

What Yield, Harvest Cost, and Price are Profitable?



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Orchard assumptions for mechanical harvest



- 90% Manzanillo and 10% Sevillano
- 12' x 18' spacing, 203 trees per acre
- Trellis
- Double drip line on the ground
 - 36" apart, 1/2 gallon emitters
- 40 year orchard life

Orchard assumptions for hand harvest



- 90% Manzanillo and 10% Sevillano
- 22' x 22' spacing, 90 trees per acre
- Drip line on the ground
- 40 year orchard life

Additional considerations for mechanical harvest



- Additional suckering needed at establishment up to 36” for tree shakers to avoid knots on trees that could create pressure points and cause the shaker to slip off
- Quality seems to be acceptable
- Acceptance of mechanically harvested fruit can be a problem nonetheless

Estimated orchard establishment costs for mechanical harvest



	\$ per Acre
Trees, 203 @ \$6/tree	\$1,218
Level ground	\$500
Irrigation system with well	\$1,000
Trellis system and planting	\$1,000
Suckering	\$2
Cultural costs (pest control, fertilization, water, etc.)	\$300
TOTAL	\$4,020
Amortized over 40 years @ 7.65%	\$325

Estimated orchard establishment costs for hand harvest



	\$ per Acre
Trees, 90 @ \$6/tree	\$540
Level ground	\$500
Irrigation system with well	\$1,000
Trellis system and planting	—
Suckering	
Cultural costs (pest control, fertilization, water, etc.)	\$300
TOTAL	\$2,622
Amortized over 40 years @ 7.65%	\$212

Harvest cost assumptions



- **Hand harvest**
 - \$350 per ton custom to pick
 - \$19.50 per ton to haul

- **Mechanical harvest**
 - \$400 per acre to shake and catch ??????
 - \$19.50 per ton to haul

Harvest Cost Comparison

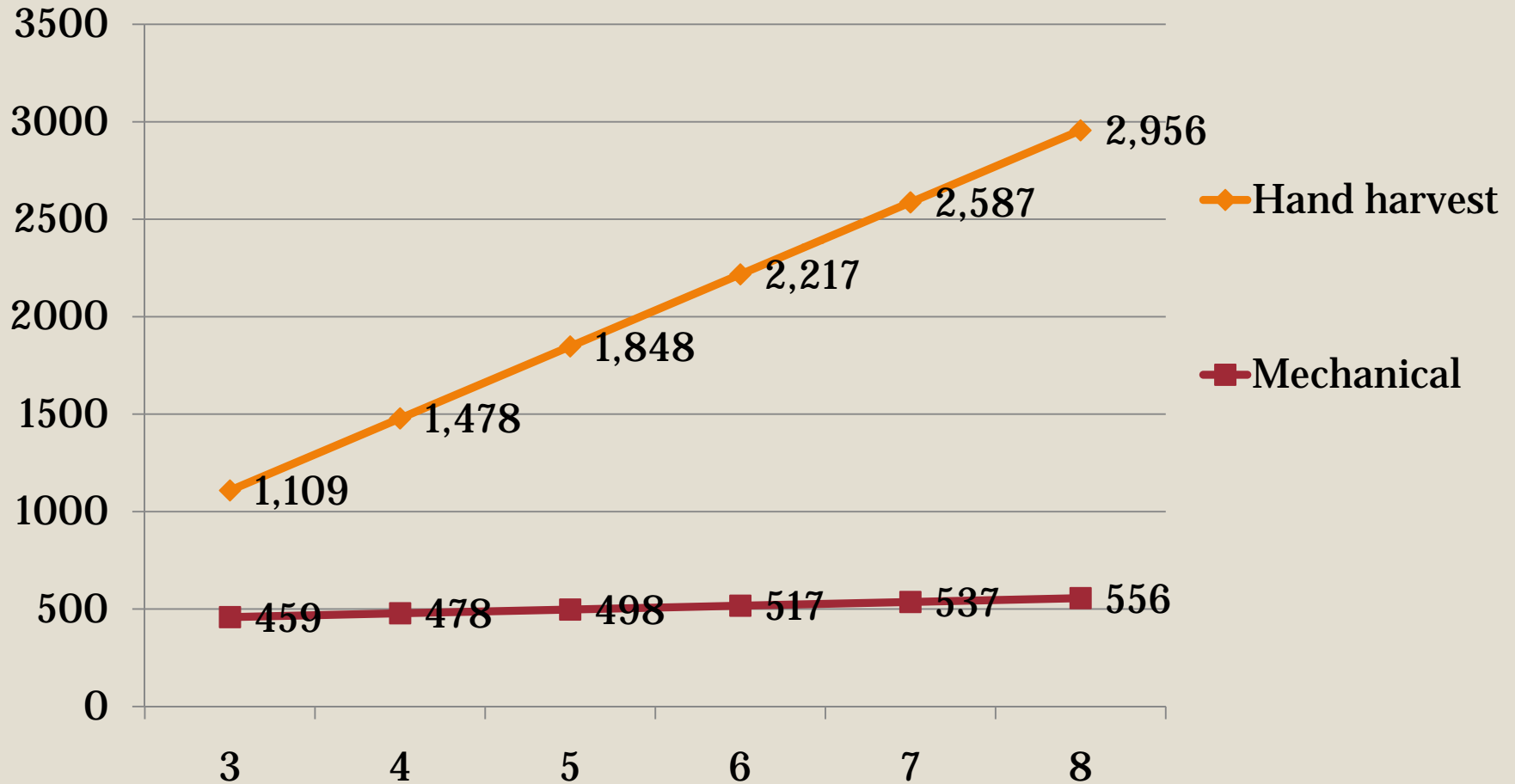


Table olives, hand harvest 5 tons

Total cost of production, \$4,481

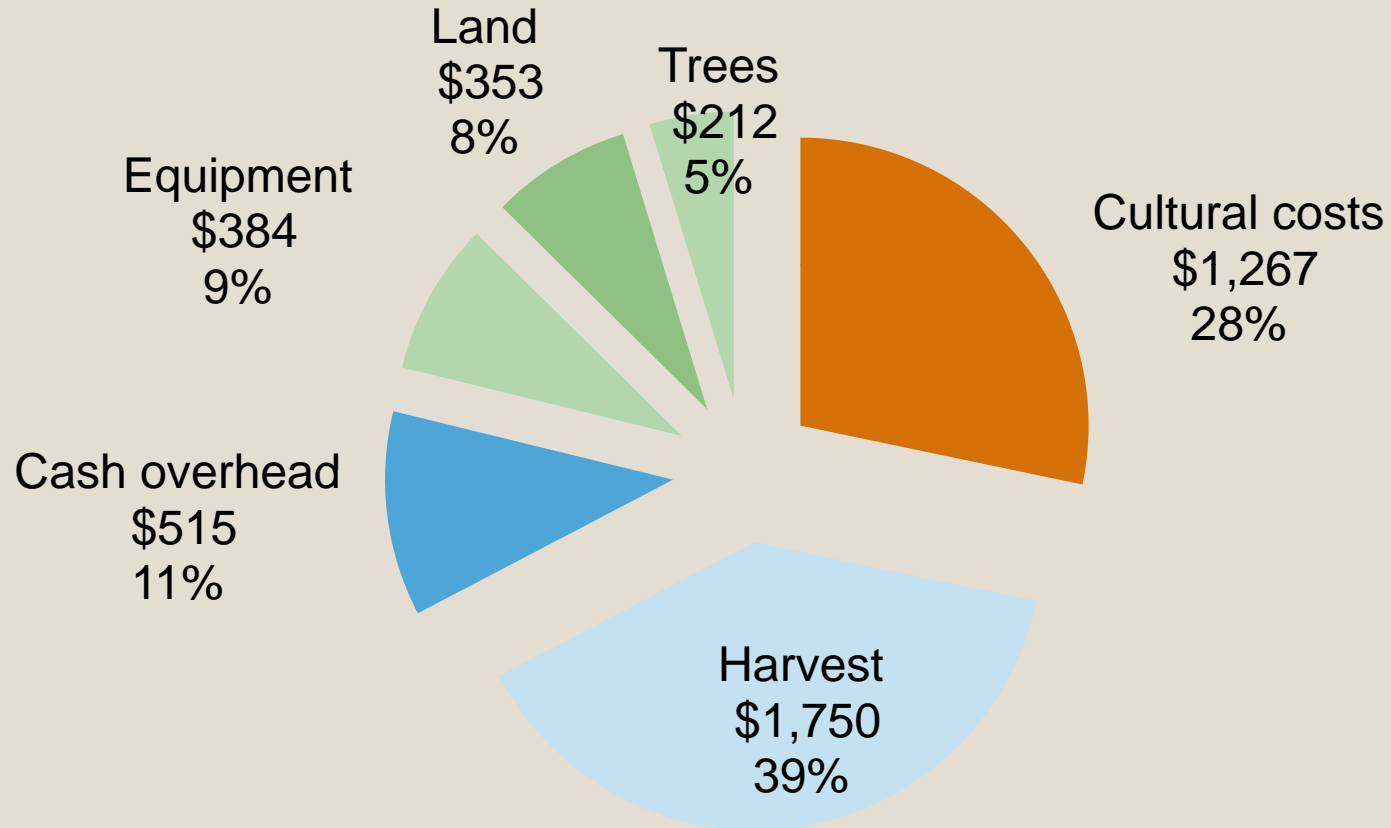


Table olives, mechanical harvest 5 tons

Total cost of production, \$3,322

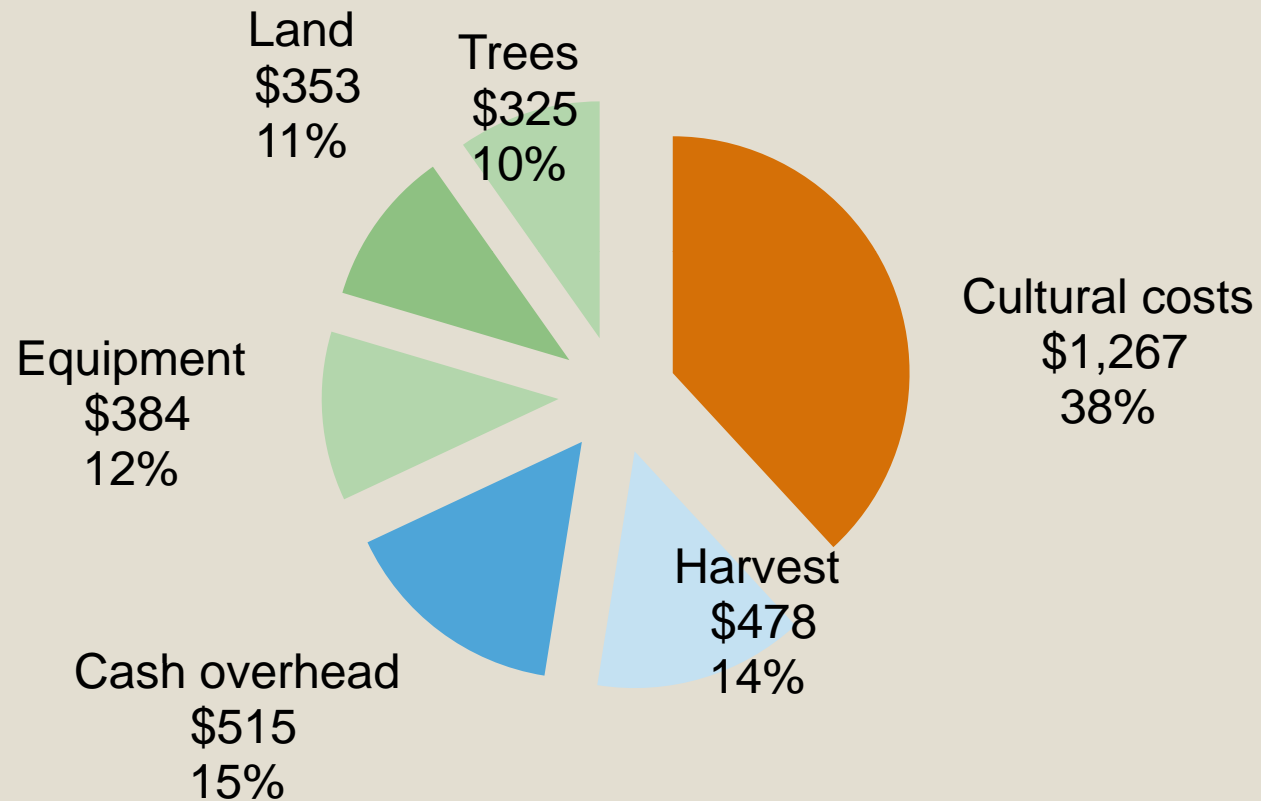


Table Olives mechanical and hand harvest

Total cost of production per acre

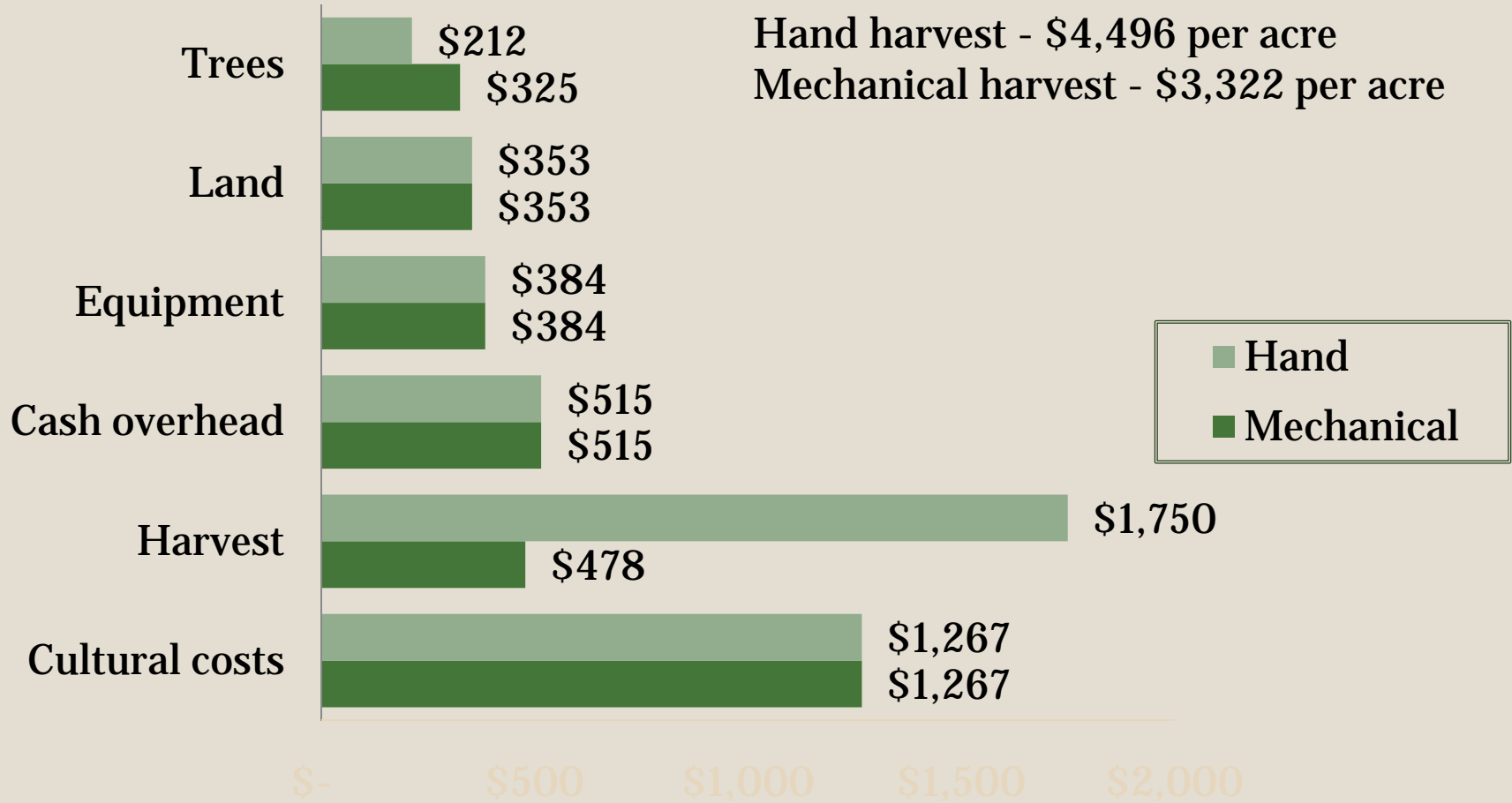


Table Olives – Expected Yields and Prices



- Expected yield range: 3.5 – 9 tons per acre
- Removal rate range: 60% – 80%
- Expected price range: \$675 - \$1,075 per ton

Table Olives – Hand and Mechanical Harvest

Total Costs per ton at varying yields

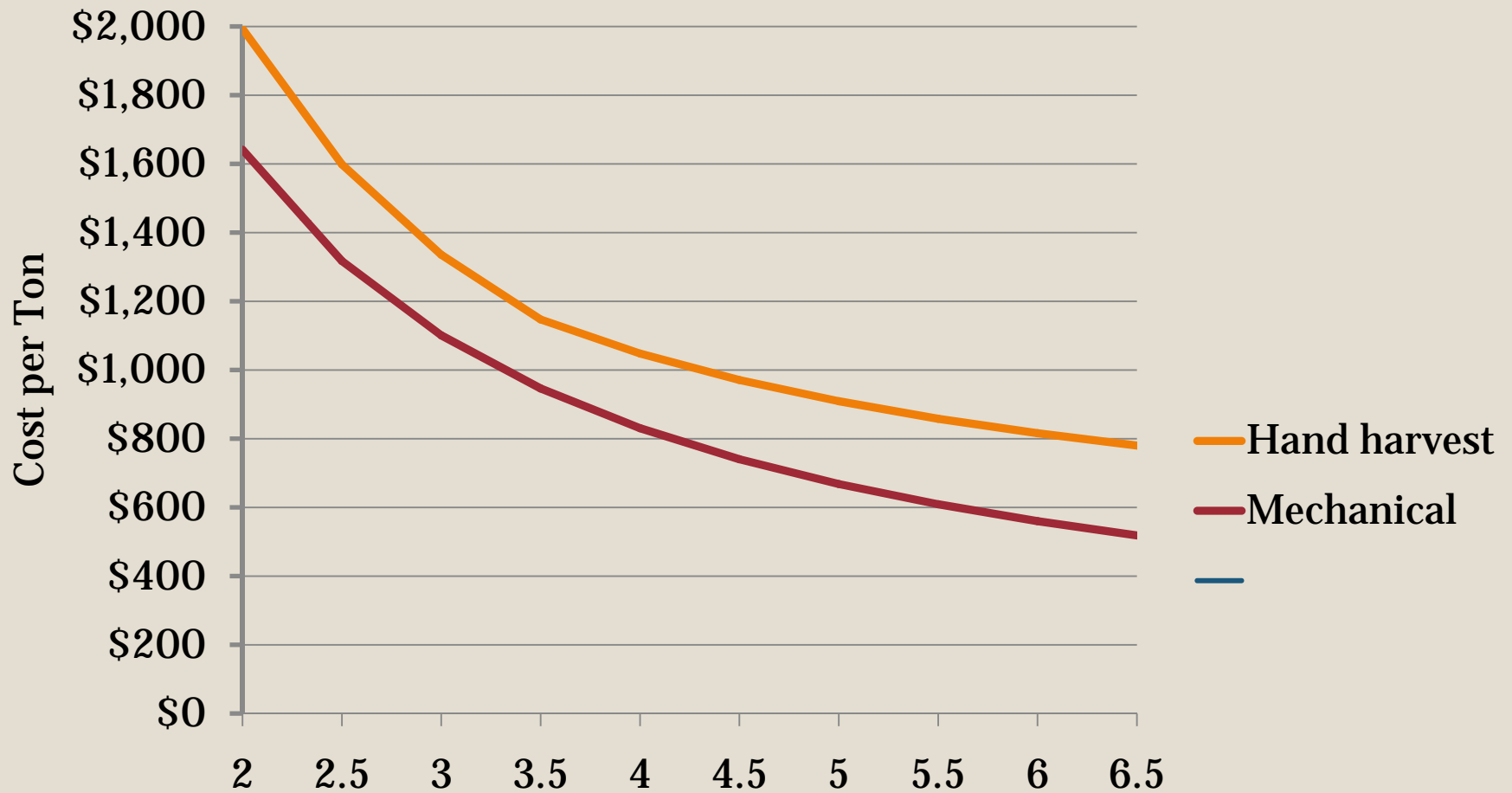


Table Olives – Hand and Mechanical Harvest

Total Costs per ton at varying yields

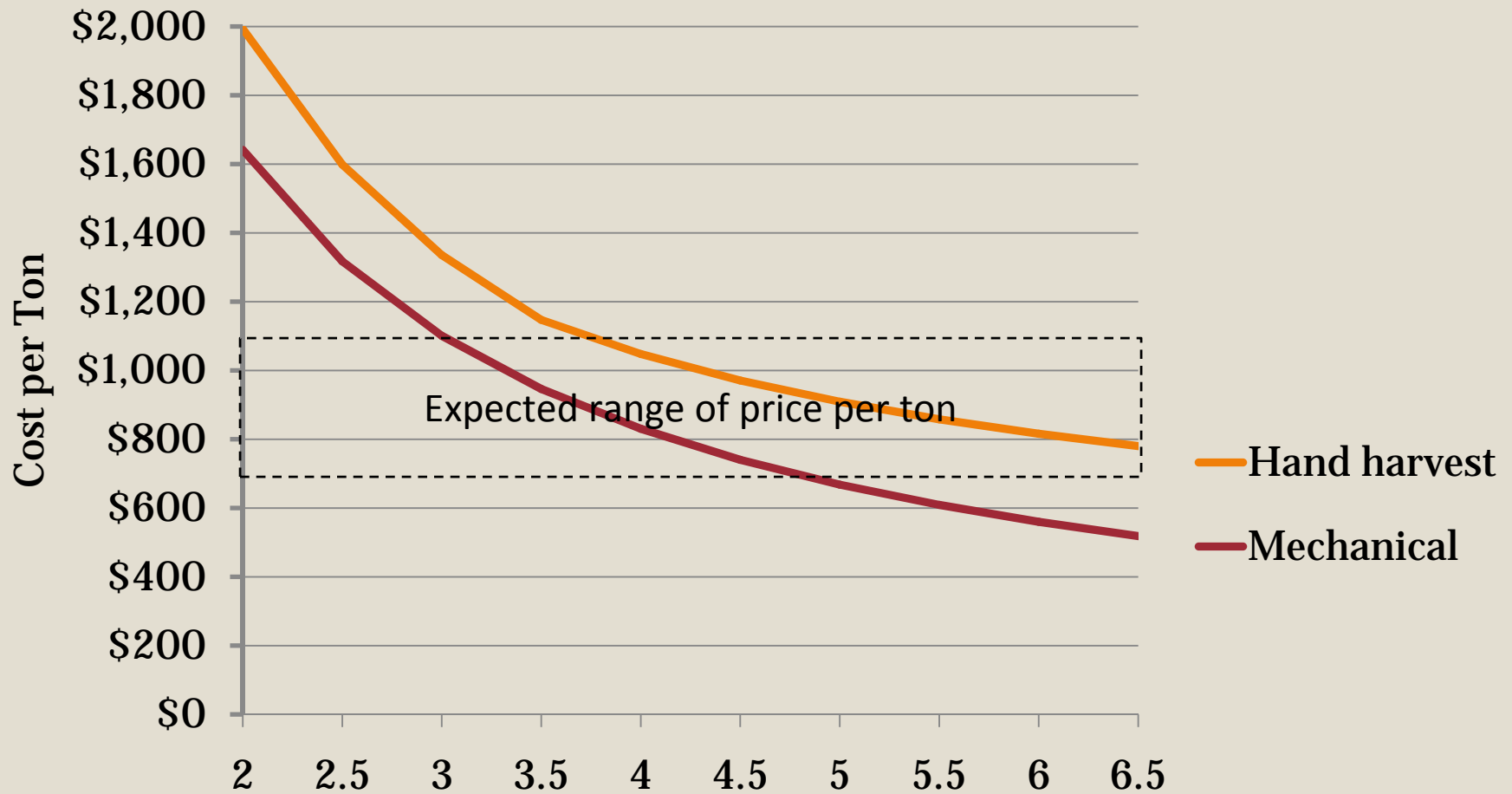


Table Olives – Hand and Mechanical Harvest

Breakeven yield at \$1,075 per ton

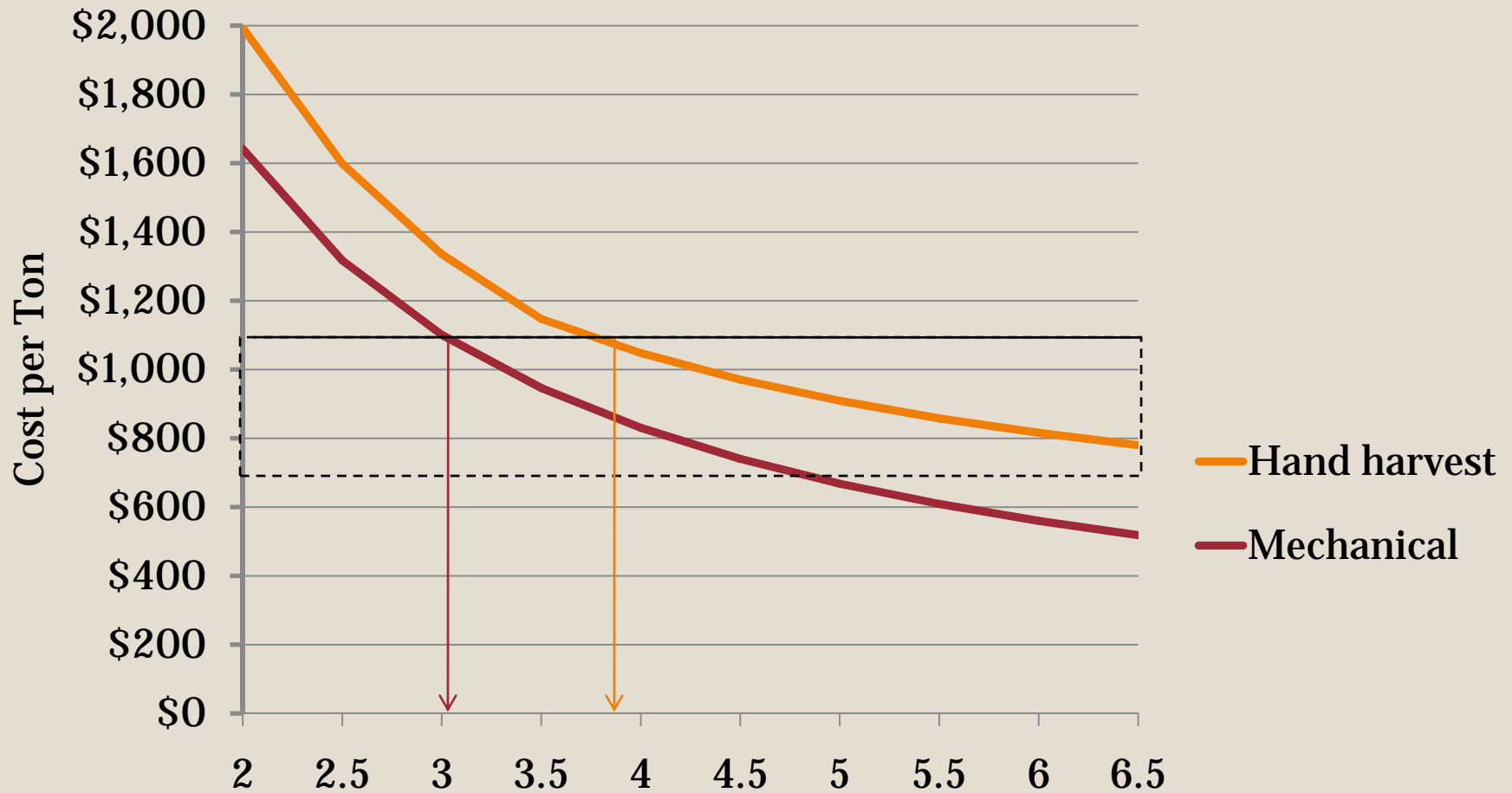


Table Olives – Hand and Mechanical Harvest

Breakeven yield at \$675 per ton

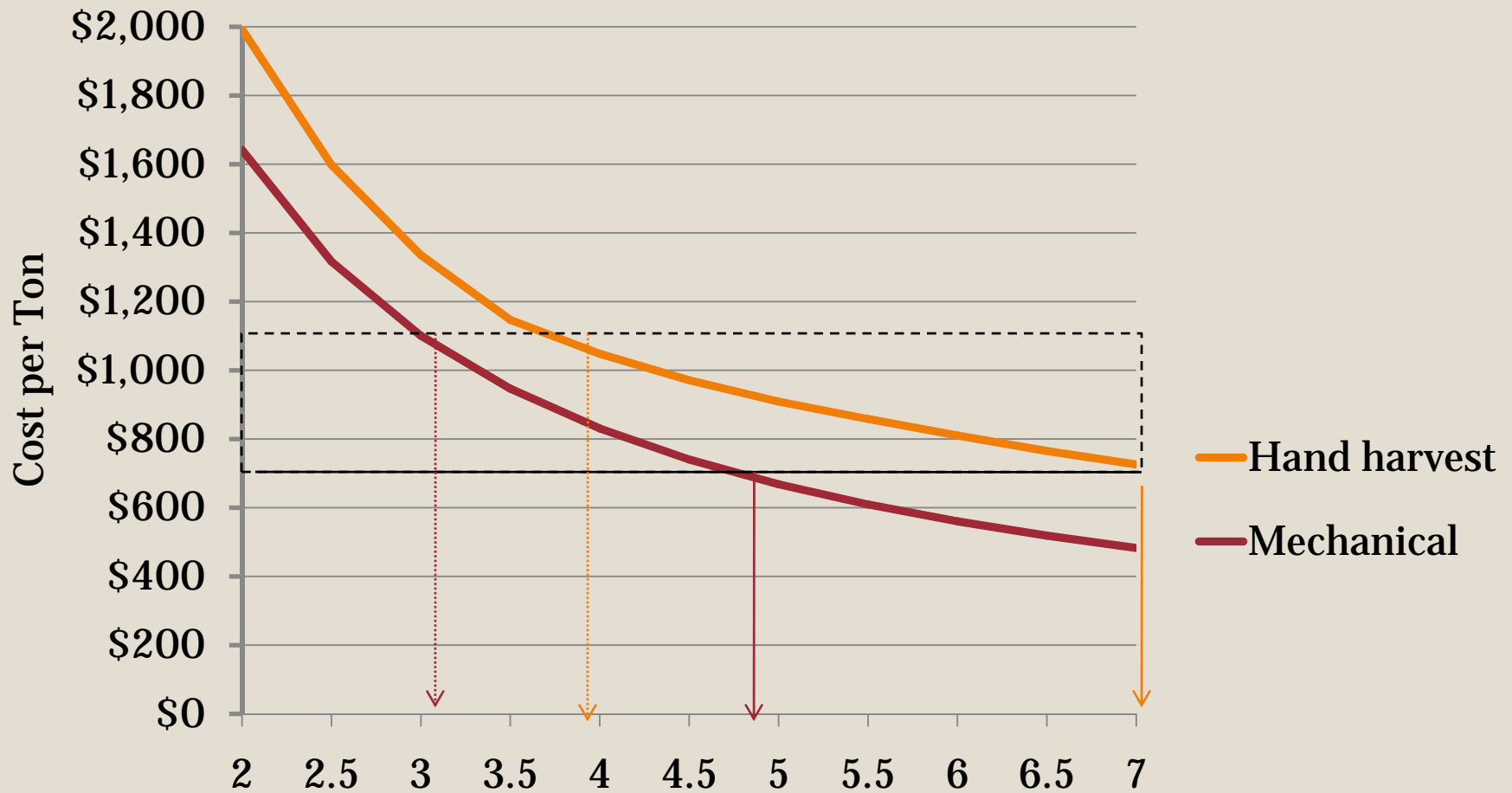


Table Olives – Hand and Mechanical Harvest Breakeven Yields at \$800/ton

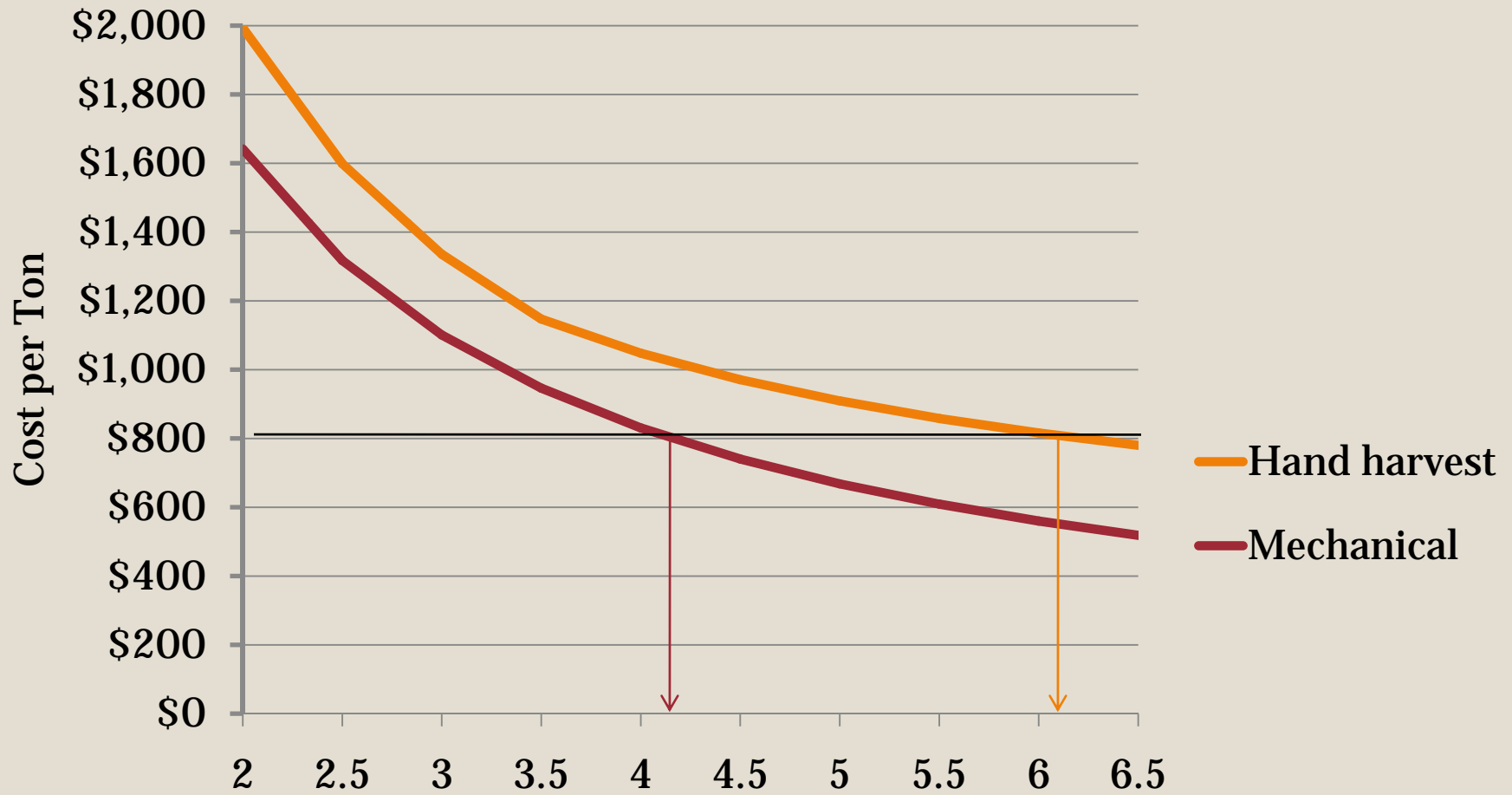


Table Olives – Hand and Mechanical Harvest

Tons per Acre at 60% and 80% Removal

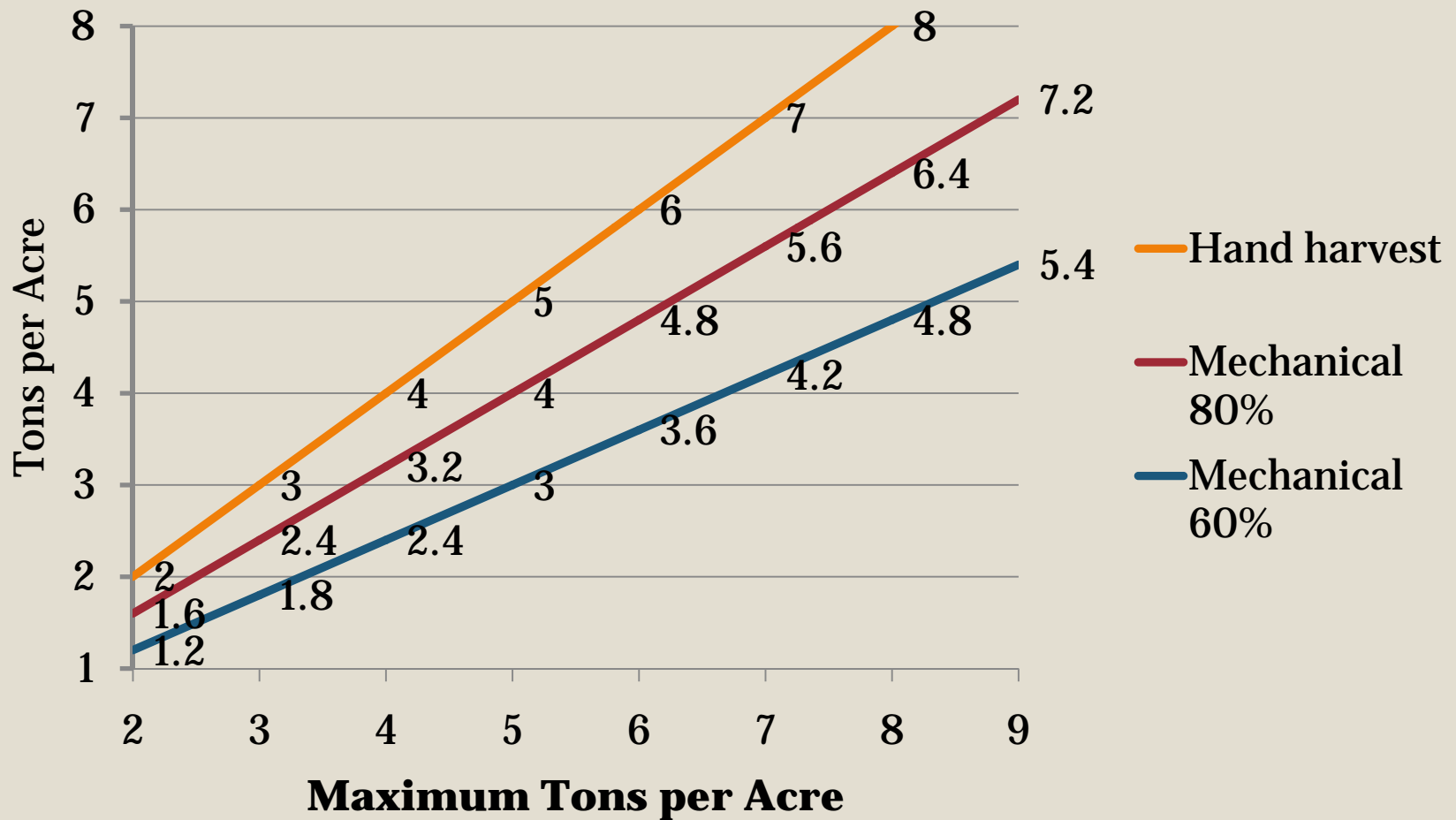


Table Olives – Hand and Mechanical Harvest Breakeven Yields at \$1,075/ton

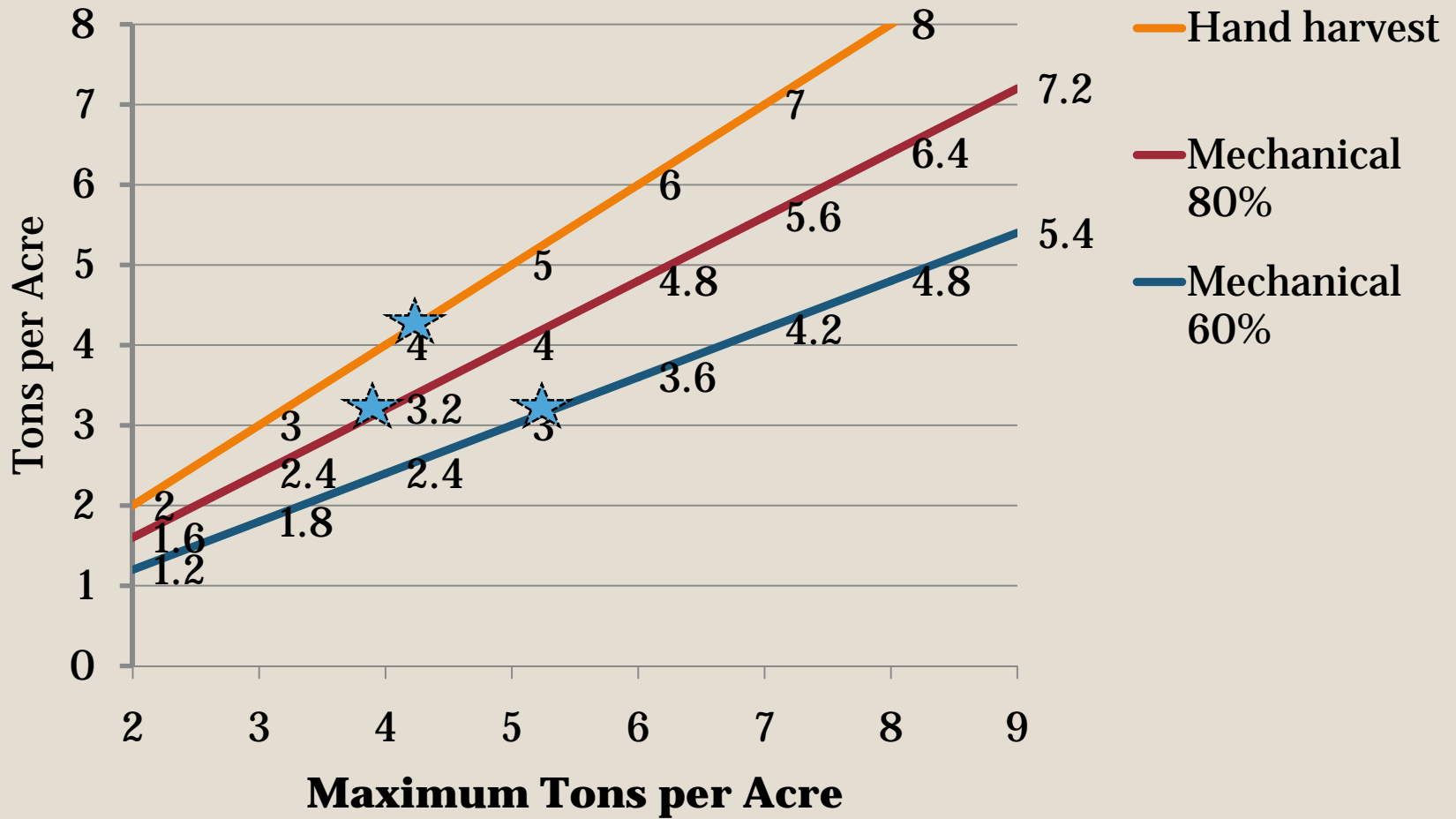


Table Olives – Hand and Mechanical Harvest Breakeven Yields at \$800/ton

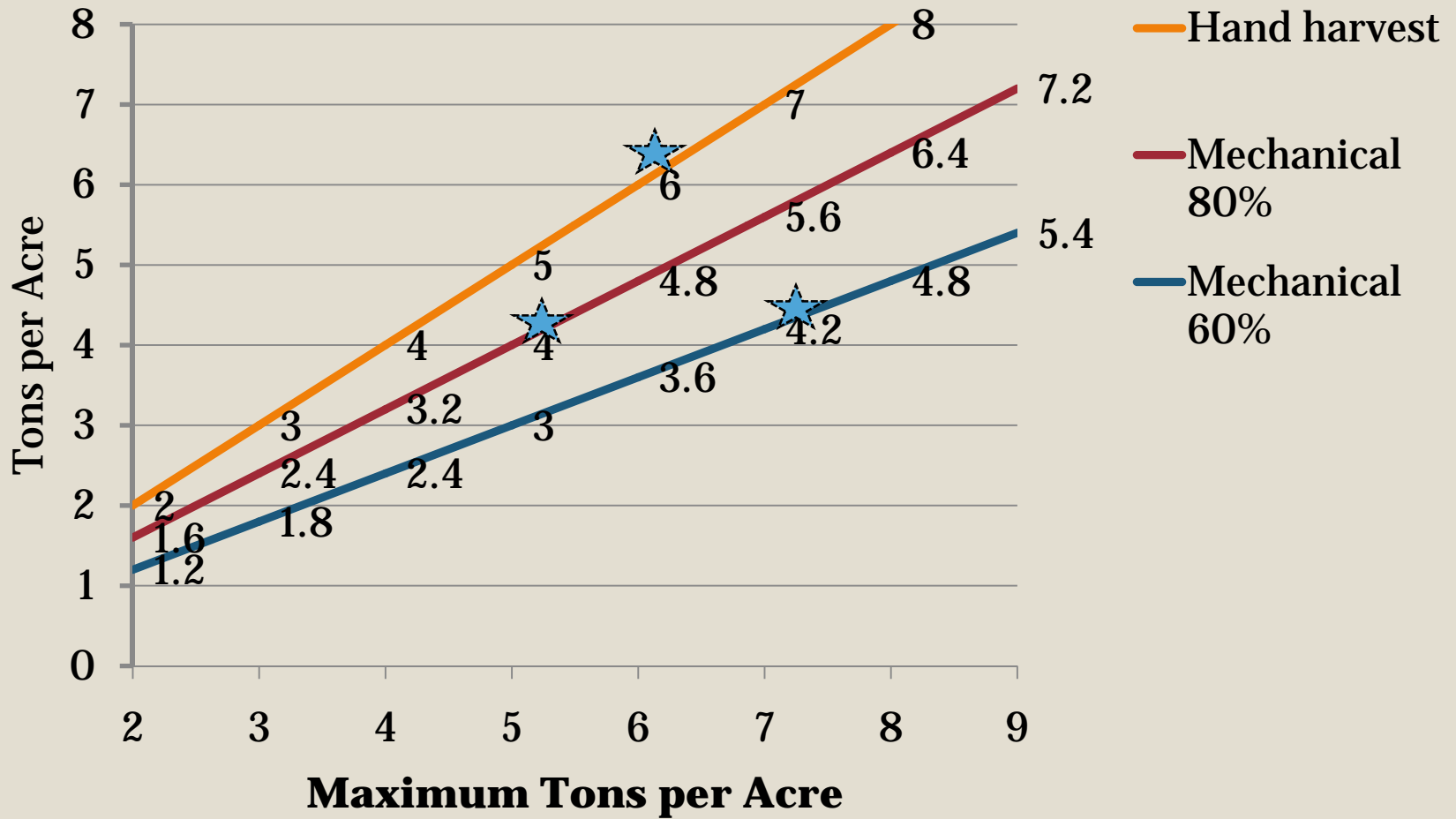
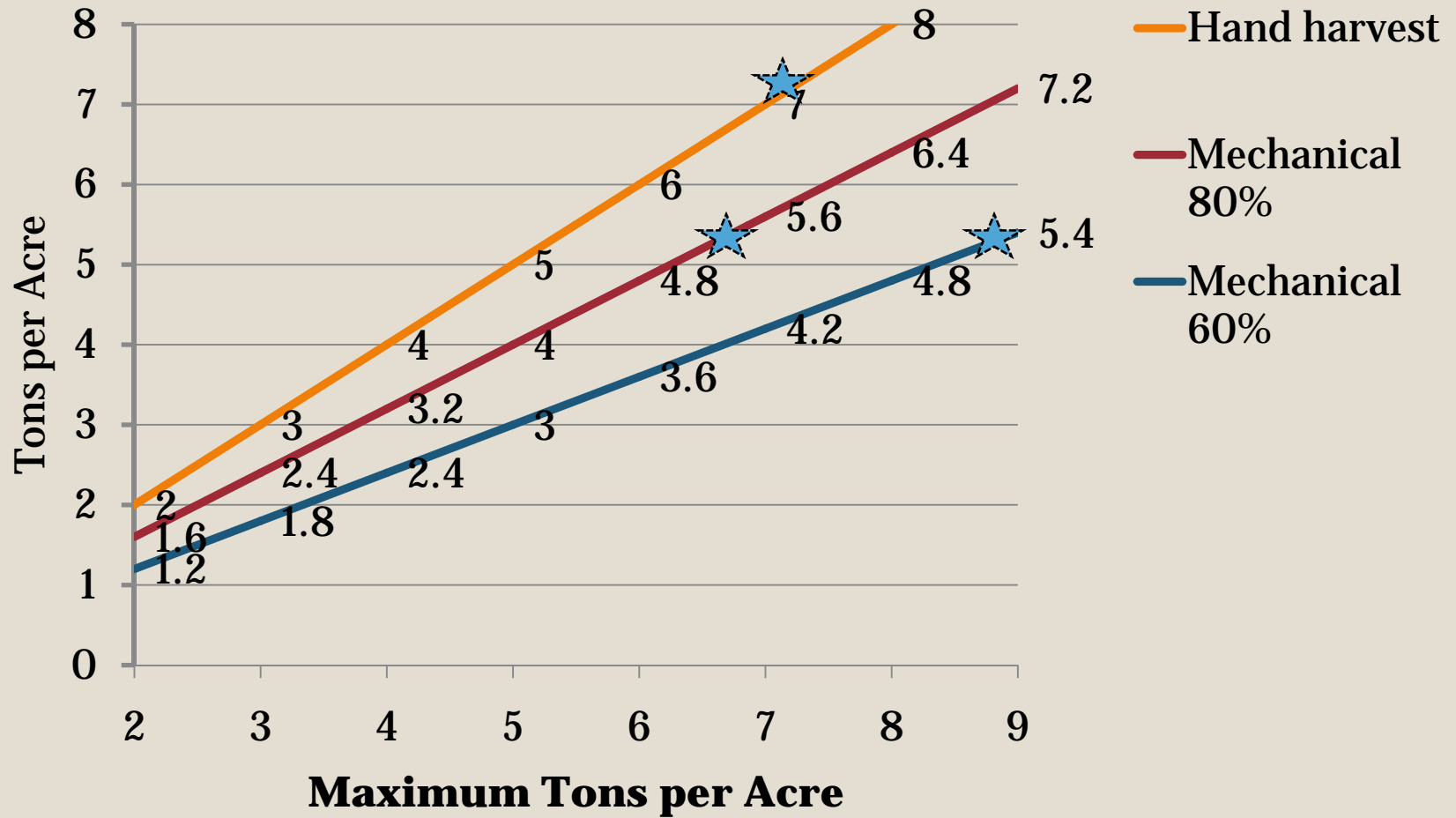


Table Olives – Hand and Mechanical Harvest Breakeven Yields at \$675/ton



Summary of Results



	Hand harvest	Mechanical 60%	Mechanical 80%
Cost/Acre @ 5 tons	\$4,544	\$3,341	\$3,341
Cost /Ton @ 5 tons	\$909	\$668	\$668
Breakeven yield @\$675/ton	7	5	5
Breakeven yield at \$800/ton	6	4	4
Breakeven yield at \$1,075	4	3	3
Equivalent hand yield @\$675	7	6.3	8.3
Equivalent hand yield @ \$800	6	5.0	6.7
Equivalent hand yield @1,075	4	3.8	5.0

Take home guesses



- Establishing an olive orchard for mechanical harvest adds about \$1,400 in cost or \$110 per year amortized over 40 years
- Mechanical harvest saves \$650 per acre at 3 tons per acre and \$2,050 at 7 tons per acre
- You make more money with mechanical harvest if you have 80% removal
- But with 60% removal you make less money than with hand harvest

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