

**Progress report:  
Evaluation of rootstocks for Concord and Niagara grapes in  
the Lake Erie production region.**

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The rootstock trial was planted in 2001 and is well established. There are two vineyard locations, both near the Vineyard Laboratory in Fredonia, New York. Both sites are with private grower cooperators. One site is a well-drained, gravelly soil, while the other is heavier and less well-drained. The sites were selected to reflect vineyard soil types prevalent in the Lake Erie production region.

2005 saw greater production compared to 2004 as the vines matured and recovered from winter injury. Severe weather in the winter of 2002-2003 inflicted heavy damage on the vines in this trial. The result was that the trial effectively was set back one year; our initial expectation was that the vines would be at full fruiting in 2004.

Preliminary findings from the 2005 year are given below. For each characteristic measured, the mean observation and number of vines from which the mean observation was determined (count) are shown. Mean observations and counts are given for each rootstock at each location. In some cases, the number of vines for a given observation is relatively low due to the reestablishment of vines following the severe 2002-2003 winter. Crop weight refers to the mass of the crop in kilograms. Berry weight refers to the mass of one hundred berries, in grams. Juice soluble solids (JSS) is given in degrees Brix. Pruning weights are from the 2004-2005 growing year and were collected in early 2005.

Statistical comparisons would be premature in the second year of data collection. However, there are trends emerging. The sites appear to differ from one another in the performance of control vines (own rooted Concord and Niagara), as would be expected based on the difference in soil type and drainage. Winter survival of grafted vines, particularly following severe winters, has been lower than own rooted vines (although mounding has not been conducted in this trial).

Certain rootstocks at either site appear to increase or decrease the crop weight per vine. Selectively, rootstocks that increased both the mean pruning weight and mean crop weight of Concord this year relative to own-rooted vines at a given vineyard location were 3309C and SO4. Rootstocks that increased mean crop weight (but not necessarily mean pruning weight) of Concord relative to own-rooted vines at a given vineyard location were 101-14 Mgt, 3309C, 110R, SO4, 420A, and Gravesac. Rootstocks that increased both the mean pruning weight and mean crop weight of Niagara this year relative to own-rooted vines at a given vineyard location were 101-14 Mgt, 3309C, 110R, and 420A. Note the rootstocks common to these lists and also those not specifically included in either. In this early observation 44-53 M and Riparia Gloire in particular do not appear to be increasing crop weight for either Concord or Niagara.

Multiple years will be needed for adequate vineyard evaluation of these rootstocks grafted to Concord and Niagara.

**Concord trial**

<b>Rootstock 1 = Concord own rooted</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
Rak	2.4	46.1	85.0	14.1	76.5	191.9	19.4	mean
	57	57	56	55	19	19	19	count
Vercant	2.5	48.7	84.7	9.8	67.0	160.1	19.0	mean
	74	73	70	70	28	28	28	count
<b>Rootstock 2 = 101-14 Mgt</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
Rak	2.3	49.3	99.4	16.8	71.5	179.0	20.1	mean
	26	24	24	24	15	15	15	count
Vercant	0.9	15.2	45.0	6.4	77.0	184.2	21.3	mean
	13	25	3	3.0	2	2	2	count
<b>Rootstock 3 = 3309C</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
Rak	2.5	48.8	94.5	18.2	71.7	198.5	19.3	mean
	30	30	30	30	20	20	20	count
Vercant	1.1	21.8	43.5	6.5	57.7	141.2	20.0	mean
	24	35	12	12	7	7	7	count
<b>Rootstock 4 = 110R</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
Rak	1.8	39.0	85.7	14.5	63.4	179.6	20.2	mean
	22	22	20	20	11	11	11	count
Vercant	0.8	19.3	45.4	6.2	55.5	133.2	21.4	mean
	14	20	9	9	6	6	6	count
<b>Rootstock 5 = SO4</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
Rak	2.5	49.9	99.5	17.9	69.7	180.5	19.6	mean
	15	15	15	15	13	13	13	count
Vercant	1.8	28.0	64.2	8.1	61.4	141.6	20.1	mean
	15	27	12	12	7	7	7	count

**Concord trial, continued**

	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
<b>Rootstock 6 = 420A</b>								
Rak	2.3	45.9	97.4	16.8	73.4	190.0	20.0	mean
	22	22	22	22	14	14	14	count
Vercant	1.3	26.2	54.1	7.1	64.0	148.5	20.6	mean
	12	12	10	10	6	6	6	count

	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
<b>Rootstock 7 = 44-53 M</b>								
Rak	1.5	32.5	68.1	11.6	65.8	179.0	19.8	mean
	28	27	27	27	17	17	17	count
Vercant	1.2	19.2	60.3	7.4	83.8	192.5	20.0	mean
	13	26	10	10	5	5	5	count

	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
<b>Rootstock 8 = Riparia Gloire</b>								
Rak	1.7	34.8	73.5	12.8	63.1	171.6	20.1	mean
	21	20	19	19	14	14	14	count
Vercant	0.9	18.4	62.4	8.2	79.0	175.4	19.2	mean
	18	28	10	10	5	5	5	count

	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
<b>Rootstock 9 = Gravesac</b>								
Rak	2.0	43.0	87.7	17.3	74.0	192.8	20.9	mean
	22	20	20	20	13	13	13	count
Vercant	0.8	18.4	21.7	3.3	43.5	104.9	19.6	mean
	11	19	3	3	2	2	2	count

**Niagara trial**

<b>Rootstock 1 = Niagara own-rooted</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>		
Rak	2.5	43.3	38.0	8.4	44.9	129.5	18.5	mean	
	56	56	19	19	9	9	9	count	
Vercant	1.4	30.0	30.3	6.3	58.2	151.0	19.6	mean	
	73	73	51	51	18	18	18	count	
<b>Rootstock 2 = 101-14 Mgt</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>		
Rak	2.8	43.7	46.5	9.9	68.0	174.6	19.3	mean	
	22	21	8	8	5	5	5	count	
Vercant	0.9	22.7	13.5	2.6	31.7	92.7	21.4	mean	
	22	18	8	8	3	3	3	count	
<b>Rootstock 3 = 3309C</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>		
Rak	3.3	53.0	46.7	9.3	37.5	104.1	19.4	mean	
	26	26	11	11	6	6	6	count	
Vercant	1.1	27.0	32.4	7.3	55.1	148.5	19.3	mean	
	36	32	21	21	9	9	9	count	
<b>Rootstock 4= 110R</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>		
Rak	3.2	52.9	37.0	8.8	55.8	148.1	18.0	mean	
	29	28	15	15	8	8	8	count	
Vercant	1.0	25.3	32.2	7.0	49.4	134.5	20.1	mean	
	35	31	19	19.0	10	10	10	count	
<b>Rootstock 5 = SO4</b>	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>		
Rak	3.8	55.6	42.4	7.2	57.5	136.2	17.7	mean	
	23	22	11	11	6	6	6	count	
Vercant	0.9	25.3	19.9	3.9	41.6	102.1	19.4	mean	
	24	21	15	15	7	7	7	count	

**Niagara trial, continued**

	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
<b>Rootstock 6 = 420A</b>								
Rak	2.6	41.2	51.2	9.6	54.3	149.5	18.2	mean
	29	29	18	18	11	11	11	count
Vercant	0.7	21.3	26.5	4.7	50.8	130.1	20.6	mean
	25	23	17	17	8	8	8	count

	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
<b>Rootstock 7 = 44-53M</b>								
Rak	2.6	53.3						mean
	16	16	0	0	0	0	0	count
Vercant	1.2	26.7	20.2	5.1	31.0	85.9	20.0	mean
	11	11	6	6	3	3	3	count

	<b>2005 Pr. Wt.</b>	<b>Nodes</b>	<b>Cluster No.</b>	<b>Crop Weight</b>	<b>Berry No.</b>	<b>Berry Wt.</b>	<b>JSS</b>	
<b>Rootstock 8 = Riparia Gloire</b>								
Rak	2.9	50.9	27.1	6.8	37.4	100.1	20.9	mean
	19	18	7	7	5	5	5	count
Vercant	1.0	25.3	29.0	4.7	41.3	103.9	19.1	mean
	21	19	12	12	6	6	6	count