Sustainable & Organic Winegrowing Practices:
With Examples from Fetzer Vineyards

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Outline

• Introduction
• Examples of sustainable practices used by a “green” pioneer - Fetzer/Bonterra vineyards
• The business rationale: Motivations, Economics of using sustainable & organic practices
• Comments on the CA Sustainable Winegrowing Program & Reflections
Sustainability in Agriculture or Business: A broad concept, often viewed as a goal

*Sometimes called the “Triple Bottom Line”*

Ensuring viability over time...benefiting current & future generations
Concepts of Sustainable & Organic Agriculture

Some people perceive these concepts on a linear continuum...

Conventional → IPM → Biointensive IPM → Organic → Biodynamic

UNSUSTAINABLE → SUSTAINABLE → ORGANIC & BEYOND

However, this linear perspective is somewhat narrow.

An alternative view reveals more complexity ...
The Sustainability Concept
Relationships between
Organic & Sustainable Agriculture & Other Concepts

“Sustainable” winegrowing is a much broader concept,
Why Use “Sustainable” Practices? Motivations and Benefits

- Create quality improvements
- Consumer demand rising for organic products & environmentally sound practices
- Concern about social and environmental responsibility, and protection of health
- Complying to & avoiding regulations
- Competitive advantages (differentiation)
- Cost & risk reductions

“Doing the right thing”… win-win approaches

Source: Fetzer Vineyards, & Thrupp, 2002, “Fruits of Progress”
Why? Multiple Forces Behind Change

- Social and Environmental Challenges & Role of NGOs
- Consumers
- Sustainability Increasing in Importance
- Investors & Analysts
- Governments
- Employees
- Competition
Learning from Pioneers: Sharing Successful Experiences

**Fetzer Vineyards** is recognized as a leader in sustainable and organic practices. Annual Sales = 3.8 Mill. cases

**Bonterra brand**: Made from 100% organically grown grapes. Largest organic wine producer in US. Sales = 200,000 cases/yr

*Spreading innovation: We are actively involved in the CA Sustainable Winegrowing Program & other outreach*
Background on Fetzer and Bonterra Vineyards

• Founded by Barney Fetzer & family in 1968
• Home in Hopland, Mendocino County, CA
• Bought by Brown Forman Corporation in 1992
• Main brands: Fetzer (Valley Oaks) and Bonterra Vineyards, created in 1994
• Pioneer in developing sustainable business practices for 20 years; also leader in social responsibility and fighting underage drinking
FETZER’S COMMITMENT TO SUSTAINABILITY

- Economic
  Profitability
- Environmental
  Responsibility
- Social
  Equity

$e^3 = \text{“The Triple Bottom Line”}$
Walking the Talk...

- Certified Organic Vineyards - 1,800 acres
- Comprehensive Recycling
- Energy and water conservation
- Renewable energy
- "Green" building
- Worker Safety & Health
- Environmentally friendly purchasing & packaging
- Watershed restoration
- Wildlife protection
- Community programs
- Carpools & biodiesel

... and more...
How & why did this start at Fetzer?

- Fetzer established an organic garden in 1984 with diverse plants and foods, to pair with wines.
- Impressive results in food taste & quality and soil recovery; so, started using organic methods in vineyards in 1984-85.
- Results were good, so continued expansion of organic practices in vineyards, motivated to improve quality.
Basic Approaches for Growing Winegrapes Organically & Sustainably – *used by Fetzer & Bonterra Vineyards*

- Elimination of synthetic chemicals
- Building the *health of the soil*
- Conservation & enhancement of *biodiversity*
- Recycling of resources and nutrients
- Conservation of natural resources
- Using a *systems approach* to farming
- Protecting *health & welfare* of employees and communities
- Maximizing *quality* of the product (grapes and wine)

*Economics? Cost of organic production was not significantly higher, and worker risks reduced, positive results*
Management of Solid Wastes: “Reduce, Reuse, Recycle” –

Started effort in 1990, aimed to reduce dump costs

Recycling has reduced our waste sent to the landfill by 96% since 1990 – from 1,724 cubic yards to 60 cubic yards! (Zero Waste Team)
Saved 3200 cubic yards from going to landfill, and saved over $220,000.
Energy Conservation

- Installation of many different methods to conserve electricity, natural gas, propane and diesel

- Examples of Electricity conservation methods:
  - Tank insulation
  - Refrigeration motor controls
  - Lighting retrofits
  - Motor Upgrades
  - Electrodialysis – new tech

- The RESULTS:
  Over 1 Megawatt of savings in electricity
  AND mitigation of climate change

Example: Insulation “Jackets” on white wine tanks – reduces energy use by approximately 30% in tank room.
Renewable Energy

1. Green Energy - Fetzer was first CA winery to purchase 100% renewable energy - in 1998

   - 40 kW photovoltaic system; 55,000 kWh a year
   - Provides 75% of building’s energy use

   - 901 kW photovoltaic system 1.1 million KW a year!
     Largest in CA wine industry; provides 85% of energy in bottling facility

4. Biodiesel used in tractors & trucks

These energy practices greatly reduce our GHG emissions and impacts on climate change
- 901 kW photovoltaic system (2006)
- RV-MMA buys, installs, operates system
- Fetzer Vineyards buys electricity generated
- Long-term contractual arrangement
Economics of Fetzer’s Renewable Energy Strategy

Green Energy Contract (long term)
- 1998 became a direct access customer
- Began purchasing 100% renewable energy
  - Higher cost per KWh at first
  - Implemented energy conservation
    - total energy bill ↓
    - energy prices locked in
- Results: cost savings;
  - environmental benefits;
  - point of distinction & mitigates climate change

This removes 2200 metric tons of CO2 out of atmosphere annually
Alternative energy and efficiency in transport and vineyard operations

- Biodiesel used in tractors and big-rig trucks
  - Diesel made from vegetable/soy sources
  - Reduces dependency on oil
  - Reduces CO2 emissions and pollution
- Carpooling for employees
- Improved efficiency for truck travel (trucks don’t travel empty)
- Electric vehicles for on-site maintenance
Green Building Highlights

• 1985, Red Barrel Room
  – 90,000 sq ft, earth berm around sides eliminates the needs for a cooling system.

• 1992, Cellars
  – wall between fermenting areas, saving over 75,000 kW a year.

• 1996, Admin Building
  – Dirt walls, recycled wood, energy efficient lighting, motion sensors, wool carpet, night air cooling, ecofriendly insulation, and solar panels
Water Conservation

- **Source - mainly from Russian River**
  - Share w/fish, farmers, families

- **Pump and treat water onsite**
  - Use ultraviolet filtration in place of chlorine

- **Drip Irrigation in Vineyards**
  - Irrigation timing is done according to analysis of soil moisture & vine water status

- **Measure to manage: Conserve ~17% of water**
  - Reduced bottling sterilization time
  - Heat exchanger
  - Leak patrol
  - Re-circ pump

- **Winery Wastewater - treated, held & reused on vineyards**
Conservation of Habitat and Biodiversity in vineyards and landscape: Examples from Bonterra Vineyards
Cover Crops in Vineyards: Attract beneficial insects, conserve biodiversity, increase soil fertility & organic matter, sequester carbon

Can the full economic benefits of cover crops be quantified?
Conserving biodiverse habitat attracts hundreds of raptors, owls, & beneficial snakes and other wildlife (deer, coyotes, bobcats, etc.)
Watershed Restoration at Fetzer & Bonterra Vineyards

- Watershed conservation & creek restoration projects
  - Dooley Creek - 1994 & 04
  - McNab creek - 2004

- Collaboration & funding with government agencies
  - cost share programs
HUMAN ELEMENTS – “EQUITY”
“The soul of the company is found in the hearts of its people”

- Rewarding creativity: Encourage employees to pursue new ideas
- Employee educational opportunities for advancement
- Employee programs: English as a Second Language, car-pools, etc.
- Awards for E3 accomplishments
- Unique Safety & Health Program
- Community & charity programs: scholarships, river cleanup, etc.
Outreach, Opportunity & Awards

- Fetzer and Bonterra have won many prestigious awards for outstanding environmental performance, and for outstanding wines.
- Brown Forman is also integrating sustainability and social responsibility in all other brands, facilities, & operations – CORE; and active in the Century Council.
- Fetzer provides education & outreach to other growers, wineries, and the public; collaborates with scientists, educators, government agencies.
New Marketing Initiative: Fetzer Green Tour

Increase awareness and educate consumers on how they can make an environmental difference

Events: 25 consumer events and tastings
Elements include: Fetzer “Green” TV, radio promotions, local PR, consumer sweepstakes
Partnerships: Toyota (TBD) National Arbor Day Foundation (Confirmed)
The Business Case for using Sustainable Practices at Fetzer

- News project ideas are evaluated through the 3 Es at Fetzer (economics, environment, and equity)
- All capital projects must meet the “bottom line” (IRR) of return in order to be approved
- Most of these practices have documented economic benefits; and also help reduce risks
- These practices help produce great quality wine
- Our approach builds good relations with regulators and neighbors
- Environmental awards generate media attention, which helps marketing/sales
- Consumers are paying attention! There are market advantages in being genuinely “green.”

*It’s also “doing the right thing”… being socially responsible*
Fetzer participates actively in the CA Sustainable Winegrowing Program (SWP), which promotes sustainable practices among growers and wineries in California.


More than 1,300 wineries and vineyards have completed the SWP self-assessment, and more than 5,000 have attended educational seminars.
Practices Included in the “Code of Sustainable Winegrowing Practices” for Vineyards & Wineries

**“From Ground to Glass” – Total of 227 criteria**

- Viticulture
- Soil Management
- Vineyard Water Management
- Pest Management
- Wine Quality
- Ecosystem Management
- Energy Efficiency
- Winery Water Conservation & Quality
- Material Handling
- Solid Waste Reduction
- Environmentally preferred purchasing
- Human Resources
- Neighbors & Community
- Air Quality added in ‘06
Lessons Learned: What makes this program effective? (Key Elements)

- **Active participation of growers & vintners, government agencies, scientists and other stakeholders.**
- **Comprehensive in scope:** Addresses interlinked environmental, economic and equity goals.
- **Building bridges** — between environmental and agricultural interests → win-win solutions.
- **Innovative measurement system** — and transparent reporting of the results to the public.
- **Leadership by pioneers** — eg, Fetzer Vineyards
- **Serves as a model** for other crops, states, and businesses
WHAT ARE COSTS & BENEFITS OF ORGANIC WINEGROWING?

→ Bottom line: It is hard to generalize! The costs for organic winegrowing vary a lot, depending on region, specific site, labor costs, and management intensity.

→ Nevertheless, we reviewed data from:
Fetzer vineyards – Mendocino county; and other growers for Fetzer
Cost data from UCD ag economists – Sonoma county

→ These sources show that cost of organic winegrape production is approximately the same as conventional. It can be 5-10% more expensive or sometimes costs less.

→ Returns of organic production are often greater (especially if producers gain a premium)

→ However, the transition period usually has higher costs (for new machinery, etc.)
Costs of Production for these factors ($ per acre)

<table>
<thead>
<tr>
<th>Category</th>
<th>Organic (Fetzer in Mendocino)</th>
<th>Conventional (Avg in Mendocino)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease Control</td>
<td>77</td>
<td>220</td>
</tr>
<tr>
<td>Insect Control</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>Weed Control</td>
<td>70</td>
<td>225</td>
</tr>
<tr>
<td>Fertility Mgmt</td>
<td>87</td>
<td>120</td>
</tr>
<tr>
<td>Certification</td>
<td>15</td>
<td>115</td>
</tr>
</tbody>
</table>

Totals for these five Categories ($/acre):
Organic = $434
Conventional = $520

Source: Fetzer Vineyards, 2004
Yields and Total Operating Costs (Costs per Acre and Costs Per Ton)

Source: Fetzer Vineyards and Mendocino Ag Commissioner for County Yield Average

BOTTOM LINE:
U.C. Davis Study Summary In Sonoma: Results Confirm that Organic Costs/Ton are Lower than Conventional Costs/Ton

Source: Livingston, Pete, 2003, UC Davis, Agricultural Economics
Comparisons: Costs of Organic Production in Other Regions - Growers’ data (Dollars/Acre)

This shows that there are a range of costs, depending partly on location.
Recent data: Organic Wine & Beer*

- Retail sales of organic wine & beer in US:
  - Grew 48% from 2002 to 2003
  - Reached a total of $54 million in 2003
  - Of that total, wine sales were $50 million
- This beer & wine category had the highest growth rate of all organic food categories
  
  *(Natural Foods Merchandiser, June 1, 2004, based on sales from natural grocery/food stores)*

Organic Wine sales in the US in 2005 reached $80 million. This is 28% higher than the sales of organic wines in 2004

*(Organic Trade Association, 2006)*

*Note: These figures include both categories of organic wine*
Thank You

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