

Eastern European Grape Cultivars

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Introduction

Selecting cultivars most suited for a location that perform consistently and reliably and meet market needs is a one of the determining factors during vineyard establishment. Early, mid, and late ripening cultivars are available to extend or concentrate the harvest season to match a specific market. Although cultivar performance and fruit composition information is very useful, obtaining this information is time-consuming and expensive, due to the time required for vines to come into production and the large number of cultivars available.

There are four types of grapes grown in the United States for wine: Muscadine (*Vitis rotundifolia*), American (*Vitis labruscana* L.), European (*Vitis vinifera*), and American-French hybrids (most are *V. riparia* crosses). Muscadine grapes are not adapted to Kentucky's climate. Growers in western Kentucky have grown Muscadine grapes, but this is considered the most northern limit of its climate adaptation, and therefore is not recommended for commercial planting. American grapes grow well and are well adapted, but wine quality is considered substandard. European grapes, with their best wine quality, can survive Kentucky weather only with constant care and attention to vine management. Many American-French hybrids grow well, and fruit quality for wine is intermediate between their American and French parents.

European grapes are not well suited for the continental climate of northern Europe. Still, grapes are grown as far north as Russia. Plants are protected from winter injury by laying the dormant plants down in the fall and covering with soil or mulch, a very labor-intensive operation. To improve wine quality and to obtain better adapted cultivars crosses between *V. vinifera* and other *Vitis* species have been made, including some from China. The resulting cultivars have shown improved hardiness as well as desirable fruit composition values in eastern Europe. The late Dr. Bob Goodman of the University of Missouri evaluated these cultivars in Eastern Europe and selected several, based on winter hardiness, disease resistance, and fruit quality. These selections were brought to the U.S. and grown in Missouri under post-entry quarantine. In 1998, the first of these selections were distributed to selected land-grant institutions in the U.S., including the University of Kentucky. Additional selections were released from post-entry quarantine and planted in 2001. This project is being conducted in cooperation with the Missouri State University Fruit Experiment Station at Mountain Grove, Missouri.

Annual production and wine evaluations have been published previously in the Fruit and Vegetable Crops Research Reports from 2001, and 2003 to 2006 (PR-452, PR-488, PR-504, PR-521, and PR-538). This HortFact sheet offers a brief description of these cultivars and presents data from 2001 to 2005 for the cultivar evaluation trial planted in 1998, and data from 2003 to 2006 for the trial planted in 2001 at the University of Kentucky Research and Education Center (UKREC) in Princeton, KY. Additionally, phenology data, or early growth developmental stages, was collected in 2006 and 2007 for the trial planted in 2001.

Presently, Bianca is the only cultivar commercially available for sale to the public.

A series of devastating freezes from April 5 through April 10, 2007 affected Kentucky fruit crops as well as crops extending from Michigan to Alabama. Many of these freezes were advective, where a cold polar air mass moves into an area with lots of wind. The result was devastating losses confined not just to fruit, but also to wheat, forage, corn, and nursery crops. The Eastern European grape cultivars also sustained damage due to winter injury and were visually rated for winter injury using a scale of 1-5, with 1 equal to no injury observed, and 5 equal to severe injury, with plant death to soil surface. Vines were rated May 21, 2007, and the results are presented in Table 4, and Figure 1.

Table 1. Yield and fruit composition of Eastern European grape cultivars planted in 1998 at UKREC for the 2001-2005 harvest seasons.

Cultivar	Date of Harvest	Percent of Vines Surviving after 5 years	Yield (lbs/vine)	Yield ^Y (ton/A)	Cluster Weight (oz)	% Total Soluble Solids	Juice pH
34-4-49	Aug 7 - Sept 29	93	13.2	3.0	11.9	18.7	3.2
Bianca	Aug 1 - Aug 18	100	18.5	4.3	5.2	19.1	3.3
I 31/67 ^Z	Jul 28 - Aug 14	80	8.4	1.9	11.8	17.6	3.4
Iskorka	Jul 27 - Aug 14	93	10.1	2.3	8.9	20.1	3.3
Kozma 525	Aug 20 - Sept 21	93	14.5	3.3	13.3	18.6	3.4
Kozma csvt 55	Aug 18 - Sept 5	87	9.7	2.2	7.7	19.7	3.3
Laurot	Aug 21 - Sept 14	80	14.1	3.2	8.6	18.9	3.2
Liza ^Z	Aug 14 - Sept 9	73	14.1	3.2	8.1	20.4	3.2
M39-9/74 ^Z	Aug 12 - Sept 12	93	10.1	2.3	12.6	17.7	3.2
Malverina	Aug 6 - Sept 8	73	27.8	6.4	14.1	18.6	3.3
Petra ^Z	Aug 3 - Aug 17	87	4.8	1.1	6.6	19.3	3.3
Rani Rizling ^Z	Aug 7 - Sept 5	93	10.6	2.4	11.1	19.7	3.3
Rubin Tairovskii	Aug 3 - Sept 20	100	26.9	6.2	13.9	20.4	3.3
Toldi	Aug 12 - Sept 7	93	29.5	6.8	14.1	17.9	3.3
XIV-1-86	Aug 7 - Aug 18	87	18.5	4.3	10.1	17.5	3.3
XIV-11-57	Aug 3 - Sept 21	93	19.8	4.6	8.4	16.9	3.3
XX-15-51	Jul 27 - Aug 18	100	14.1	3.2	7.6	19.8	3.3

^Z Cultivars eliminated in 2005 due to inadequate performance or poor survivability.

^Y Yield in tons/A is based on 454 vines/acre.

Table 2. Yield and fruit composition of Eastern European cultivars planted in 2001 at UKREC for the 2003-2006 harvest seasons.

Cultivar	Date of Harvest	Percent of Vines Surviving after 5 years	Yield (lbs/vine)	Yield ^Z (ton/A)	Cluster Weight (oz)	% Total Soluble Solids	Juice pH
Brumariu	Aug 21 - Sept 12	75	14.1	2.4	7.3	21.3	3.4
Demetra	Aug 21 - Aug 30	50	9.4	1.6	3.5	19.9	3.3
Golubok	Jul 27 - Aug 7	83	1.8	0.3	4.2	17.9	3.4
I 55/8	Jul 28 - Aug 30	92	5.3	0.9	5.7	18.9	3.3
II 70/21	Aug 20 - Sept 6	92	15.9	2.7	9.1	19.0	3.3
IR 26/5	Aug 31 - Sept 28	75	11.2	1.9	4.6	19.9	3.3
L4-9-18	Aug 13 - Sept 28	92	5.3	0.9	6.2	18.2	3.1
Nero	Jul 27 - Aug 21	67	2.4	0.4	5.0	19.6	3.3
Plai	Aug 21 - Aug 29	67	5.9	1.0	6.4	20.4	3.6

^Z Yield in ton/A is based on 340 vines/A

Table 3. Phenology of Eastern European cultivars planted in 2001 at UKREC.

Cultivar	Date of 50 % Bud Break		Date of 80% Bud Break		Date of 50% Bloom	Date of 80% Bloom
	2006	2007	2006	2007	2006	
Brumariu	Apr 5	Mar 29	Apr 8	Mar 31	May 17	May 19
Demetra	Apr 7	Mar 29	Apr 11	Mar 31	May 17	May 19
Golubok	Apr 3	Mar 23	Apr 5	Mar 27	May 8	May 12
I 55/8	Apr 5	Mar 27	Apr 8	Mar 31	May 17	May 19
II 70/21	Apr 5	Mar 29	Apr 13	Mar 31	May 19	May 22
IR 26/5	Apr 5	Mar 27	Apr 8	Mar 29	May 17	May 19
L4-9-18	Apr 5	Mar 23	Apr 8	Mar 27	May 17	May 19
Nero	Apr 3	Mar 23	Apr 5	Mar 27	May 17	May 19
Plai	Apr 5	Mar 31	Apr 11	Apr 2	May 22	May 24

Table 4. Winter injury ratings of Eastern European grape cultivars evaluated at UKREC.

Injury Rating	Grape Cultivar
1	Bianca, Demetra, II 70/21, Laurot, and Plai
2	Brumariu, I 55/8, M39-9/74, Toldi, and Rubin Tairovskii
3	Golubok, IR 26/5, L4-9-18, Kozma csvt 55, Malverina, XIV-1-86, XIV-11-57
4	34-4-49, I 31/67, Iskorka, Kozma 525, Nero, and XX-15-51
5	Liza, Petra, and Rani Rizling

Figure 1. Visual representations of the winter injury ratings used.

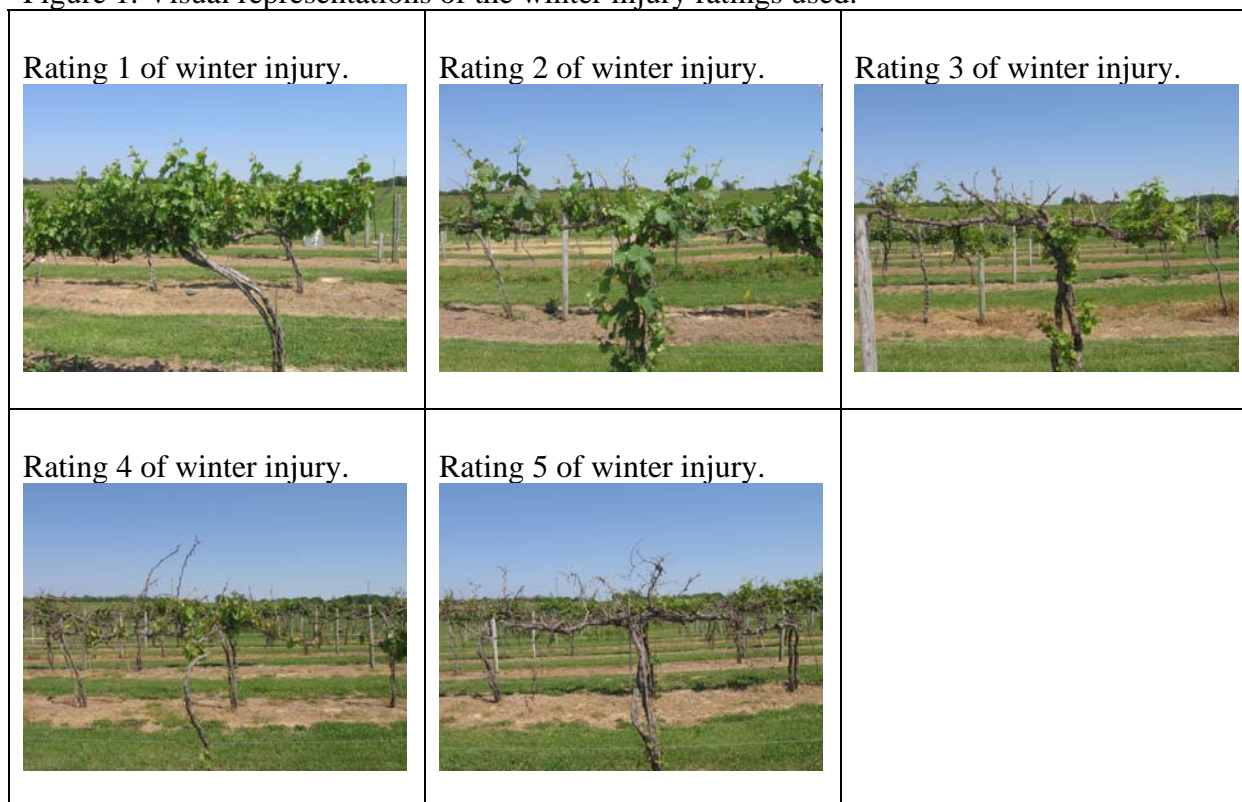


Table 5. Grape cultivar descriptions evaluated at UKREC.

Cultivar	Cultivar Description
34-4-49	A white wine grape from Ukraine, from an Ovidioploski x Red Muskat cross, it has long loose clusters, round berries with a pronounced bloom.
Bianca	A white wine grape from Hungary, from a Villard Blanc x Bouvier cross, it has loose clusters and is slightly susceptible to powdery mildew and black rot.
Brumariu	Vine has long clusters and round berries and produces white wine. Fruit hangs well. Vigor and yield are balanced. Country of origin is Romania.
Demetra	Vine produces tight elongated clusters of red grapes. Slightly susceptible to powdery mildew. Country of origin is Moldova
Golubok	A very early red grape (last of July in Western KY). The vine branches often and has lots of little clusters.
I 31/67	A red grape from Bulgaria from an unknown cross. Veraison usually stops at 50-60%, and doesn't finish until shortly before harvest.
I 55/8	A red grape with extremely tight clusters. It is moderately susceptible to black rot.
II 70/21	A red grape with large berries and large leaves that have red color in the fall.
IR 26/5	Red grape that is moderately susceptible to powdery mildew and black rot. It has very tight clusters with some bunch rot.
Iskorka	This is a white grape from Ukraine, from a 17-21-68 x Zalagyoengye x Muskat odesskii cross.
Kozma 525	A red grape originating in Hungary, S.13666 x Pearl of Csaba cross. Clusters are loose relative to Kozma 55.
Kozma csvt 55	A red grape originating in Hungary with tight clusters, S.13666 x Pearl of Csaba cross.
L4-9-18	A red grape with an interesting, almost lilac juice and wine color. It is susceptible to powdery mildew.
Laurot	A red grape originating in the Czech Republic, from a (Franconien x St. Laurent) x (Merlot x S.13666) cross.
Liza	A white grape originating in Hungary, Kunbarat x Pinot gris cross. It is has small leaves and berries, weak growth and thin shoots, and is very susceptible to powdery mildew.
M39-9/74	A red grape from Hungary, from a Media x Saperavi cross, it has large loose clusters, large oval berries that hang well on the vine, and thick canes.
Malverina	A vigorous white grape originating in the Czech Republic, from a SV12375 x Malvasia x (Merlot x S.13666) cross. Leaves have a characteristic crinkled surface.
Nero	Vines produce very large oval berries with very firm flesh. Produces a red wine. This grape originated in Hungary from a Villard Blanc x Gardonii cross.
Petra	A white grape originating in Yugoslavia, from a Kunbarat x Pinot noir cross. Clusters are small, but produce a good quality wine. It is slightly susceptible to powdery mildew and black rot, and possible Eutypa.
Plai	Vine produces tight clusters of red grapes. Leaf stippling has been observed. This grape originated in the Russian Federation.

Rani Rizling	A white grape originating in Yugoslavia from a Welschriesling x Kunbarat cross. The vine has low to moderate vigor with small tight clusters.
Rubin Tairovskii	A red grape originating in the Ukraine, from an Odesskii Ustoichivyi x Varousset cross. The vine has long loose clusters.
Toldi	This is a white grape originating in Hungary, from an Alfold 1000 x SV12375 cross. It has large flower clusters with several lobes and low percentage fruit set. Berries are large and round with firm flesh. Wood maturation is very poor, but winter survival is good.
XIV-1-86	White grape that is medium to high in vigor with very long thick unbranched canes.
XIV-11-57	A red grape originating in the Czech Republic from a Merlot x S.13666 cross.
XX-15-51	A white grape from Moldova, SV12375 x Red Malvasia cross. The vine has long clusters. The first to ripen of the 1998 selections.

Figure 2. Grape cultivars evaluated at UKREC, Princeton, KY, in order of average harvest date.

July



Golubok

August

 (Photos of Plai and II 70/21 are not available)

XX-15-51



Nero



I-31/67



Iskoroka



Bianca



Petra



XIV-1-86



Malverina



Rani Rizling



Rubin Tairovskii



Kozma csvt 55



Toldi



M39-9/74



Laurot



Liza



XIV-11-57

September

 (Photos of I 55/8, IR 26/5, and L 4-9-18 are not available)

Brumariu



Kozma 525



34-4-49



Demetra

Educational programs of Kentucky Cooperative Extension serve all people regardless of race, color, age, sex, religion, disability, or national origin.

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