Vineyard Cost of Establishment

9:30 – 10 a.m.
Friday March 8th, 2019
Show Me Grape & Wine Conference

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ISU Extension
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Vineyard Math

1 acre = 43,560 sq ft ~ 209’ square ~ football field
10’ rows x 8’ vines = 545 vines/acre = 4,356 linear ft/ac
3.5 ton/ac ÷ 545 vines = 12.8 lbs/vine
12.8 lbs/vine ÷ 0.25 lbs/cluster = 51 clusters per vine
3.5 ton/ac ÷ 19 lbs/5 gal bucket = 368 buckets/ac
40 lbs/lug = 175 lugs/ac
3.5 ton/ac x $1,200/ton = $4,200 gross per acre
$4,200 ÷ 545 vines = $7.70/gross per vine
175 hrs of labor/ac/yr ÷ 545 vines/ac = 20 min/vine/yr
Basic Vine/Wine Math

Standard bottle of Wine = 750 ml = 25.6 oz
1 gallon = 3.78 Liters = 5 - 750 ml bottles
12 bottles/case = 2.4 gallons/case
Wooden barrel = (53 to 65 gallons)
Approx. 150 gallons/ton of grapes
3.5 tons/acre ave. yield = 525 gallons/acre
Approx. 545 vines/acre = 1 gal./vine = 13 lbs of grapes
Year 1 Out of Pocket Costs/Acre

10 – 435’ rows 10’ x 8’ between plants – Single High Wire
August/September

2 soil samples @ $20 $ 40.00
2 qts of Glyphosate@$14/gal $ 7.00
200 lbs of Phosphorous (P205) @ 42¢/lb $ 84.00
200 lbs of Potassium (K20) @ 31¢/lb $ 62.00
2 tons of Quarry Lime @ $17/ton spread $ 34.00
Disk 2X @ $18/trip $ 36.00
Broadcast 50 lbs of Bluegrass Seed @ $3.00 lb$ $ 150.00
Harrow & level area @ $10 $ 10.00

3-8-19 Approximate

Total $423
Year 2 Out of Pocket Costs/Acre

10 – 435’ rows 10’ x 8’ between plants – Single High Wire

545 plants @ $3.50 $1,907
545 - 5/8” x 6’ bamboo poles @ 45¢ $245
545 - 36” clipper grow tubes @ $2.00 $1,090
162 - 3-4”x 8’ CCA Blunt line posts @ $7.00 $1,134
20 - 5-6”x 10’ CCA Blunt end posts @ $15 $300
Approx. 4750’12.5 ga Hi-Tensile Wire @ 5¢/ft $238
Fencing tool @ $130 & Wire puller @ $80 $210
Spinning Jenny wire holder $175
20 Rachet Wire Strainers @ $3.20 & Rachet @ $20 $84
10# of 2” staples (approx. 51/lb) @ $2.5/lb $25

3-8-19 Approximate

1st yr $423 + 2nd yr $5,408
Total of $5,831
Year 2 Out of Pocket Costs/Acre Cont.

10 – 435’ rows 10’ x 8’ between plants – Single High Wire

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 - 12.5 ga. Wire Gripples @ $1.30</td>
<td>$ 52</td>
</tr>
<tr>
<td>20 – ¾” x 48” long x 6” helix earth anchors @ $14</td>
<td>$ 280</td>
</tr>
<tr>
<td>20 lbs of 17’/lb. #9 wire @ $3.50/lb</td>
<td>$ 70</td>
</tr>
<tr>
<td>6,000 #8 - 2½” T Bands 6 cents ea.</td>
<td>$ 360</td>
</tr>
<tr>
<td>Max Tapener ($75) &amp; extra tape &amp; staples ($20)</td>
<td>$ 95</td>
</tr>
<tr>
<td>Glyphosate /Chateau/Prowl H20 Herbicide</td>
<td>$ 40</td>
</tr>
</tbody>
</table>

1st yr $423 + 2nd yr $5,408 + 2nd yr $897

3-8-19 Approximate

Total $6,728
Year 3 Out of Pocket Costs/Acre

10 – 435’ rows 10’ x 8’ between plants – Single High Wire

Air Blast Sprayer $6,000
Portable mounted tank & hand sprayer $300
Backpack sprayer $100
Herbicides $40
Fungicides & Insecticides $250
Refractometer (Brix Measurement) $100
pH tester accurate to 0.01 $175 + Buffers $30 $205
5,000’ -17’ med. grade woven bird net @ 25¢/ft $1,250
15 grape forks for picking @ $8 $120
100 40lb harvest lugs @ $12 $1,200

1st yr $423 + 2nd yr $5,408 + 2nd yr $897 + 3rd yr. $9,560

3 Year Total of $16,288
Cost of Establishment
Interactive Excel worksheets

Single High Wire Trellis
VSP Trellis
GDC Trellis
Winery

https://www.agmrc.org/

Search vineyard or winery worksheet
Cost of Establishing a Vineyard

Funding for this Project was provided by the following:

<table>
<thead>
<tr>
<th>Organization</th>
<th>Website</th>
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<tbody>
<tr>
<td>Leopold Center for Sustainable Agriculture</td>
<td><a href="http://www.leopold.iastate.edu">www.leopold.iastate.edu</a></td>
</tr>
<tr>
<td>Agricultural Marketing Resource Center</td>
<td><a href="http://www.agmrc.org">www.agmrc.org</a></td>
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<tr>
<td>Iowa State University Extension</td>
<td><a href="http://www.extension.iastate.edu">www.extension.iastate.edu</a></td>
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The Cost of Establishing a Vineyard Workbook has been created to aid in the development of a business plan. The worksheet assumes the user has a good understanding of grape production, marketing, management and cash flow accounting principals. Any results developed by the worksheet should be reviewed by a Certified Public Account for any errors in calculation or assumptions of the user.

Iowa State University assumes no liabilities or guarantees of the success or failure of any business that uses the Cost of Establishing a Vineyard Worksheet as a decision tool in the start of the business.

The workbook is built using Microsoft Office Excel 2003. The workbook is made up of 23 worksheets. Data entered in one worksheet may be linked to other worksheets. Calculations flow through the worksheets automatically. Save often to protect the information entered.

Created by: Dr. Paul Domoto, Professor of Fruits, Nuts, & Fruit Trees, Iowa State University

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Phone: (515) 294-0035
Data from 83 to 113 vineyards in the last five years provided by the Risk Management Association

Ag Marketing Resource Center
https://www.agmrc.org/

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<tbody>
<tr>
<td>Number of Statements</td>
<td>113</td>
<td>101</td>
<td>115</td>
<td>87</td>
<td>83</td>
</tr>
<tr>
<td>Net Sales</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
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<tr>
<td>Operating Expenses</td>
<td>83.5%</td>
<td>82.4%</td>
<td>83.7%</td>
<td>77.5%</td>
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<tr>
<td>Operating Profit</td>
<td>16.5%</td>
<td>17.6%</td>
<td>16.3%</td>
<td>22.5%</td>
<td>24.3%</td>
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<tr>
<td>All Other Expenses (net)</td>
<td>8.0%</td>
<td>8.1%</td>
<td>8.5%</td>
<td>4.65%</td>
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<tr>
<td>Profit Before Taxes</td>
<td>8.6%</td>
<td>9.5%</td>
<td>7.8%</td>
<td>18.0%</td>
<td>17.5%</td>
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Source: Risk Management Association eStatement Studies of Vineyards
$ Value of Grapes in a 750 ml Bottle of Wine

<table>
<thead>
<tr>
<th>$Ton</th>
<th>130 gal./ton</th>
<th>140 gal./ton</th>
<th>150 gal./ton</th>
<th>160 gal./ton</th>
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<tbody>
<tr>
<td>$800</td>
<td>$1.23</td>
<td>$1.14</td>
<td>$1.07</td>
<td>$1.00</td>
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<tr>
<td>$900</td>
<td>$1.38</td>
<td>$1.29</td>
<td>$1.23</td>
<td>$1.13</td>
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<tr>
<td>$1,000</td>
<td>$1.54</td>
<td>$1.42</td>
<td>$1.33</td>
<td>$1.25</td>
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<tr>
<td>$1,100</td>
<td>$1.69</td>
<td>$1.57</td>
<td>$1.47</td>
<td>$1.38</td>
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<tr>
<td>$1,200</td>
<td>$1.85</td>
<td>$1.71</td>
<td>$1.60</td>
<td>$1.50</td>
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<tr>
<td>$1,300</td>
<td>$2.00</td>
<td>$1.86</td>
<td>$1.73</td>
<td>$1.63</td>
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<tr>
<td>$1,400</td>
<td>$2.15</td>
<td>$2.00</td>
<td>$1.87</td>
<td>$1.75</td>
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<tr>
<td>$1,500</td>
<td>$2.31</td>
<td>$2.14</td>
<td>$2.00</td>
<td>$1.88</td>
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<tr>
<td>$1,600</td>
<td>$2.46</td>
<td>$2.29</td>
<td>$2.13</td>
<td>$2.00</td>
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</table>

* $1,200 to $1,400 predominant price range delivered to a winery in Iowa.
I wish I would have made my mistakes on a much smaller scale

Dave Cushman, Park Farm Winery – Bankston, IA (2008)