

# 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  $-7^{\circ}\text{C}$  to  $-22^{\circ}\text{C}$ , 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>

- Cool Climate = winter minimum of  $-10^{\circ}\text{C}$  to  $-26^{\circ}\text{C}$ , 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  $-10^{\circ}\text{C}$  to  $-26^{\circ}\text{C}$ , 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  $-20^{\circ}\text{C}$  to  $-35^{\circ}\text{C}$ , depends on acclimation
- Reds
  - Baltica, Frontenac, Marquette, MN 1200, Sabrevois, St. Croix, Temparia, Zilga
- Swenson, Minnesota, Cornell, etc.
- Cold Climate = winter minimum of  $-20^{\circ}\text{C}$  to  $-35^{\circ}\text{C}$ , 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  $K_2CO_3$  or  $CaCO_3$ , 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 H<sub>2</sub>S during fermentation
    - Keep careful watch during and right after fermentations



- Aerate and use free SO<sub>2</sub> 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*, *Vitis 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
    - 19<sup>th</sup> and early 20<sup>th</sup> century by American and French breeders
    - New York breeding in 20<sup>th</sup> and 21<sup>st</sup> centuries
    - Wisconsin/Minnesota breeding in 20<sup>th</sup> and 21<sup>st</sup> 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 → scarcity → 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 → Profit for smaller operation
  - Equal Quality to Competition + Lower Cost + Market Share → 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