TOWARD THE NEW AMERICAN WINES
REGIONAL STYLE DEFINITIONS

ENOLOGY IN FARM WINERIES

Style Becomes Substance

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Farm Wineries: Unique Business Model

- Not federally differentiated
  - operate by federal basic winery permit and state and local permits
- Farm (Limited) Winery Acts are state laws
  - PA passed first in 1968, now in almost all states
  - Attempt to encourage or proscribe use of state grapes and fruit for value-added farm income
  - Usually tied to agricultural zoning
- Farm winery characteristics
  - Small in size → produce 500-50,000 cases/year
    - Many dependent on outside income
  - Agri-tourism and local marketing very important
  - Unique product niches essential to business model
  - Most dependent on quality-based business model
Quality and Commodity Models

- **Commodity**
  - Competition maximized within larger industry → fewer players determine price/cost ratios, tending to lowest cost/unit and total unit volume driving profitability → highly uniform product where quality tends to minimum acceptable standard

- **Quality**
  - Competition minimized by highly variable product line, where uniqueness and quality differentiation combine to → highly specific niche w/ unique quality standard → create high demand/supply ratio by consumer demographic → higher price/cost ratio → higher profit/unit

Location, Vintage, Variety, Style Drive Wine Niches

- Farm wineries largely isolated and tied to location of grape and fruit inputs
  - Climate, weather, topography, and soil drive variety selection and vineyard performance more than wineries that has multiple or volume sources
  - Isolation limits consumer access, yet profits maximized by on-site sales
  - Consumers driven by style preference that is learned
  - ∴ How does winery overcome these limits on variability and uniqueness to exploit niche marketing?

Variety and Vintage Drive Style

- Each grape variety can be made in several styles
  - higher variability → more niche possibilities
- Each vintage has seasonal and maturity differences in aroma/flavor profile that affect style
  - less consistency for any given style → niche quality standard affected
  - higher variability overall → more unique style niches possible
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Consumers Drive Style

- Consumers have pre-existing preferences when visiting farm winery
  - Historical and romantic conceptions of winery lifestyle
  - Each consumer has unique genetic tasting ability
  - Each consumer has unique breadth and depth of experiential knowledge
  - Above factors → style preferences
- Consumers looking for unique local experience
  - Expect positive and friendly ambience at winery
  - Expect to be educated about local wine styles and/or local culture
- Consumer buying behavior and style preference strongly affected by perception of ambience
  - Time spent, interaction w/ winery personnel, amount of education and wine styles tasted, quality of wines

Enology Tools Create Style

- Post-fermentation management gives aroma/flavor differences
  - Sanitation of storage vessels
  - Microbiological inhibitors
  - Racking and aeration procedures
  - Clarification procedures
Exposure to oak: type, method, and time
Time aging in tank
Blending decisions
Pre-bottling stabilization procedures
Bottling method and time aging in bottle

Enology Tools in Farm Wineries

• Style management advantages
  ■ Small size gives imperative to create price differential by greater variety of unique style niches
  ■ Reputation and branding can be built quickly on style
  ■ Style niche customers are very loyal to brand

• Style management disadvantages
  ■ Small size means labor and facility requirements necessary to create multiple styles are more of a constraint
  ■ Variability of consumer numbers and timing in tasting room makes matching supply and demand for each style problematic
  ■ Effect of difficult vintage on style consistency hard to overcome

Farm Wineries: Style Becomes Substance

• Style management is far and away the most versatile tool for maximizing reputation and profit in a small farm winery by creating unique and high quality niches
• Because style niches are so important to branding, a style niche can have large effect on reputation, either good or bad
• Specificity of style niches mean quality assurance, consumer education, and consumer feedback become critical in a farm winery
• Greater profits from successful style niches mean greater stability for business for growth, greater options for adaptability and greater chance of successful generational transfer
• Greater stability of style-driven wineries supports stability in more isolated local economy
Desirable Traits in Midwestern Hybrid Grape Wines

- Great fruitiness
- Usually good color
- Sufficient acid
- Great taste intensity upon presentation to mouth
- Good food pairing
- Good dry or sweet

Problem Traits in Midwestern Hybrid Grape Wines

- Some strong varietal aromas and tastes
- Can be too acid
- Tannins low
- Prone to structural breakdown of flavor and body
- Sweeter wines prone to re-fermentation

Cool Climate *Vitis vinifera*

Intraspecific Crosses

- Cool Climate = winter minimum of -7°C to -22°C, and depends on acclimation
- Lemberger (red, moderate cold resistance, fruity, good wine quality)
- Comtessa (red used for white, moderate cold resistance, fruity wine)
- Siegerrebe (white, fairly cold resistant, very floral wine)
- Noblessa (white, moderate cold resistance, good wine quality reported)
- Morio muscat (white, moderate cold, northeast US, very floral and fruity)
- Madeleine Angevine (white, moderate cold, good wine quality reported)

Cool Climate Hybrids

- French/American, Cornell, Minnesota, UC Davis
- Useful site [http://viticulture.hort.iastate.edu/cultivars/cultivars.html](http://viticulture.hort.iastate.edu/cultivars/cultivars.html)
- Cool Climate = winter minimum of \(-10^\circ C\) to \(-26^\circ C\), and depends on acclimation

- Reds
  - Baco noir, Chambourcin, Chancellor, Concord (native *labrusca*), Corot noir, Crimson cabernet, DeChaunac, GR7, Kozma 55, Kozma 525, Landot noir, Leon Millot, Marechal Foch, Noiret, Norton, St. Vincent

Cool Climate Hybrids

- Old French/American, Cornell, etc.
- Cool Climate = winter minimum of \(-10^\circ C\) to \(-26^\circ C\), and depends on acclimation

- Whites
  - Catawba (rosé), Cayuga white, Chardonel, Delaware (native *labrusca*), Niagara, Seyval blanc, Traminette, Valvin muscat, Veeblanc, Vidal blanc, Vignoles
  - Swenson, Minnesota, Cornell, etc.

- Cold Climate = winter minimum of \(-20^\circ C\) to \(-35^\circ C\), depends on acclimation

- Reds
  - Baltica, Frontenac, Marquette, MN 1200, Sabrevois, St. Croix, Temparia, Zilga
  - Swenson, Minnesota, Cornell, etc.

- Cold Climate = winter minimum of \(-20^\circ C\) to \(-35^\circ C\), and depends on acclimation

- Whites
  - Alpenglow, Brianna, Edelweiss, Espirit, Frontenac gris (gray used for white), Kay Gray, LaCrescent, LaCrosse, Louise Swenson, Petite Amie, Petite Jewel, Prairie Star, Skujinsh, St. Pepin, Swenson white, Ventura

Winemaking in Cool/Cold Climates

- General fruit harvest characteristics
  - Supply affected by late spring/early fall frost damage
  - Ripeness affected by early fall frosts
  - Acids often higher (cool nights during veraison)
  - Ripeness of skin/seeds vs. Brix not always consonant
- Tannin and/or color may be lower
- Canopy management for berry ripeness essential
- Irrigation surplus/deficit can affect flavors

- Hybrid fruit harvest characteristics
  - Not usually suitable for high Brix winemaking
    - Can have stronger native flavors w/higher °Brix
    - May need to limit skin contact and/or vint at below 20 °Brix
  - Acids in hybrids are often very high (above 10 g/L)
    - Often need to blend with lower acid wines
    - Often need to do malolactic or salting out
  - Tannins lower
    - May need tannin additions
  - Berry Sensory Evaluation very helpful
    - Style selection very important

- Must modifications
  - Check must for K⁺, TA, pH, and organic acid profile
  - If high acid/normal pH and K⁺
    - blend with lower acid must
    - wait and do malolactic on wine
  - If high acid/low pH, normal K⁺
    - can seed with bitartrate to precipitate bitartrate
    - can add K₂CO₃ or CaCO₃, can affect flavor & texture of wine
  - If high acid/high pH
    - Blend with low acid and low pH must
    - If high K⁺, can seed with tartrate to precipitate bitartrate
Hybrids need more pectinase added to must
- 25-50 mL of 10% solution/ton grapes (use pectinase with low cinnamyl esterase)
- Press whites and remove heavy lees quickly

Many hybrids have low tannins
- Tannin and enzyme additives may be useful
- Hot pressing maybe useful to mature tannins and color

Some hybrids have vegetative or “funky” musts
- Grape and/or oak tannins in must during fermentation may be useful

Hybrid Fermentations
- Yeast needs similar to vinifera
  - Condition yeast with vitamins, amino acids, yeast metabolites, and nitrogen
  - Add nitrogen in parts to fermentation
- Yeast matching with hybrids in its infancy
  - Mixed results with yeast with malolactic capabilities
- Can try malolactic co-fermentation w/high acid musts
  - Both reds and whites can benefit

Temperatures
- similar to vinifera for both whites and reds
- sometimes cooler reds to minimize skin extraction

Pressing reds
- Extended maceration not usually recommended
- Lighter pressing reduces “hybrid” flavors

Cellaring Hybrids
- More subject to H2S during fermentation
  - Keep careful watch during and right after fermentations
Aerate and use free SO₂ and/or copper sulfate if needed, early in cellaring process

Avoid waiting to do malolactic until warmer weather

Do protein tests and any resulting fining early

Hybrid wine styles

Many hybrids bottled early, unoaked and fruity

- Usually good food and restaurant wines

Many hybrid wines have high acid and can be sweetened to good sweetness/acid balance

- 1 to 8% residual (7 to 12 g/L acid), plus potassium sorbate

Many make good late harvest or ice wines or ports

If aging reds, tannin addition to must and/or heavier oaking can be useful

Hybrid wine blends

Many hybrids blend well with vinifera

- Usually good food and restaurant wines

- Can use to adjust acid and alcohol and fruitiness or spiciness

- Flavor profiles need to be carefully adjusted while blending

- Usually start with high ratio, either way

WINEGRAPE INDUSTRY COLORADO AND NEBRASKA

Great Plains, High Plains and Mountain sub-regions

- Cool or cold climate viticulture w/varied moisture

- Hybrids, Vitis labrusca, Vitiis vinifera all grown

Colorado Terroir Vitis vinifera dependent

- Vinifera w/ few hybrid or blended wines

Nebraska Terroir hybrid dependent

- Hybrids and hybrid blends dominate w/some Labrusca
Niche marketing of regional “typical” wines and unique terroir in childhood in both states

Niche Market Strategies in Cool/Cold Climates

- Make reputation with standard *vinifera* and add cold tolerant grapes later
  - Limited suitable sites → limited volume and limited market penetration
    - Vineyard sites may not be near market population
  - Competition with cheaper wine from known reputation regions
- Hard to make local standard *vinifera* terroir compete with known reputation regions
- Create new markets with cold tolerant varieties
  - Many suitable sites → unlimited potential volume → pervasive market penetration possible
    - Vineyard sites near market population → familiarity
  - Niche variation means little competition
- Definitions of niche wine quality must be created
  - Whole market must be created from scratch
    - Dedicated pioneer growers and winemakers
  - Consumer education and winemaking skill take time
    - Local winery tasting rooms, farmer’s markets, restaurants essential to education of consumer and marketing players

National and International Marketing Possibilities

- Terroir is Where Market is Going
  - Regional, Sub-regional, AVA→Styles and Terroir
  - *Vinifera* “typical” regional wines
  - Hybrid or *Labrusca* “typical” regional wines
  - *Vinifera* w/ local or regional terroir
  - Hybrid w/ local or regional terroir
New niches of “typical” regional blends

- Made w/ vinifera/hybrid
- Made w/ hybrid/labrusca
- Made w/ vinifera/hybrid/labrusca

Regional, Sub-regional, AVA → Terroir and Style Niches

- Niche definition especially important in developing regions

Newer cool climate regions are innovation hot spots

- Standard vinifera varietals in better parts of cool region
- Unusual vinifera varietals in moderately cold parts of regions
- Inter-specific hybrids and native American in coldest regions
  - 19th and early 20th century by American and French breeders
  - New York breeding in 20th and 21st centuries
  - Wisconsin/Minnesota breeding in 20th and 21st centuries

Niche regional wines: cool climate market trend

Varietals

- Standard vinifera (CO)
- Hybrids of vinifera and native species (NE & CO)
- Hybrid backcrossed w/hybrid or vinifera (NE & CO)
- Unusual vinifera or vinifera/vinifera cross (CO)

Blends

- Standard vinifera (CO)
- Unusual vinifera/standard vinifera (CO)
- Hybrid/vinifera (CO & NE)
- Hybrid/hybrid (NE & CO)
- Hybrid/vinifera/labrusca (NE & CO)
ADVANTAGES OF BLENDS REGIONAL STYLES AND TERROIR

- Unique Aroma and Flavor Identities
  - No competition in niches in all of world
  - When identity established \( \rightarrow \) scarcity \( \rightarrow \) higher prices
- Great fit with grapes grown in all parts of region
  - Specialization of expression of local terroir effects
  - Model from other regions + cuisine co-development
- Diverse palette to create wines for foreign tastes
  - Export markets expand niches to larger market

DISADVANTAGES OF BLENDS REGIONAL STYLES AND TERROIR

- Unique Aroma and Flavor Identities
  - Hard to establish brand identity from unknown status
  - Must educate consumers to unique characters
- Lack of definition of local vineyard terroir effects
  - May take decades
- Lack of experience in blending regional styles
  - May take years of experimentation to develop unique wines
- May take years of marketing feedback to match wines to consumer niches

KEYS TO NICHE SUCCESS ARE QUALITY AND CONSISTENCY

- Product and Image Must Coordinate w/Niche Strategy
- Unique Aroma and Flavor Identities Equate with Quality
  - Must show high quality fruit and winemaking sensory characteristics
  - Must educate winemakers to sensory quality definitions
■ Must educate consumers to sensory quality definitions

■ Equate Vineyard and Regional Terroir w/High Quality
  ■ Rootstock, cultivar, canopy, and pest management for optimal quality operation

TOOLS FOR NICHE SUCCESS

■ Must Keep Impeccable Records and Perform Needed Research
  ■ By industry and researchers, for grapes, wines, marketing feedback
  ■ Quality only exists when it is proven by sales to the educated consumer

■ Only Quality Business Model Has Consistent High Quality
  ■ High Quality + Niche Fit + Consistent Consumer Satisfaction \( \rightarrow \) Profit for smaller operation
  ■ Equal Quality to Competition + Lower Cost + Market Share \( \rightarrow \) Profit for larger operation

TAKE HOME LESSONS REGIONAL WINES

■ Create and exploit unique, high quality, valuable wine niches, both here and to export

■ Unique wine niches express our grapes, climate, history, and cuisine

■ Terroir, regional definitions, and blending skills take time and experimentation to perfect niches

■ Unique wines need highly effective marketing

■ Without unique regional wines, growth potential is limited by excessive competition