Grape Growing 101

Keys to Success

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Essential Success Factors

• Market
• Site Selection
• Cultivar Selection
• Inputs
  – $$$
  – Materials
  – Management

Photo courtesy Mike White, ISU Extension
Market Potential
Market Potential

• Three primary markets for grapes:
  – Wine
    • 95+% of the present IA commercial market
    • Limited market size
  – Juice
    – Fresh consumption, jelly, and other food products
• Over-production will result in reduced fruit prices or unsold fruit.
Justification: reported production figures taken from 28 completed winery surveys submitted to '03 I.D.A.L.S. Wine Industry Survey. Projected market share values derived by extrapolating '92-'02 wine excise tax increase rates through '07 and adding reported IA wine production.
IA Winery Base Preferences

Iowa Wine Bases, 2002 - 2007

IA Grape Demand by Wineries

Justification: estimated number of bearing grape acres necessary to supply stated IA wine production levels given wine base preferences reported on 28 completed winery surveys submitted to ’03 I.D.A.L.S. Wine Industry Survey. Assumes finished wine yield of 525 gallons per acre.
Reported Commercial IA Vineyard Acres: Bearing + Unbearing

Keys to Success

1. Know your market
2. Seek a secure buyer
   - Develop relationships
   - Contract?
3. Plant in-demand cultivars

“Marketing is finding out what your customer wants and giving it to them.”

Tim Cohn; consultant
Site Selection
Site Selection Considerations

• Climate
  – Macro-climate
  – Meso-climate; topography

• Soil characteristics

• Distance from sources of herbicide drift

• Other concerns:
  – Access to irrigation source
  – Geometric regularity and plot shape
Climate

- **Macro-climate concerns:** influenced by weather patterns
  - Winter low temperatures
  - Average season length (frost free days)
  - Growing degree days
  - Annual precipitation

- **Meso-climate concerns:** heavily influenced by topographic position
U.S.D.A. Cold Hardiness Zones

- Zone 4B: -20 to -25° F
- Zone 5A: -15 to -20° F

• Locate the vineyard site in a region that is conducive to the survival of in-demand cultivars.
Minimum frost-free days for commercial cultivars ripening early - 150 days; early mid-season - 160 days; late mid-season - 170 days. Image courtesy Dr. Paul Domoto, I.S.U.
Sites offering less than 2500 G.D.D. should be considered unfavorable for grape production. Image courtesy of Dr. Paul Domoto, I.S.U.
Iowa’s climate typically supplies sufficient precipitation to foster successful grape production. However, seasonal droughts do occur, and soil characteristics can negatively impact moisture availability. Image courtesy of Dr. Paul Domoto, I.S.U.
Topographic Position & Meso-climate

- **Favorable sites offer:**
  - **Elevation:** to avoid collection of cold air contributing to late spring, and early fall frosts.
    - Situate vineyard ≥ 50 feet above nearby low-lying areas.
  - **Slope:** to facilitate cold air and surface moisture drainage.
    - Greater than 1.5% is desirable, but less than 15% is necessary for safe equipment operation.
  - **Exposure** to sunlight and wind.
    - Full exposure to sunlight and air movement is important.
  - **Aspect**
    - South commonly preferred, but each orientation offers assets and liabilities.
Find the Good Sites…
Soil

• Favorable sites offer:
  – Adequate depth of uncompacted soil.
    • Greater than 2’; 3’ preferred
    • Consult County Soil Survey; dig soil pits if in doubt
  – Adequate internal drainage.
    • Grapes generally grow poorly in oxygen-deficient soil!
    • Defined by County Soil Survey as “well drained” or “moderately well drained.”
    • Perform percolation test if in doubt.
  – Seasonal high water table lower than 4’; 6’ preferred
    • Consult County Soil Survey
Soil, Cont’d

• Favorable sites offer:
  – Proper soil pH and adequate nutrient concentrations.
    • Dual depth pre-plant soil analysis for pH, organic matter, P, K, and Zn concentrations is essential.
    • Soil pH between 5.5 and 7.0 is workable for most cultivars adapted to IA climatic conditions; soil pH between 6.0 and 6.5 is preferred.
  – Moderate to high available water capacity.
  – Moderate organic matter levels.
    • 1.0 to 4.0% is workable; 2.0 to 3.0% is preferred
  – Low harmful nematode populations.
  – Lack of herbicide residue; e.g. atrazine.