

Table 1. Grape Cultivar and Breeding Line Survival/Vigor Ratings at Four University of Nebraska Viticulture Program Research Sites. Ratings 1 to 9, with 1 = dead and 9 = all buds alive and breaking. Based on two to four 6-plant replications.

Cultivar	Kimmel Vineyard		Nemaha Vineyard			Pawnee Vineyard	Peru Vineyard
	2002	2003	2001	2002	2003	2002	2003
Bianca/3309	6.0 ***#	7.9***#	5.8	8.0		1.0***	
Cabernet Franc			2.3	6.3	4.9	3.8	
Catawba#	4.1		5.8***	6.0		1.9*	
Cayuga White	3.8***	7.7	4.4***#	7.5		3.5***	
Chambourcin, own roots	4.5**	7.4	6.8*	6.5	7.7	5.0*	7.4***
Chambourcin/3309	4.4 **	7.1	7.0**	5.5	6.7	5.4**	7.2***
Chardonnay			3.0*	7.6	6.3	3.4*	
Chardonel	5.4 **	7.4	5.9 **	6.7	6.9	5.7**	5.4
Cynthiana/Norton	6.6 **	7.3	5.9 **	8.5	8.0	7.4**	7.4
deChaunac*			8.1	8.9	8.3	7.8	
Delaware*			8.1	8.8	8.5	7.8	
Edelweiss	8.6 **	8.7	7.8**	8.9	8.4	8.1**	8.5
Esprit#			5.7***#	7.6			
Frontenac	8.7 **	8.7	8.8*	8.9	9.0	8.1**	8.4
Lacrosse	8.7 **	8.7	8.7*	8.4	8.1	7.4*	8.3*
Lemberger**	3.4	6.1	5.6	8.3	7.9	5.0	8.1
Leon Millot	7.4 **	6.8	6.1 **	9.0	8.3	6.2 **	
Marechal Foch			6.8 **	8.8	7.0	5.3*	
Merlot*			3.7	7.6	5.3	4.1	
Niagara***	6.0		6.9	8.2	5.5	2.5	
Petite Jewel*#			3.8				
Pinot Gris			3.0	6.4	4.8	2.2	
Pinot Noir			2.2	4.3	3.3	2.7	
Riesling			5.9	8.1	7.7	4.5	7.2
St. Croix	8.9	8.6	8.7	8.8	8.9	8.5	8.6
Seyval Blanc*			6.8	6.8	8.0	6.6	
Shiraz			3.0	4.4	5.7	2.2	

Traminette**	3.8	8.1	4.6*	8.6	7.2	5.8	7.4
Trollhaugen***#			7.2	5.1	8.1		
Valiant***						4.8	
Vidal Blanc	4.7 ***	6.7	2.2***#	8.0		4.2***	
Ventura			7.3	6.5			
Vignoles	8.2 ***	7.0	8.1 **	8.9	8.4	8.0**	8.2
Viognier			1.4	1.2	1.0	3.1	
ES 2-1-9#(Ssabrevois)			5.3 **	5.1			
ES 3-24-7#(Prairie Star)			6.2**	7.2			
ES 5-4-29#			5.5 **	7.6			
ES 6-1-43#			4.3* *	5.6			
ES 10-18-30#			7.1**	5.8			
ES 7-4-76 #(Brianna)				9.0****			
MN 1131#			5.9	8.0			
MN 1166#(LaCrescent)			7.6 **	8.3			
MN 1197#			7.2***	7.8		2.4	
MN 1198#			6.1***	7.0		1.1	
MN 1200#			8.1 ***	7.1			
MN 1211#			8.0**	7.1			
NY GR7#			7.6***	7.3		2.8	
NY 789# = 70.809.10	6.5***	7.1	6.3***	8.3			
NY 62.122.1#			3.8***	6.7			
NY 73.136.1/5C #	6.3	7.9	4.9***	7.3			

* = Planted in 1998

** = Planted in 1999

*** = Planted in 2000

**** = Planted in 2001

= Based on only one 6-plant replication; all others based on two or more 6-plant replications.

Table 2. Bud-break Comparisons of Grape Cultivar and Breeding Lines by Location, Spring 2002. Ratings 1 to 6, with 1 = tight; 2 = slight swelling; 3 = swollen, fuzzy; 4 = some green showing; 5 = bifurcation of the bud; 6 = leaves distinctly visible, shoots elongating.

Note: Because data were taken on different dates, compare only for cultivars in a specific vineyard (vertical columns).

Cultivar	Kimmel ^z Vineyard	Nemaha ^y Vineyard	Pawnee ^x Vineyard	Peru ^w Vineyard
Bianca/3309		5.6***#		
Cabernet Franc		3.9*	5.1*	
Catawba		4.5***#	3.8***	
Cayuga White		3.8***#	4.2***	
Chambourcin	1.9**	2.4*	4.0*	1.7
Chambourcin/3309	1.5**	1.8**	3.8**	1.5
Chardonnay		4.4*	4.8*	
Chardonel	1.8**	2.5**	4.3**	1.8
Cynthiana/Norton	2.5**	4.1**	4.4**	2.0
deChaunac		5.8*	5.9*	
Delaware		3.7*	5.6*	
Edelweiss	3.4**	4.8**	5.6**	3.3
Elvira			5.2	
Esprit		4.3***#		
Frontenac	1.8**	3.8*	5.2**	2.0
Gewurztraminer		5.5	4.8**	
LaCrosse	2.3**	4.9*	5.3*	2.5
Lemberger	2.1**	4.9**	5.5**	3.3
Leon Millot		5.7***#	5.5*	
Marechal Foch		5.9***#	5.6*#	
Merlot		4.1*	3.7*	
Niagara		5.3***#		
Petite Jewel		5.1***#		
Pinot Gris		1.6*	4.7*	
Pinot Noir		3.0*	4.7*	
Riesling		4.6**	5.1**	2.8
Rougeon			3.9	
St. Croix	3.2 **	4.7**	5.6**	2.5
Seyval Blanc		2.2*	3.4*	
Shiraz		2.1*		

Traminette	1.7**	3.8**	4.1**	1.8
Trollhaugen		4.8***#		
Valiant			4.6***	
Vidal Blanc		3.7***#	3.3***	
Ventura		4.0***#		
Vignoles		3.7***#	4.3**	1.3
Viognier		4.0*v	4.0*	
ES 2-1-9 (Sabrevois)		4.9***#		
ES 3-24-7 (Prairie Star)		3.6***#		
ES 5-4-29		3.9***#	4.8	
ES 6-1-43		4.7***#		
ES 10-18-30		5.0***#		
ES 7-4-76 (Brianna)		4.3***#		
MN 1131		4.7***#		
MN 1166 (LaCrescent)		4.8***#		
MN 1197		5.8***#		
MN 1198		5.6***#		
MN 1200		4.5***#		
MN 1211		5.8***#		
NY GR7		5.7***#		
NY 789 = 70.809.10		4.3***#		
NY 62.122.1		4.7***#		
NY 73.136.1/5c		4.7***#		

* = Planted in 1998
** = Planted in 1999
*** = Planted in 2000
**** = Planted in 2001
= Based on only one 6-plant replication; all others based on two or more 6-plant replications.

z = Data taken 4/17/02
y = Data taken 4/18/02
x = Data taken 4/24/02
w = Data taken 4/16/02
v = All plants dead but 1

Table 3. Evaluation of Weed Management Treatments Conducted by the University of Nebraska Viticulture Program in Cooperation with James Arthur Vineyards, Raymond, NE

Mean Weed Control Rating ^z

Treatment	Rating on 4/24/01	Rating on 10/22/01	Rating on 4/19/02	Rating on 5/29/03
Control (no weed control)	3.0	1.6	1.5	2.3
Herbicide Control (Roundup, Rely)	3.5	5.3	3.6	6.1
Landscape fabric alone	7.9	8.0	8.4	7.8
Landscape fabric plus prairie hay	8.8	8.3	8.3	8.1
Landscape fabric plus wood chips	7.9	8.3	7.0	7.0
Prairie hay ^y	8.0	7.0	7.1	7.3
Wood chips ^x	6.8	5.8	5.0	4.5
Mechanical (hoe, weed whip)	6.1	7.6	2.5	3.1

^z Rating scores of 1 to 9, with 1 = no weed control and 9 = total weed control.

^y Prairie hay was applied as segments from bales, approximately three inches thick.

^x Wood chips were applied to a depth of approximately four inches.

Note: no apparent differences in yield or fruit quality to date.

Publications:

Read, P.E. and S. Gu. 2003. A century of American viticulture. HortScience 38:943-9051.

Gu, S. and P.E. Read. 2003 Rootstocks and mounding affect growth and cold hardiness of young 'Gewurztraminer' (*Vitis vinifera*) vines. HortScience 38:796.

Gu., S. and P.E. Read. 2003. Bud dormancy of *Vitis* sp. 'Lacrosse' and 'Chambourcin': effects of abscisic acid, gibberellins and rootstock. HortScience 38:779.

Gu., S. and P.E. Read. 2003. Observations on bud meristems and starch granules of dormant *Vitis* sp. 'Lacrosse' and Own-rooted/grafted 'Chambourcin' vines.

HortScience 38:795.

Walker, R.B., P.E. Read and D.H. Blackmore. 2000. Rootstock and salinity effects on rates of berry maturation, ion accumulation and colour development Shiraz grapes. Austral. J. Grape and Wine Research 6:227-239.

Gu, S. and P.E. Read. 2002. Investigations on lateral buds and starch granules of dormant *Vitis* vines by scanning electron microscopy. XXVIth Intl Hort. Cong. Toronto, Canada, p170 (abstract).

Gu, S. P.E. Read. 2002. The influence of plant growth regulators included in the forcing solution on bud break of dormant grapevines (*Vitis* spp.), XXVIth Intl. Hort. Cong. Toronto, Canada, p174 (abstract).

Bigger, B.B. and P.E. Read. 2002. Tissue culture improves the propagation of Norton Grapevine (*Vitis aestivalis*). XXVIth Intl. Hort. Cong., Toronto, Canada, p172. (abstract).

Cooperative Projects with other NCR Programs:

Evaluation of new cultivars and selections from grape breeding programs at Cornell University (Bruce Reisch) and the University of Minnesota (Peter Hemstad and James Luby). Numbered selections and new cultivars from a private breeder (Elmer Swenson), Osceola, WI) are also being tested in our research vineyards.