The Grape, Wine, & Ornamental Situation and Outlook 2018

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Situation & Outlook for Grapes and Wine
Value of Utilized Production of Grapes, New York, 1997-2016

Source: New York Agricultural Statistics, 2017

<table>
<thead>
<tr>
<th>Use</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh</td>
<td>3,000</td>
<td>3,000</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Juice(^a)</td>
<td>149,000</td>
<td>133,000</td>
<td>108,000</td>
<td>115,000</td>
</tr>
<tr>
<td>Wine</td>
<td>50,000</td>
<td>44,000</td>
<td>35,000</td>
<td>54,000</td>
</tr>
<tr>
<td>Total</td>
<td>202,000</td>
<td>180,000</td>
<td>145,000</td>
<td>171,000</td>
</tr>
</tbody>
</table>

\(^a\) Includes other processing for jam, jelly, etc.

Estimated 2017 grape production: 175,000 tons, 2% up from 2016
Grape Prices in New York, 2008-2016 ($/ton)

# Grapes Grown and Processed in NY

Received by Wineries and Processing Plants, 2012-2016\( ^{a} \)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Concord</td>
<td>64,600</td>
<td>148,000</td>
<td>128,800</td>
<td>111,000</td>
<td>121,000</td>
<td>10%</td>
<td>115,420</td>
</tr>
<tr>
<td>Niagara</td>
<td>11,400</td>
<td>20,000</td>
<td>17,500</td>
<td>9,550</td>
<td>16,000</td>
<td>68%</td>
<td>15,750</td>
</tr>
<tr>
<td>Other grape varieties(^{b})</td>
<td>33,000</td>
<td>34,000</td>
<td>30,700</td>
<td>22,450</td>
<td>32,000</td>
<td>-7%</td>
<td>31,630</td>
</tr>
<tr>
<td>Total, all varieties</td>
<td>109,000</td>
<td>202,000</td>
<td>177,000</td>
<td>143,000</td>
<td>169,000</td>
<td>10%</td>
<td>162,800</td>
</tr>
</tbody>
</table>

\(^{a}\) Includes New York grown grapes received at out-of-state plants.

\(^{b}\) Includes Vinifera varieties, American and French Hybrid varieties not shown.

\(^{c}\) Includes Concord grape processed for juice

## 2017 NY wine industry economic impact

**Economic Impact of the Wine Industry in New York**

<table>
<thead>
<tr>
<th></th>
<th>Direct</th>
<th>Supplier</th>
<th>Induced</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>$5,528,619,600</td>
<td>$3,449,561,200</td>
<td>$4,786,162,200</td>
<td>$13,764,343,000</td>
</tr>
<tr>
<td>Jobs</td>
<td>62,450</td>
<td>14,359</td>
<td>24,997</td>
<td>101,806</td>
</tr>
<tr>
<td>Wages</td>
<td>$2,379,712,400</td>
<td>$1,197,176,300</td>
<td>$1,620,584,500</td>
<td>$5,197,473,200</td>
</tr>
<tr>
<td>Business Taxes</td>
<td></td>
<td></td>
<td></td>
<td>$2,248,990,200</td>
</tr>
<tr>
<td>Consumption Taxes</td>
<td></td>
<td></td>
<td></td>
<td>$277,802,300</td>
</tr>
</tbody>
</table>

- 450 producers, 11,684 acres of vineyards
- 62,450 direct employees, 14,359 additional jobs created in suppliers and ancillary industries
- $5.2 billion total wages generated by direct, indirect, and induced economic activity
- 4.5 million tourist visits and $1.8 billion in tourism expenditures

Source: WineAmerica, 2017
Total Wine Consumption, U.S. 1999-2016

Source: Wine Institute; Department of Commerce; Gomberg, Fredrickson and Associates, 2017
Overview – Wine

- Shipments into US trade channels increased in 2016 - retail value of $59.5 billion
- Total wine sales in food stores and other off-premises outlets keep growing, accounts for 80%
- Direct to consumer shipping (E-commerce) grew 14.1% in 2016, a new record high in value
- Shipments of sparkling wine and champagne continue growing - up 14% over the previous year
- Desert wine experienced a growing trend in the past several years – up 3.7% over the previous year

Source: Wine Institute, 2017
## U.S. Wine Export Destinations, 2012-2016

Value (Million Dollars)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Export Total</strong></td>
<td>1432</td>
<td>1550</td>
<td>1500</td>
<td>1610</td>
<td>1620</td>
<td>17%</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>EU</strong></td>
<td>485</td>
<td>617</td>
<td>518</td>
<td>622</td>
<td>685</td>
<td>43%</td>
<td>10%</td>
<td>42%</td>
</tr>
<tr>
<td><strong>Canada</strong></td>
<td>434</td>
<td>454</td>
<td>487</td>
<td>461</td>
<td>431</td>
<td>14%</td>
<td>-7%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td>111</td>
<td>102</td>
<td>101</td>
<td>97</td>
<td>87</td>
<td>-17%</td>
<td>-10%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Hong Kong</strong></td>
<td>115</td>
<td>78</td>
<td>69</td>
<td>96</td>
<td>99</td>
<td>-39%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>China</strong></td>
<td>73.6</td>
<td>77</td>
<td>71</td>
<td>56</td>
<td>92</td>
<td>48%</td>
<td>64%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>213.5</td>
<td>222</td>
<td>254</td>
<td>278</td>
<td>236</td>
<td>16%</td>
<td>-15%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: Wine Institute; Department of Commerce; Gomberg, Fredrickson and Associates, 2017
Outlook – New York Grapes

Crop production expected to be up 2% in 2017

- Cool and wet spring and summer than average condition caused vigorous growth to disease
- Warm and dry fall increased vine health and berry quality, pushing the production higher than the 2016 level
- “Ideal” season for cool climate varieties, including gewurtztraminer, traminette, riesling
Outlook – U.S. Grapes

- U.S. grape production likely to down in 2017/2018
- Primarily due to lower production in California
  - Raisin grapes down 6 percent
  - Wine- and table- grapes fairly unchanged
- Expected lower grape production in Washington (down 6 percent) and Michigan (down 32 percent)
- Fresh-market production likely unchanged in 2017/2018
  - Per capital consumption will be slightly higher in 2018
Outlook – U.S. Wines

• Table wines are expected to continue growing in value and volume

• Sparkling wines—continue to grow, especially prosecco

• Wine sales continue to grow at 4 to 6 percent, driven by the growth of premiums wines

• Volume and sales are expected to drop below the $9 bottle price segment.
Opportunities and challenges

• Per capita consumption is likely to be slightly higher in 2018 due to the growing economic conditions.

• Demographic shift will impact the wine industry, with the retiring wine-loyal baby boomers being replaced by less affluent millennials.

• Labor costs and shortages --- dominant concerns
Outlook – U.S. Wine Trade

Inexpensive imports keep increasing

✓ Strong and strengthening U.S. dollar
✓ Available foreign supply
✓ Foreign in-country marketing support
✓ Willing millennials

Wine exports continue growing but at a slower pace,

✓ Unique quality, excellent value, and good reputation
✓ Canada: exports expected to decrease
✓ Continental Europe: continue to grow thanks to promotional efforts
✓ Japan: Slow down due to abandonment of TPP
✓ China: huge growth potential
Ornamental Crops: Situation and Outlook
New York Floriculture

- 2016 Floriculture data not available due to the budget issue
- A growing trend since the 2008 financial crisis, in spite of slightly variations each year
- The value of production in 2015 placed New York the 8th in the nation
- Bedding, gardening and potted flowing plants are the majors crops grown in New York
- Large (sales more than $10,000 annually) and small growers show similar growing patterns over years in New York and nationwide
- The share of value of production from small growers is larger in New York in comparison to the national market
Nursery Crops: Outlook
Average Profit Margins, 2016/2017

Nursery Crops: 2018 Outlook

• 51% of growers are confident that demand and profits will increase (percentage decreased from last year)

• 72% raised prices in 2017, and 70% plan to increase prices again

• Increasing production of propagation materials, container-grown perennials and shrubs

• Expected some shortages in field-grown trees, field-grown perennials, and container-grown trees
Ornamental Crops: Present and Future

• A period of steady growth over the years
• The industry is expected to grow mildly in 2018

However

The industry facing uncertainties:
• Demographic shifts
• Structural change—consolidation and de-consolidation
• Labor cost coupled with labor shortage

What’s important for growers?

- Diversify product varieties and improve the product quality (not volume anymore)
- Better brand manage skills
- More detailed analysis of SKU movement and replenishment levels
- Greater efficiency in distribution and logistics
- Anticipate consumers’ demand and need
- Innovative marketing technologies
- Have a succession plan!

Returns to Investment on the National Clean Plant Network - Grapes

Photos by Marc Fuchs, Cornell University
## Summary of benefit to cost ratio

<table>
<thead>
<tr>
<th>Initial Infection 20%</th>
<th>2015</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative benefits</td>
<td>1,230.20</td>
<td>3,540.60</td>
</tr>
<tr>
<td>Cumulative costs</td>
<td>12.9</td>
<td>26</td>
</tr>
<tr>
<td>Benefit to cost ratio</td>
<td>95.3</td>
<td>135.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initial Infection 5%</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative benefits</td>
<td>233.64</td>
<td>939.4</td>
</tr>
<tr>
<td>Cumulative costs</td>
<td>12.9</td>
<td>26</td>
</tr>
<tr>
<td>Benefit to cost ratio</td>
<td>18.1</td>
<td>36.1</td>
</tr>
</tbody>
</table>
Controlled Environment Agriculture
Vegetables: Consumer Willingness to Pay and Cost Studies
What is Controlled Environment Agriculture?

An innovative method of growing plants that involves creating optimized aerial and root zone environments, focusing on production benefits such as:

• high plant quality
• predictable crop timing
• consistently available quantity, and limited environmental impact
Consumers Willingness to Pay for Local CEA Vegetables: The Case of Tomato and Lettuce

- To measure differences in consumer willingness to pay for lettuce and tomatoes with:
  - Different origins (New York State vs. Out-of-State) and
  - Grown under different production systems (CEA vs. field-grown)

- To examine whether more detailed information about origin and production system affects consumer willingness to pay
# Results: Price Premiums

<table>
<thead>
<tr>
<th></th>
<th>Tomato</th>
<th>Lettuce</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYS vs. Out-of-state</td>
<td>$0.36</td>
<td>$0.27</td>
</tr>
<tr>
<td>CEA vs. Field</td>
<td>No difference</td>
<td>No difference</td>
</tr>
<tr>
<td>Info vs. No-info</td>
<td>No difference</td>
<td>No difference</td>
</tr>
</tbody>
</table>
Cost Studies for CEA Vegetables – Interactive Online Tools

Major costs can be divided into two categories.

• Fixed costs:
  - Greenhouse Structure
  - Environment control equipment
  - Growing and delivery

• Variable costs:
  - Production supplies
  - Labor
  - Utility
  - Packaging
Example: Tomato Cost Studies (year-round production)

- **Production Supplies**: 5%
- **Labor**: 53%
- **Packaging**: 17%
- **Utilities**: 10%
- **Other**: 3%
- **Annual Greenhouse Structure**: 5%
- **Environmental Control Equipment**: 4%
- **Growing and Delivery**: 3%

Cost (%)
Lettuce Interactive Spreadsheet: Assumptions Tab

The assumptions tab explains how this interactive spreadsheet works and what assumptions are made.

The tables and figures change as the variables are modified.

Five tabs: Assumptions, Inputs, Cost estimates, Results and Analysis.

### Spreadsheet: Assumptions

<table>
<thead>
<tr>
<th>Spreadsheet</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td>This spreadsheet requires information on production area, spacing, lighting, heating, and labor. The numbers in the blue box are prepopulated but user can make changes to the blue box to reflect their own operation. They can observe the resulting production and energy specifications in the yellow box.</td>
</tr>
<tr>
<td><strong>Cost estimates</strong></td>
<td>This spreadsheet includes items needed to calculate the variable costs and the fixed costs of a Greenhouse operation. User can make different choices for fuel use, lighting, and growing system. They can change parameters and costs of the items in the blue box to calculate the variable costs and the fixed costs for their operation.</td>
</tr>
<tr>
<td><strong>Results</strong></td>
<td>This spreadsheet presents the total revenue, expenses and annual operating profit. Total annual costs and profitability are calculated on a per head, per square foot, per house, and per acre basis. These results are based on the inputs user provide in the blue box mentioned above and these results can change as the parameters change.</td>
</tr>
<tr>
<td><strong>Analysis</strong></td>
<td>The analysis tab reflects profits under an alternative price and yield. User can conduct sensitivity analysis under different assumptions to compare different scenarios.</td>
</tr>
</tbody>
</table>

1. Analysis with 20% Increase and 20% Decrease in Labor cost
2. Analysis with 20% Increase and 20% Decrease in Utility cost
3. Analysis with 20% Increase and 20% Decrease in Packaging cost

### Notes:

1. Four options are available for user to choose the type of Greenhouse. User can choose the type they wish to build.
2. Square footage calculator is used for space efficiency and continuous production. Supplemental
Lettuce Interactive Spreadsheet: Inputs tab

The Inputs tab requires data on Production (greenhouse dimension, space use efficiency, etc.) and Spacing (no. of plants, days at spacing, etc.)

Users require to provide information in the blue box and can see the resulting production characteristics in the yellow box.
Thank you for your attention!

QUESTIONS?

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