“We Are Both Hosts”*: U.C. Davis, Napa and Wine Quality

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* John Williams, Owner, Frog’s Leap Winery
WELCOME to this world famous wine growing region

and the wine is bottled poetry...
Napa grapes represent 98% of Napa’s agricultural revenue. Although only 4% of California’s grape crush, they represent 25% of all revenue. Napa wine sales are estimated at $4.4 billion, and Napa tourism is estimated at $1 billion.
3 reasons for Napa’s leadership

• Environment
  – Where grapes are grown effects grape and wine characteristics. Napa is an excellent location.

• Owners
  – Napa owners are committed to excellence and willing to spend what it takes

• Adoption of science
  – Napa growers encourage research and are early adopters of new ideas
This Case Study

• Demonstrate the reciprocal and symbiotic interaction between UC Davis and the Napa wine and grape industry in
  – Teaching
  – Research
  – Extension

• Using viticultural research (“Canopy Management”) in the 1980s as the context.
What Happened

- During the 1980s Davis researchers working in Napa Valley vineyards discovered how manipulating canopy and irrigation could change grape characteristics.
- Cooperative and University Extension(s) disseminated the information—primarily to UCD graduates
- The collapse of AxR rootstock in the late 1980s necessitated replanting—which allowed Napa growers to adopt the new ideas within a short period of time
Why Napa?

• Closest coastal wine region to Davis—1 hour driving time

• Long history of collaboration

• Oakville Experimental Vineyard—40 acres
  – 1947 “South Vineyard
  – 1954 “Federal Vineyard”
The Kliewer Trial at Oakville

• 5 acres of Cabernet Sauvignon in the South Vineyard
• 2 trellis systems (light penetration)
• 3 row spacings (density)
• 5 pruning levels (yield)

Carlos Tizio (Argentina) and Dr. Mark Kliewer
Light Penetration Into Canopy

“California Sprawl” Trellis

- Increases berry color
- Earlier ripening
- Lowers pH
- Reduces vegetal aroma (“green bean”)
- Higher tannin levels
- Reduces rot
North Coast Viticultural Research Group

- Phil Freese (Mondavi) Ph.D. UCD
- Rollin Wilkenson (Christian Bros.) B.S. UCD
- Tucker Catlin (Sterling) B.S. UCD
- Bob Steinhauer (Beringer) M.S. Fresno State
- Will Nord (Domaine Chandon) M.S. UCD
- Ed Weber (Joseph Phelps) B.S. and M.S. UCD
- Zelma Long (Simi) B.S. Oregon State
- Rob Davis (Jordan) B.S. UCD
Davis Trained Managers

Number of Wineries

Napa Winemakers in 2012

Sample of 231 Napa Wineries
Replanting Napa

• 1983 Phylloxera identified in Napa
• Replanting in late 1980s
• VERY Expensive
• Allowed new vineyards to be planted based on Davis research—better varietal characteristics and earlier ripening
• Allowed switch to Cabernet Sauvignon (7000 acres expand to 19,000)
Cooperative Extension

- Farm Advisor had long played a key role in research and information transfer
- Jim Lider, Keith Bowers, Ed Weber, Monica Cooper
- Often worked one on one
- Created Napa Valley Vineyard Technical Group. Monthly meeting to share research results
University Extension

- Partnered with Viticulture and Enology to offer 20-30 “short courses” each year on viticulture and enology
- About 1000 enrollments each year
- About 20% of enrollments came from Napa
Conclusion?

• Through teaching, research and extension, UC Davis has had a profound impact on the California and Napa grape and wine industry.

• This review of the impact of canopy management on wine quality is but one example of many.

• Industry’s problems, questions and funding meet with U.C.’s research, teaching and extension to create a reciprocal and synergistic relationship.

• In John Williams’ words: “We are both hosts”
“We are both hosts”

UC Davis 1940? Students in industry funded winery