



2007 Grape Cultivar Trials

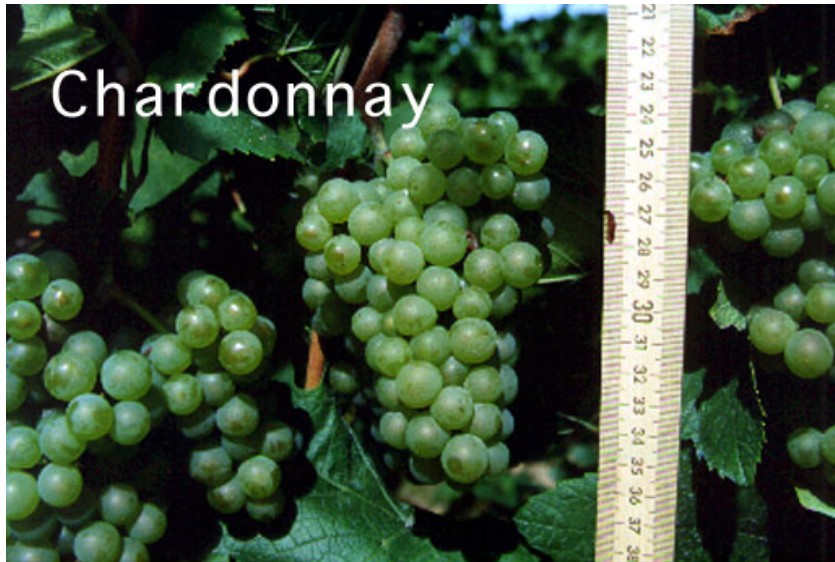
S. Kaan Kurtural



Cultivar Trials

- University of Kentucky
 - 4 locations
 - Lexington
 - Princeton
 - Quicksand (abandoned)
 - Owenton

Chardonnay (Pinot Chardonnay)



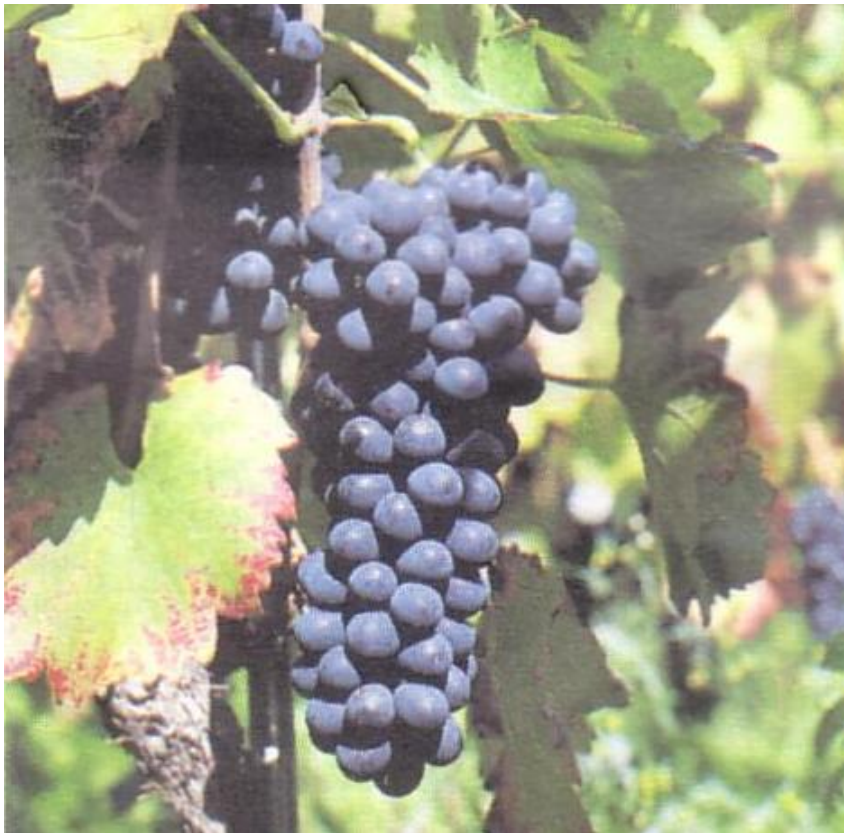
Soils	Well-drained calcareous soils
Vigor	Moderate
Pruning	Medium to long spurs
Disease	Downy mildew-low Powdery mildew-mod Bunch rot-high
Wet weather	Susceptible
Rootstocks	Vigorous
Yields	Low to moderate

Cabernet franc



Soils	Most soils
Vigor	Vigorous
Pruning	Medium to long spurs
Disease	Downy mildew –fair Powdery mildew-high Bunch rot-low
Wet weather	Good resistance
Rootstocks	Low to moderate vigor
Yields	High

Syrah (Shiraz)



Soils	Well-drained
Vigor	Vigorous
Pruning	Medium to long spurs
Disease	Downy mildew –fair Powdery mildew-high Bunch rot-high
Wet weather	Susceptible
Rootstocks	Low vigor
Yields	High

Chambourcin



Region I, maybe II

Soils	Well-drained
Vigor	Moderate
Pruning	Short spurs
Disease	Downy mildew –fair Powdery mildew-low Bunch rot-low
Wet weather	Fair resistance
Rootstocks	Low vigor
Yields	High

Traminette



Region I

Soils	Well-drained
Vigor	High
Pruning	Short to medium spurs
Disease	Downy mildew –fair Powdery mildew-low Bunch rot- fair
Wet weather	Susceptible
Rootstocks	Low vigor
Yields	High

Vidal blanc



Region I, II

Soils	Well-drained
Vigor	High
Pruning	Short to medium spurs
Disease	Downy mildew –low Powdery mildew-High Bunch rot- fair
Wet weather	Susceptible
Rootstocks	Low vigor
Yields	High

Niagara



All regions

Soils	Well-drained <pH 6.2
Vigor	High
Pruning	Medium to long spurs
Disease	Downy mildew –high Powdery mildew-fair Bunch rot- low
Wet weather	Tolerates well
Rootstocks	Low vigor
Yields	Moderate

Norton



Region I, II and maybe III

Soils	Well-drained <pH 6.2
Vigor	High
Pruning	Long spurs
Disease	Downy mildew –low Powdery mildew-low Bunch rot- low
Wet weather	Tolerates well
Rootstocks	Low vigor
Yields	Low



2000 Wine Grape Trial in Princeton

- Eight cultivars planted in spring 2000
- Two American
 - Niagara/own
 - Norton/own
- Three hybrids
 - Chambourcin/own
 - Vidal blanc/own
 - Traminette/own
- Three vinifera
 - Cabernet franc/3309C
 - Chardonnay/own/3309C
 - Pinot noir/3309C



Materials and Methods

- 8' x 16' plant density
- N-S orientation
- Single canopy
- Spur-pruned to 40 buds in spring
- 4-ft wide herbicide strip



Results: Yield Components

Cultivar	Pruning wt (lb/vine)	Crop load	Clusters	Yield (T/A)
Vidal blanc	2.5cd	8.2a	119a	6.4a
Niagara	2.7cd	6.4ab	111ab	5.5a
Chardonnay	3.2bc	6.7ab	30d	1.2cd
Traminette	4.0ab	1.8d	9d	0.2e
Pinot noir	4.0ab	2.2d	22d	0.5de
Cab. Franc	4.5a	2.7dc	61c	1.6c
Chambourcin	1.5d	4.7bc	95ab	3.0b
Norton	2.2cd	3.6cd	83bc	1.5b
P	0.0001	0.0001	0.0001	0.0001



Results: Fruit composition


Cultivar	Berry wt (g)	Brix	Juice pH	TA (g/L)
Vidal blanc	1.7c	18.1d	3.5cd	5.2b
Niagara	3.4a	14.5e	3.6cd	3.7c
Chardonnay	1.6c	22.1a	3.8b	5.2b
Traminette	1.5cd	20.1bc	4.0a	3.9c
Pinot noir	1.2de	20.7ab	4.1a	4.8b
Cab. Franc	1.6c	21.8a	4.1a	3.5c
Chambourcin	1.9b	19.2dc	3.4d	4.7b
Norton	1.1e	21.2ab	3.6cd	7.5a
P	0.0001	0.0001	0.0001	0.0001



Discussion

- Cab. Franc, Pinot noir, Traminette, Norton have too much area allocated with 8' x 16' density
- Crop load of less than 5 for cultivars mentioned above
- Undercropping, therefore mutual shading for the cultivars mentioned above





Effect of Training System on Yield and Fruit Composition of Wine Grapes

- UK-Horticulture Research Farm
- Planted in 2002
- 8' x 12' plant density
- 5 different vine combinations on 2 training systems
 - Vertical shoot position
 - Fan-system
- Vines spur-pruned to 40 buds in spring

Results: Canopy variables

Cultivar	Vine size(lb/ft)	Crop load	Count shoots retained	Non-count shoots removed	Total shoots
Chardonnay	0.44	5.9b	19c	24a	37bc
Cab Franc	0.59	5.9b	27b	29a	45ab
Shiraz	0.67	4.2b	18c	17b	36c
VB/own	0.54	8.2b	37a	15b	46a
VB/3309	0.40	16a	35a	15b	49a
P	0.4302	0.0077	0.0001	0.0001	0.0084
TR_system					
Fan	0.52	9.4	29a	22a	42
VSP	0.54	6.5	26b	18b	42
P	0.4302	0.1470	0.0267	0.0271	0.8051
Cultivar x TS	0.3088	0.2827	0.1129	0.1244	0.3159

Results: Yield Components

Cultivar	Total clst harvested	Marketable clst	Culled clst	Marketable wt (lb)	Yield (T/A)
Chardonnay	45c	43b	2d	9.3c	2.1c
Cab Franc	67b	49b	18a	16.5c	3.7b
Shiraz	39c	30c	9bc	10.2c	2.3c
VB/own	78a	73a	5cd	29.1a	6.6a
VB/3309	81a	71a	11b	26.6a	6.1a
P	0.0001	0.0001	0.0001	0.0001	0.0001
TR_system					
Fan	64	56a	7	18.8	4.3
VSP	59	50b	10	17.9	4.1
P	0.1584	0.0139	0.0934	0.3884	0.3884
Cultivar x TS	0.2382	0.1241	0.9537	0.0873	0873

Results: Fruit Composition

Cultivar	Total clst	Brix	Juice pH	TA (g/L)	Berry wt (g)
Chardonnay	45c	18.8b	3.33c	3.8d	1.71c
Cab Franc	67b	19.1b	3.53b	5.5c	1.66c
Shiraz	39c	19.9a	3.72a	5.3c	2.18a
VB/own	78a	17.6c	3.03e	8.3a	1.95b
VB/3309	81a	18.7b	3.15d	7.7b	1.95b
P	0.0001	0.0001	0.0001	0.0001	0.0001
TR_system					
Fan	64	18.9	3.35	6.1	1.87b
VSP	59	18.7	3.35	6.1	1.93a
P	0.1584	0.2930	0.4016	0.9093	0.0392
Cultivar x TS	0.2382	0.8190	0.1497	0.5830	0.4100



Discussion

- Mean vine size in measured in response to 2006 was 0.53lb/ft:
 - Vines were in balance
- Crop load was not affected by training systems in 2006
- Number of shoots removed during canopy management was 22% higher for the Fan System trained vines



- Vidal blanc had the highest number of marketable clusters harvested
- Cab. Franc had the highest number of culled clusters
- Chardonnay and Shiraz had the smallest yields in 2007



- Fruit composition was not affected by training system in 2007
- Shiraz had the highest Brix measured
- Own-rooted Vidal blanc had the lowest Brix measured



- Due to Easter freeze

- Vine size was maintained by retaining above normal non-count shoots
- Explains lack of interaction between cultivar and training system in 2007 that was reported in prior years.