.00**

**Total: \$ 82,600 investment**

# Annual Operating Expense Increases:

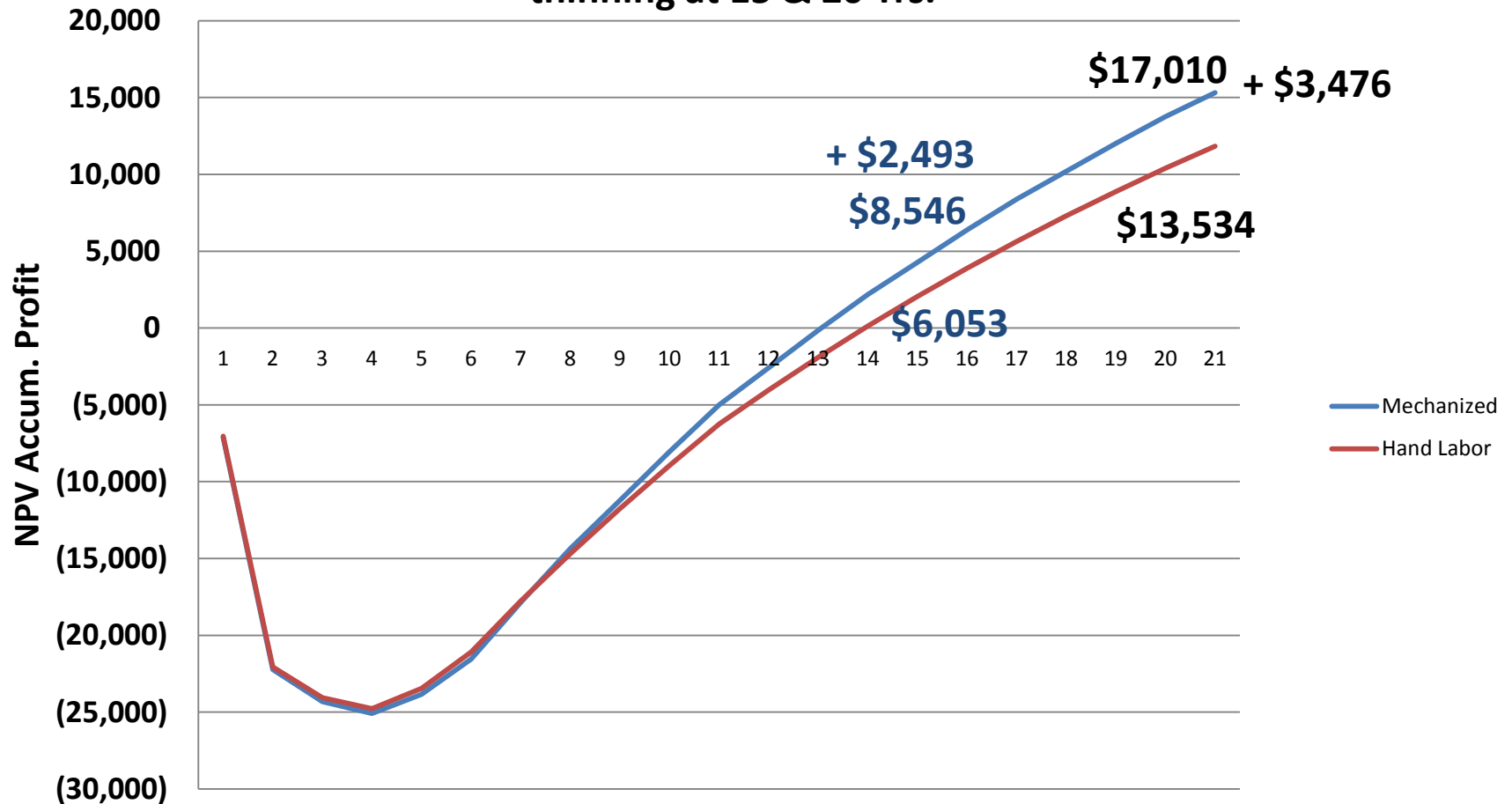
- **\$41.40** per fruit acre for repairs, maintenance, fuel, oil & lubrication

# Efficiencies: Beginning in Year 6

- **Dormant pruning:** Incr. labor efficiency by 30%
- **Hand thinning:** incr. efficiency by 25%
- **Summer Pruning:** no summer pruning – eliminate hand labor for summer pruning in 6 yr old plantings & older

# Efficiency Increases with Mechanization: Hedge Annually, Dormant Prune Once Every 3 yrs. w/ ORP, Hand Thin Using Between Row Platforms

**NPV Comparison: Mechanized VS Hand Labor for Pruning & Hand  
thinning at 15 & 20 Yrs.**



# Comparing Traditional to Mechanized

	<b>1,210 bu</b>	<b>ORP &amp; 2 BTP</b>
	<b>\$10/bu</b>	<b>w/ 2 Hedgers</b>
<b>15 Yr. NPV</b>	\$6,053	\$8,546
<b>20 Yr. NPV</b>	\$13,534	\$17,010
<b>Recoup Yr.</b>	13	13

# Is This Scenario Optimistic?

- Fruit Size has declined a size in Italy when hedgers are used every year
- Terence recommends dormant pruning in detail once every 3 years, to compensate for only summer pruning with a hedger.
- This projection assumes that fruit size will be maintained by detailed dormant pruning once every 3 years using an Over the Row Platform



# Further Study Required

- We need to more thoroughly study the benefits of platform use on:
  - Employee preferences (job becomes more pleasant)
    - Trudging thru snow, lugging equipment around when using ladders
  - Changes in management practices
  - Avoiding repetitive motion injury
  - To what extent can we truly eliminate hand labor
  - Effect of total mechanization on fruit size
  - Improving harvest efficiency