

Estimated Vineyard Establishment Cost per Acre

9 x 7 ft spacing (691 vines/A) w/ post spaced 28 ft apart

| Pre-Plant (Fall prior to planting): | Labor | | Machinery | | Materials | | Total Cost | Your Estimate |
|---|--------------|-------------|------------------|-------------|------------------|-------------|-------------------|----------------------|
| | Hours | Cost | Hours | Cost | Units | Cost | | |
| Soil test (Sampling @ 0-6" & 6-12" depth over 2.5A; \$14 / sample) | .4 | 3.20 | | | 2 | 11.20 | 14.40 | |
| Plow (50 hp tractor w/ 3-bottom 16" mowboard plow) | .5 | 4.00 | .5 | 6.15 | | | 10.15 | |
| Subsoil (2 ways, 50 hp tractor w/ 2 shanks) | 1.8 | 14.40 | 1.8 | 22.14 | | | 36.54 | |
| Disk (2x)and drag (50 hp tractor w/ 10' disk) | .5 | 4.00 | .5 | 6.15 | | | 10.15 | |
| Sow cover crop (common Kentucky bluegrass @ \$2.00 / lb) | .3 | 2.40 | .3 | 2.16 | 44 lb | 88.00 | 92.56 | |
| Amend soil (Materials will be based on soil analysis for pH, P & K) | .2 | 1.60 | .2 | 3.95 | | | 5.55 | |
| Total pre-plant cost: | | | | | | | 169.35 | |
| Planting Year (Year 1): | | | | | | | | |
| Layout & mark rows | 2.0 | 16.00 | | | 55 | 2.57 | 18.57 | |
| Kill sod in vine rows w/ glyphosate (3ft strip) | .5 | 4.00 | .5 | 4.86 | .2 gal | 9.00 | 17.86 | |
| Score vine rows w/ a sub soil shank | .5 | 4.00 | .5 | 4.02 | | | 8.02 | |
| Plant vines w/ a tree planter (4 workers; vines @ \$1.75) | 8.0 | 64.00 | 2.0 | 29.60 | 691 | 1209.25 | 1302.85 | |
| Total planting cost | | | | | | | 1,347.30 | |
| Trellis materials: | | | | | | | | |
| 3" x 8' CCA-treated line post @ \$4.25 | | | | | 165 | 701.25 | | |
| 5" x 10' CCA-treated end post @ \$13.25 | | | | | 22 | 291.50 | | |
| Earth anchors w/ 4" helix & 40" shank @ \$8.87 | | | | | 22 | 195.14 | | |
| 12.5 ga HT wire, 2 strands, (4,000 ft roll @ \$60.00/roll) | | | | | 2.53 rolls | 151.80 | | |
| Wire strainer @ \$2.25 | | | | | 22 | 49.50 | | |
| Wire strainer handle | | | | | 1 | 1.95 | | |
| Crimping sleeves @ \$.12 | | | | | 88 | 10.56 | | |
| Crimping tool | | | | | 1 | 45.50 | | |
| 2" Staples (53/lb @ \$1.25/lb) | | | | | 14.5 lb | 18.13 | | |
| # 9 Wire (to attach end post to anchor, @ \$.053/ft) | | | | | 308 ft | 16.32 | | |
| Total materials cost | | | | | | | 1481.65 | |

| Year 1 (continued): | Labor | | Machinery | | Materials | | Total Cost | Your Estimate |
|---|-------|--------|-----------|--------|-----------|--------|-----------------|---------------|
| | Hours | Cost | Hours | Cost | Units | Cost | | |
| Trellis installation: | | | | | | | | |
| Mark post locations w/ 10" pot stakes | 1.0 | 8.00 | | | 187 | 8.75 | 16.75 | |
| Distribute post (2 workers) | 4.0 | 32.00 | 2.0 | 14.36 | | | 46.36 | |
| Drive line post (2 workers @ 3 min./post) | 16.5 | 132.00 | 8.25 | 125.24 | | | 257.24 | |
| Auger 12" x 4' holes for end post (2 workers @ 2 min./hole) | 1.5 | 12.00 | .75 | 11.39 | | | 23.39 | |
| Set end post (2 workers @ 6 min./post) | 4.4 | 35.20 | | | | | 35.20 | |
| Install end post anchors w/ PTO attachment (2 workers @ 5 min) | 3.6 | 28.80 | 1.8 | 27.32 | | | 56.12 | |
| String, attach, & tighten wires @ 42"(training) & 6' (cordon) | 15.0 | 120.00 | | | | | 120.00 | |
| Total installation cost | | | | | | | 519.86 | |
| First Year Cultural: | | | | | | | | |
| Install grow tube (@ .36) w/ 4 ft bamboo stakes (@ .095) & tie to training wire | 10.0 | 80.00 | | | 691 | 316.56 | 396.56 | |
| Flower cluster removal | 3.8 | 30.40 | | | | | 30.40 | |
| Fertilize by hand (0.08 lb N per vine as urea) | 3.8 | 30.40 | | | 120 lb | 14.40 | 44.80 | |
| Water by hand (2 x) | 16.0 | 128.00 | 16.0 | 114.88 | | | 242.88 | |
| Weed control, oryzalin after planting (3 ft strip) | 1.0 | 8.00 | 1.0 | 8.45 | .33 gal | 27.72 | 44.17 | |
| Mow row middles (5 x) | 1.7 | 13.60 | 1.7 | 14.72 | | | 28.32 | |
| Insect & disease control (6 sprays; 25% canopy) | 2.5 | 20.00 | 2.50 | 27.13 | | 30.21 | 77.34 | |
| Remove grow tube & tie canes to stake w/ .5" plant tie tape (150 ft rolls plus staples) | 11.5 | 92.00 | | | 9.2 rolls | 16.30 | 108.30 | |
| Plant tying machine (Max Tapener) | | | | | 1 | 49.07 | 49.07 | |
| Total cultural cost: | | | | | | | 1021.84 | |
| Land charge | | | | | | | 120.00 | |
| Annual operating cash expense | | | | | | | 4,660.00 | |
| Operating interest @ 8% for .5 year | | | | | | | 186.40 | |
| Total Annual Cash Expense Year 1: | | | | | | | 4,846.40 | |

| Year 2: | Labor | | Machinery | | Materials | | Total Cost | Your Estimate |
|---|-------|--------|-----------|-------|--------------|--------|-----------------|---------------|
| | Hours | Cost | Hours | Cost | Units | Cost | | |
| Dormant prune & tie canes | 8.6 | 68.80 | | | | 2.23 | 71.03 | |
| Weed control: Pre-emergence w/ oryzalin (3 ft strip) | 1.0 | 8.00 | 1.0 | 8.45 | .33 gal | 27.72 | 44.17 | |
| Spot treat w/ glyphosate | 1.0 | 8.00 | 1.0 | 8.45 | .08 gal | 3.60 | 20.05 | |
| Mow row middles (5 x) | 1.7 | 13.60 | 1.7 | 14.72 | | | 28.32 | |
| Replanting (2% of initial planting @ 5 min/vine) | 1.2 | 9.60 | | | 14 | 24.50 | 34.10 | |
| Fertilize (.08 lb N/vine as urea broadcasted) | .3 | 2.40 | .3 | 2.84 | 120 lb | 14.40 | 19.64 | |
| Canopy Management: Shoot thinning and shoot tying to stake (2 x) w/ plant tie tape (150 ft rolls) | 23.0 | 184.00 | | | 9.2 rolls | 16.30 | 200.30 | |
| Flower cluster removal | 9.0 | 72.00 | | | | | 72.00 | |
| Insect & disease control (10 sprays; 50% canopy) | 4.2 | 33.60 | 4.2 | 54.26 | | 158.14 | 246.00 | |
| Land charge | | | | | | | 120.00 | |
| Annual operating cash expense | | | | | | | 855.61 | |
| Operating interest: Current year @ 8% for .5 year | | | | | | | 34.22 | |
| Year 1 accrued expense (\$4846.40 @ 8%) | | | | | | | 387.71 | |
| Total Expense Year 2 | | | | | | | 1,277.54 | |
| Total Accumulated Expense through Year 2 | | | | | | | 6,123.94 | |
| Year 3: | | | | | | | | |
| Pruning | 15.0 | 120.00 | | | | | 120.00 | |
| Cordon training & tying w/ 5 mm binding tube (1968 ft/ball) | 17.0 | 136.00 | | | 1.4 balls | 73.20 | 209.20 | |
| Shred or remove brush | .5 | 4.00 | .5 | 4.33 | | | 8.33 | |
| Weed control: Pre-emergence w/ oryzalin (3 ft strip) | 1.0 | 8.00 | 1.0 | 8.45 | .33 gal | 27.72 | 44.17 | |
| Spot treat w/ glyphosate | 1.0 | 8.00 | 1.0 | 8.45 | .08 gal | 3.60 | 20.05 | |
| Mow row middles (5 x) | 1.7 | 13.60 | 1.7 | 14.72 | | | 28.32 | |
| Canopy Management: Shoot thinning | 11.5 | 92.00 | | | | | 92.00 | |
| Shoot positioning (2 x) | 23.0 | 184.00 | | | | | 184.00 | |
| Cluster thinning (French hybrids only) | 11.5 | 92.00 | | | | | 92.00 | |
| Insect & disease control (12 sprays; 87% canopy) | 5.0 | 40.00 | 5.0 | 64.60 | | 269.06 | 373.66 | |
| Fertilization: Petiole analysis (for 2.5 A @ \$25.00/sample) | .3 | 2.40 | | | | 10.00 | 12.40 | |
| N fertilizer @ .08 lb N/vine as urea broadcasted | .3 | 2.40 | .3 | 2.84 | 120 lb | 14.40 | 19.64 | |

| Year 3 continued: | Labor | | Machinery | | Materials | | Total Cost | Your Estimate |
|--|-------|--------|-----------|-------|------------------|---------------|-----------------|---------------|
| | Hours | Cost | Hours | Cost | Units | Cost | | |
| Harvest cost on 1.5 tons@ \$1.25 per 30 lb lug | 3.4 | 27.20 | 1.7 | 12.21 | 100 | 125.00 | 164.41 | |
| Harvest lugs @ \$8.50 ea | | | | | 70 | 595.00 | 595.00 | |
| Land charge | | | | | | | 120.00 | |
| Annual operating cash expense | | | | | | | 2,083.18 | |
| Operating interest: Current year @ 8% for .5 year | | | | | | | 83.33 | |
| Years 1 & 2 accrued expenses (\$6123.94 @ 8%) | | | | | | | 489.92 | |
| Total Expense for Year 3 | | | | | | | 2,656.43 | |
| Total Accumulated Expenses through Year 3 | | | | | | | 8,780.37 | |
| Harvest Income on 1.5 tons @ \$1,000 / ton | | | | | | | 1,500.00 | |
| Net Investment at end of Year 3 | | | | | | | 7,280.37 | |
| Year 4: | | | | | | | | |
| Pruning | 23.0 | 184.00 | | | | | 184.00 | |
| Cordon training & tying w/ 5 mm binding tube | 5.0 | 40.00 | | | .5 ball | 26.06 | 66.06 | |
| Shred or remove brush | .5 | 4.00 | .5 | 4.33 | | | 8.33 | |
| Weed Control: Pre-emergence w/ simazine + oryzalin (3 ft strip) | 1.0 | 8.00 | 1.0 | 8.45 | .9 lb .33 gal | 4.05 27.72 | 48.22 | |
| Spot treat w/ glyphosate | 1.0 | 8.00 | 1.0 | 8.45 | .08 gal | 3.60 | 20.05 | |
| Mow row middles (5 x) | 1.7 | 13.60 | 1.7 | 14.72 | | | 28.32 | |
| Canopy Management: Shoot thinning | 11.5 | 92.00 | | | | | 92.00 | |
| Shoot positioning (2 x) | 23.0 | 184.00 | | | | | 184.00 | |
| Cluster thinning (French hybrids only) | 11.5 | 92.00 | | | | | 92.00 | |
| Insect & disease control (12 sprays; full canopy) | 5.0 | 40.00 | 5.0 | 64.60 | | 309.27 | 413.87 | |
| Fertilization: Petiole analysis (for 2.5 A @ \$25.00/sample) | .3 | 2.40 | | | | 10.00 | 12.40 | |
| N fertilizer @ .1 lb N/vine as urea broadcasted | .3 | 2.40 | .3 | 2.84 | 150 lb | 18.03 | 23.27 | |
| Harvest Cost on 3.0 tons @ \$1.25 / 30 lb lug | 5.4 | 43.20 | 2.7 | 19.39 | 200 | 250.00 | 312.59 | |
| Harvest lugs @ 8.50 ea. | | | | | 50 | 425.00 | 425.00 | |
| Land charge | | | | | | 120.00 | 120.00 | |
| Annual operating cash expense | | | | | | | 2,030.11 | |
| Operating interest: Current year @ 8% for .5 year | | | | | | | 81.20 | |
| Net investment through Year 3 (\$7280.37 @ 8%) | | | | | | | 582.43 | |
| Total Expenses Year 4 | | | | | | | 2,693.74 | |
| Total Accumulated Expense through Year 4 | | | | | | | 9,974.11 | |
| Harvest income on 3.0 tons @ \$1,000/ton | | | | | | | 3,000.00 | |
| Net Investment through Year 4 | | | | | | | 6,974.11 | |

| Year 5: | Labor | | Machinery | | Materials | | Total Cost | Your Estimate |
|--|-------|--------|-----------|-------|------------------|---------------|-----------------|---------------|
| | Hours | Cost | Hours | Cost | Units | Cost | | |
| Pruning | 23.0 | 184.00 | | | | | 184.00 | |
| Cordon training & tying w/ 5 mm binding tube | 2.5 | 20.00 | | | .2 ball | 10.42 | 30.42 | |
| Shred or remove brush | .5 | 4.00 | .5 | 4.33 | | | 8.33 | |
| Weed Control: Pre-emergence w/ simazine + oryzalin (3 ft strip) | 1.0 | 8.00 | 1.0 | 8.45 | .9 lb .33 gal | 4.05 27.72 | 48.22 | |
| Spot treat w/ glyphosate | 1.0 | 8.00 | 1.0 | 8.45 | .08 gal | 3.60 | 20.05 | |
| Mow row middles (5 x) | 1.7 | 13.60 | 1.7 | 14.72 | | | 28.32 | |
| Canopy management: Shoot thinning | 11.5 | 92.00 | | | | | 92.00 | |
| Shoot positioning (2 x) | 23.0 | 184.00 | | | | | 184.00 | |
| Cluster thinning (French hybrids only) | 11.5 | 92.00 | | | | | 92.00 | |
| Insect & disease control (12 sprays) | 5.0 | 40.00 | 5.0 | 64.60 | | 309.27 | 413.87 | |
| Fertilization: Petiole analysis (for 2.5 A @ \$25 / sample) | .3 | 2.40 | | | | 10.00 | 12.40 | |
| N fertilizer @ .1 lb N/vine as urea broadcasted | .3 | 2.40 | .3 | 2.84 | 150 lb | 18.03 | 23.27 | |
| Land charge | | | | | | | 120.00 | |
| Harvest cost on 3.5 tons @ \$1.25 / 30 lb lug | 6.0 | 48.00 | 3.0 | 21.54 | 234 | 292.50 | 362.04 | |
| Annual operating cash expense | | | | | | | 1,618.92 | |
| Operating interest: Current year @ 8% for .5 year | | | | | | | 64.76 | |
| Net investment through Year 4 (\$6974.11 @ 8%) | | | | | | | 557.93 | |
| Total Expense Year 5 | | | | | | | 2,241.61 | |
| Total Accumulated Expense through Year 5 | | | | | | | 9,215.72 | |
| Harvest income on 3.5 tons @ \$1,000/ton | | | | | | | 3,500.00 | |
| Net investment after 5 years | | | | | | | 5,715.72 | |
| Year 6: | | | | | | | | |
| Annual operating cash expense (same as Year 5) | | | | | | | 1,618.92 | |
| Operating interest: Current year @ 8% for .5 year | | | | | | | 64.76 | |
| Net investment through Year 5 (\$5,715.72 @ 8%) | | | | | | | 457.26 | |
| Total Expense Year 6 | | | | | | | 2,140.94 | |
| Total Accumulated Expense through Year 6 | | | | | | | 7,856.66 | |
| Harvest income on 3.5 tons @ \$1,000 / ton | | | | | | | 3,500.00 | |
| Net investment through 6 years | | | | | | | 4,356.66 | |

| | Labor | | Machinery | | Materials | | Total Cost | Your Estimate |
|--|-------|------|-----------|------|-----------|------|-----------------|---------------|
| | Hours | Cost | Hours | Cost | Units | Cost | | |
| Year 7: | | | | | | | | |
| Annual operating cash expense (same as Year 5) | | | | | | | 1,618.92 | |
| Operating interest: Current year @ 8% for .5 year | | | | | | | 64.76 | |
| Net investment through Year 6 (\$4356.66 @ 8%) | | | | | | | 348.53 | |
| Total Expense Year 7 | | | | | | | 2,032.21 | |
| Total accumulated expense through Year 7 | | | | | | | 6,388.87 | |
| Harvest income on 3.5 tons @ \$1,000 / ton | | | | | | | 3500.00 | |
| Net investment after 7 years | | | | | | | 2,888.87 | |
| Year 8: | | | | | | | | |
| Annual operating cash expense (same as Year 5) | | | | | | | 1,618.92 | |
| Operating interest: Current year @ 8% for .5 year | | | | | | | 64.76 | |
| Net investment through Year 7 (\$2888.87 @ 8%) | | | | | | | 231.11 | |
| Total Expense Year 8 | | | | | | | 1,914.79 | |
| Total accumulated expense through Year 8 | | | | | | | 4,803.66 | |
| Harvest income on 3.5 tons @ \$1,000 / ton | | | | | | | 3,500.00 | |
| Net investment after 8 years | | | | | | | 1303.66 | |
| Year 9: | | | | | | | | |
| Annual operating cash expense (same as Year 5) | | | | | | | 1,618.92 | |
| Operating interest: Current year @ 8% for .5 year | | | | | | | 64.76 | |
| Net investment through Year 8 (\$1303.66 @ 8%) | | | | | | | 104.29 | |
| Total Expense Year 9 | | | | | | | 1,787.97 | |
| Total accumulated expense through Year 9 | | | | | | | 3,091.63 | |
| Harvest income on 3.5 tons @ \$1,000 / ton | | | | | | | 3,500.00 | |
| Net Return after 9 years | | | | | | | 408.37 | |