UNIVERSITY OF MINNESOTA GRAPE PROJECT 1995 ANNUAL REPORT

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Weather

The Winter of 1994-95 was relatively mild in Minnesota and damage to the grapevines at the University's Horticultural Research Center (HRC) was minimal. (The low temp for the winter was -15° F on January 4.) The 1995 growing season was characterized by a cool spring followed by a warm, wet summer. Vines broke bud much later than normal, but to some extent 'caught up' by harvest time. Degree day accumulation for the year totaled 2663 (base 50° F). This was slightly above our average of aproximately 2500 degree days. Abundant rainfall in August led to substantial late-season downy mildew on susceptible cultivars.

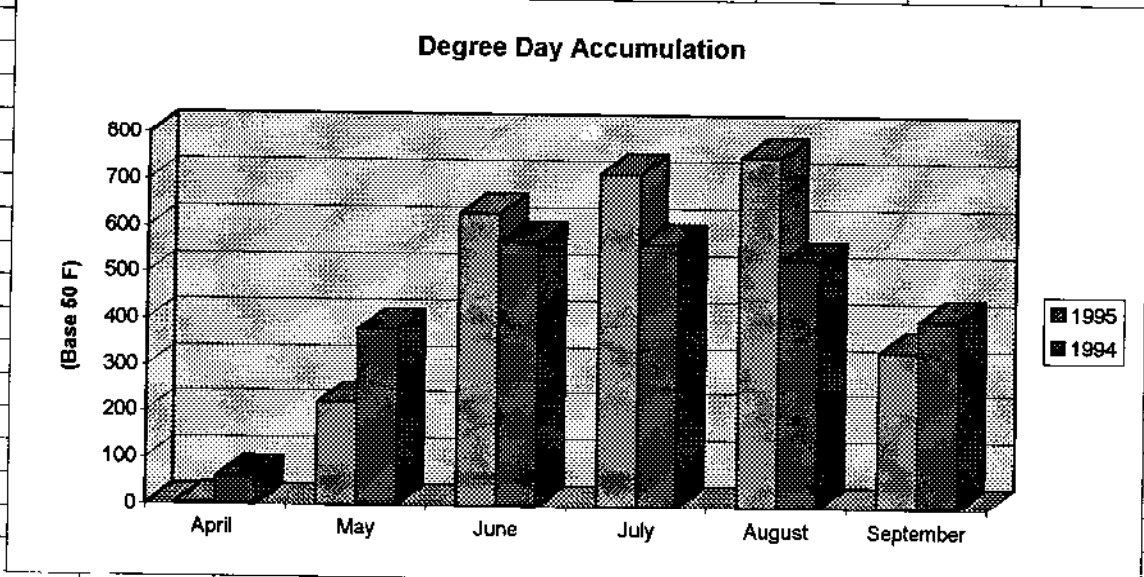
Degree Day Accumulation (Base 50°F)

	April	May	June	July	Aug	Sept	Total
	4.5	220	630.5	716.5	752.5	339	2663
1994	60.5	379.5	571	567.5	531.5	406	2516
Difference	-56	-179.5	+59.5	+149	+221	-67	+147

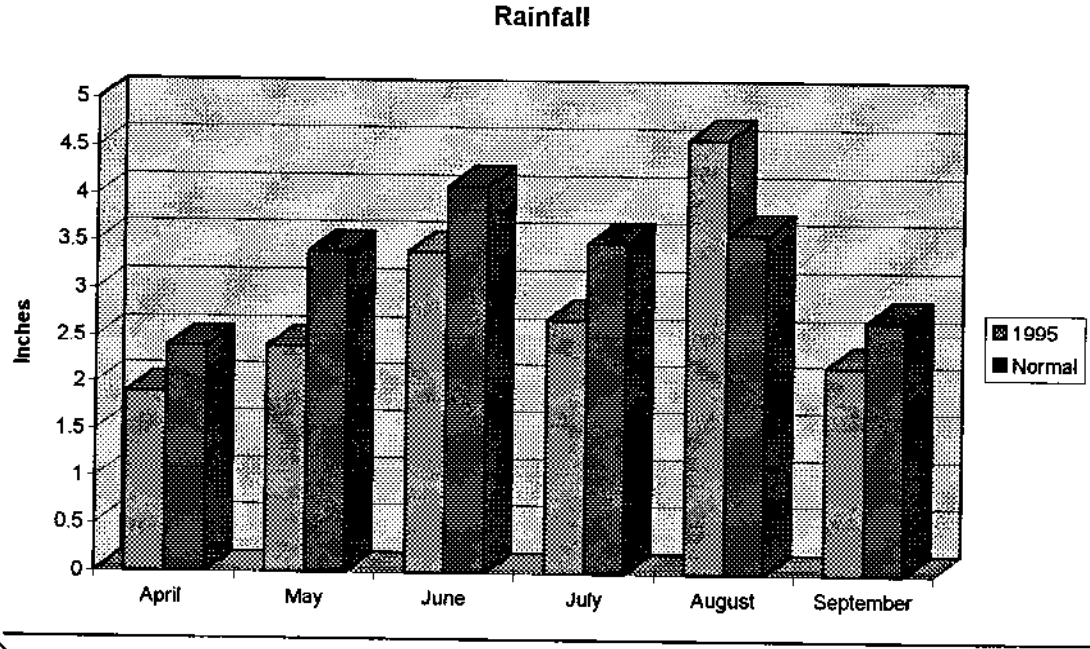
See Degree Day Accumulation and Rainfall graphs next page

Degree Day Accumulation and Rainfall Graphs

1994	60.5	379.5	571	567.5	531.5	406		



	April	May	June	July	August	September
1995	1.9	2.4	3.4	2.7	4.6	2.2
Normal	2.4	3.4	4.1	3.5	3.6	2.7



Grape Crosses
University of Minnesota
Horticultural Research Center

Crosses

The crosses made in 1995 are shown in table [MGGA1.xls]. A total of 14 crosses were designed for red wine, 14 for white wine, 9 for table grapes, 3 for juice and jelly, and 4 were intended for ornamental vines. (There is, of course, some overlap between the various categories.) The 44 crosses yielded a total of 4621 seeds. The red wine crosses were primarily intercrosses of U of M selections, while in the white wine category Vignoles, Chardonnay, Viognier and Meynieu 6 were used in an effort to incorporate additional genes for high quality characteristics into our breeding lines.

Most of the table grape crosses were geared towards the development of high quality, large berried, seeded table grapes. Three crosses involved Swenson Red. Developing improved forms of Swenson Red with greater cold hardiness and disease resistance is one of the principal goals of our table grape research.

Minnesota juice and jelly production has generated renewed interest in recent years. There appears to be economic potential for locally grown, high quality (and preferrably organic) juices and jellies. This is particularily true for products that are obviously distinct (because of their color or flavor) from those derived from the traditional Concord.

Our juice breeding efforts in 1995 consisted of three crosses, each involving MN 1021, a relatively old selection from the cross V.riparia 89 X Alden. MN 1021 makes a good juice and an excellent jelly in its own right, but is a bit too late ripening under our conditions. It has a slight muscat flavor, which is one of our primary objectives in this type of grape.

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Crosses made in 1995 are shown in
table [MGGA1.xls] next page.

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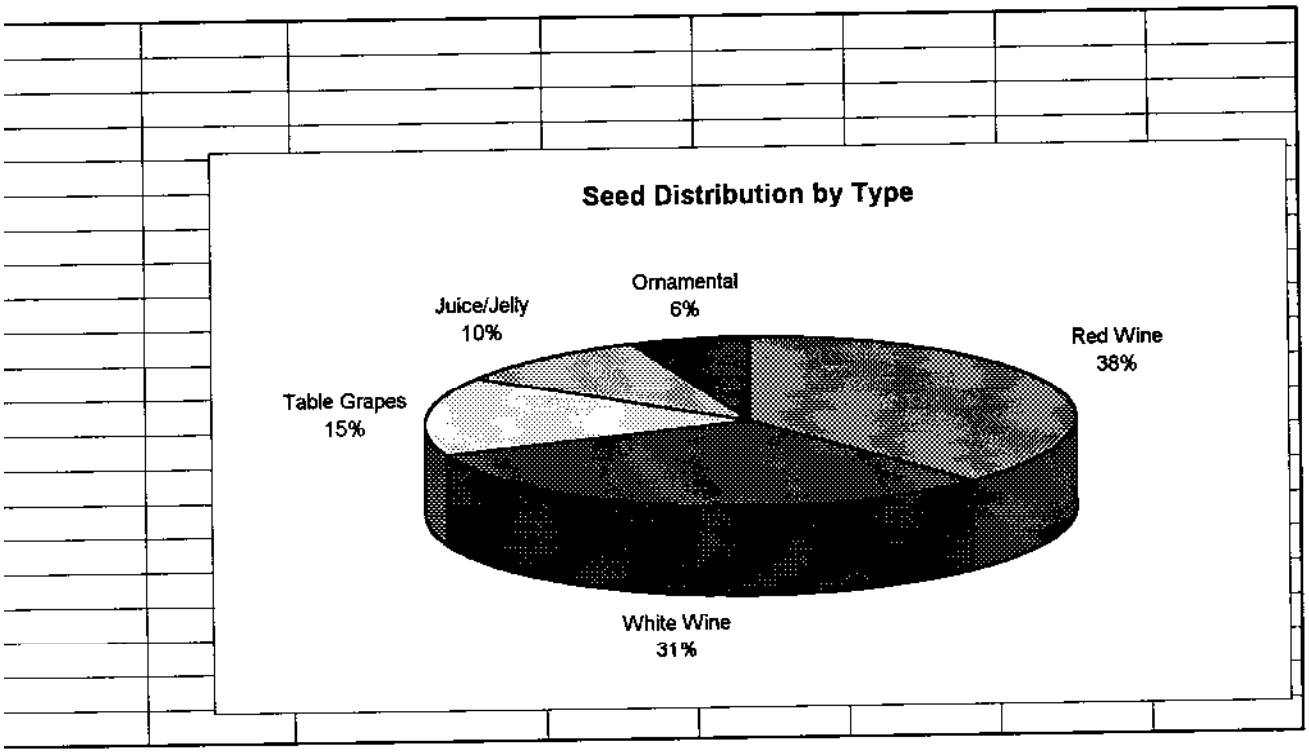
U of M 1995 HRC GRAPE CROSSES				
Cross#	Female Parent	Male Parent	Seed #	Vine #
RED WINE:				
GE 9501	Cabernet Sauvignon	MN 1094 (1019 X 1016)	54	4
GE 9502	MN 1178 (1059 X L4511)	Gamay Beaujolais	177	59
GE 9503	MN 1045 (Rip 89 X Carmine)	MN 1094	116	81
GE 9504	MN 1047 (Rip 89 X L4511)	MN 1180 (1045 X 1070)	18	7
GE 9505	MN 1180	MN 1047	174	116
GE 9506	MN 1047	MN 1060 (RIp 89 X L4511)	191	39
GE 9507	Regent	MN 1072 (Rip 89 X SV 18-307)	45	37
GE 9508	St. Croix	MN 1047	129	101
GE 9509	MN 1072	MN 1180	133	92
GE 9510	MN 1095	Cabernet Sauvignon	52	24
GE 9511	MN 1045	MN 1027 (Mandan X L4511)	260	67
GE 9512	MN 1045	MN 1060	191	65
GE 9513	MN 1045	MN 1070 (Rip 37 X Limberger)	213	62
GE 9514	MN1047	MN 1047	250	43
		Total:	1753	797
WHITE WINE:				
GE 9515	Vignoles	Siegerrebe	1	
GE 9516	Vignoles	MN 1166 (St. Pepin X ES 6-8-25)	162	64
GE 9517	Vignoles	MN 1112 (1051 X Veeblanc)	98	44
GE 9518	MN 1112	Vignoles	286	75
GE 9519	Viognier	MN 1112	29	13
GE 9520	MN 1112	MN 1183 (1047 X 1022)	154	84
GE 9521	MN 1163	MN 1112	48	14
GE 9522	Chard.	MN 1182 (Rip 74 X Breidecker)	27	21
GE 9523	Chard.	MN 1086 (1019 X Kay Gray)	12	8
GE 9524	MN 1095 (Rip 39 X Veeblanc)	Chard.	147	83
GE 9525	Meynieu 6	MN 1166	75	61
GE 9526	Meynieu 6	MN 1185 (GM 6495-3 X 1110)	81	62
GE 9527	MN 1047 Gris	MN 1166	74	48
GE 9528	MN 1166	MN 1112	248	74
		Total:	1442	651
TABLE GRAPES:				
GE 9529	Alden	MN 1181 (Edelweiss X Valiant)	42	29
GE 9530	ES 414	MN 1181	117	75
GE 9531	Steuben	Worden	18	10
GE 9532	Swenson Red	MN 1179 (St Pepin X Reliance)	50	34
GE 9533	Kyoho	Valiant	14	8
GE 9534	ES 414	MN 1160	110	58
GE 9535	Swenson Red	MN 1006 (Mandan X SV 12-375)	178	83
GE 9536	MN 1104 (Swen Red X Mars)	MN 1022 (Kay Gray X La Crosse)	59	22

95MGGA1.XLS

TABLE GRAPES (Cont'd):				
GE 9537	Swenson Red	MN 1114 (Suelter X Mars)	100	10
		Total:	688	329
JUICE/JELLY:				
GE 9538	MN 1047	MN 1021	110	79
GE 9539	MN 1022	MN 1021 (Rip 89 X Alden)	39	23
GE 9544	MN 1021	King of the North	305	16
		Total:	454	218
ORNAMENTALS:				
GE 9540	MN 1184	V. amurensis # 2	181	43
GE 9541	MN 1184	(Rip 89 x Chasselas Ciotat)	89	40
GE 9542	Red Tip blk. 3	V. amurensis	2	
GE 9543	Red Tip blk 3	(Rip 89 x Chasselas Ciotat)	2	
		Total:	274	83
		Overall total:	**4611**	**2078**

95MGGA1.XLS


Seed Distribution by Type
Ornamental
6%
Juice/Jelly
10%
Red Wine
38%
Table Grapes
15%
White Wine
31%

New Selections

The following vines were designated as new selections in 1995. Due to the mild winter, most of these vines were selected based on their quality and disease resistance rather than their cold hardiness (which was difficult to determine).

■ MN 1188 (DMP 3-25 X Aris)
This is a high quality white wine type whose flavor resembles that of its Riesling grandparent. The berries and clusters are small and the fruit is early ripening. It was selected on 8/21/95. The foliage was quite clean in '95 with only very slight downy mildew. Wood ripening was excellent. On 9/5 the fruit was at 23.5 brix.

■ MN 1189 (Beta X Phoenix)
This selection is the result of an unusual cross between the cold hardy but low quality Beta and the German white wine variety Phoenix. MN 1189 has medium size black fruit with light pink juice and a muscat flavor. The flavor is such that this vine may have some potential as a muscat juice grape, especially in light of its good disease resistance. The wood ripening is slower than average and this may indicate potential winter hardiness problems.

■ MN 1190 (MN 1125 [St. Croix X Chancellor] X Frontenac)
MN 1190 is an impressive red wine selection with large compact clusters. The sugar at harvest was 21 brix and the acid was a workable 1.05% . Unfortunately, poor wood ripening led to extensive winter injury in the winter of 1995-96.

■ MN 1191 (Aris X DMP 3-25)
A sister of MN 1188, MN 1191 appears to be later ripening but more productive. The foliage had only slight downy mildew and the flavor of the berries resembled Aris. Like 1188, the vine of 1191 is quite small. The sugar at harvest was 24.2% and the acidity came in at .99%.

■ MN 1192 (MN 1069 X Seyval)
This productive selection had very good wood ripening, but was held back by moderate to severe downy mildew.

■ MN 1193 (Regent X Frontenac)
MN 1193 is an early black wine selection that was 'dead ripe' on 9/5/95. The flavor was very mild and the sugar was 21.5%. The foliage was quite clean (slight downy mildew) but winter hardiness may be questionable in our area.

New Selections (continued)
University of Minnesota
Horticultural Research Center

■ MN 1194 (ES 5-14 X ES 6-5-33)
MN 1194 is a nice white table grape with a slight muscat flavor. The clusters were medium sized and quite attractive in '95. The skin is a little thick and winter hardiness remains uncertain. Disease resistance was good for '95.

■ MN 1195 (Siegfried X 1006)
This vine has an outstanding growth habit; vigorous, yet easy to manage, with a minimum of tendrils. The large compact clusters have red fruit appropriate for a white wine. Unfortunately, the acidity was a bit high, coming in at 1.26%. Also, the flavor may be a bit unusual.

■ MN 1196 (St. Pepin X ES 6-6-11)
A beautiful pink/red table grape with a large berry and a very mild pleasant flavor. The vine appears to be very small and this selection may require grafting in order to achieve sufficient production.

■ MN 1197 (MN 1022 X Frontenac)
Along with its sisters MN 1183 and MN 1106, MN 1197 makes the third white wine selection from this cross. It has a mild flavor and the fruit composition figures were very good in '95: 24.2 brix, 3.17 pH, and 0.83% acid. Further testing will be needed to determine which of these three selections has the most promise in the long run.

Performance of Existing Selections

The performance of our existing selections in terms of crop load, winter injury, disease resistance, etc. is shown in table [MGGA3.xls] on the following page. One word of caution: the disease data were taken in late July before extensive disease pressure developed. Therefore, some of the vines listed as having no downy mildew eventually developed some by the end of the season.

The best performers overall (in terms of their vine, not their fruit) included:

MN 1022 (Kay Gray X La Crosse),
MN 1037 (Riparia 37 X S.V. 18-283),
MN 1050 (Riparia 37 X S.V. 18-283),
MN 1066 (Riparia 37 X S.V. 18-283),
MN 1095 (Riparia 37 X Veeblanc),
MN 1110 (MN 1051 X Frontenac),
MN 1112 (MN 1051 X Veeblanc),
MN 1114 (Suelter X Mars),
MN 1161 (Riparia 89 X Seyval), and
MN 1178 (MN 1059 X L. 4511).

MN. SELECTION DATA 1995		(Data taken 7/26/95)								
Name	Cluster Size	Berry Size	Crop Load	Winter Injury	Downy Mildew	Black Rot	2, 4 - D	Phylox .	Vigor	Overall
MN. 1016	straggly, sml.	sml.- med.	light.	sl.	lvs. = v.sl. frt. = n	lvs. = sl. frt. = n	v.sl.	none	mod.	poor - fair
MN. 1019	loose, sml.- med.	sml.	mod.	none	lvs. = mod. frt. = mod-sev	none	v.sl.	none	mod.- hgh.	poor
MN. 1021	well filled, med.	sml.- med.	heavy	none	lvs. = v.sl. frt. = n	lvs. = sl. frt. = v.sl.	v.sl.	sl.	low - mod.	good
MN. 1022	well filled, med.	med.	heavy	v.sl.	none	lvs. = sl. frt. = n	v.sl.	v.sl.	mod.	gd.- v.gd.
MN. 1023	well filled, med.- lge.	sml.	mod.	none	none	lvs. = v.sl. frt. = n	v.sl.	sl.	low	fair - gd.
MN. 1027	loose, v.sml.	med.	light.	none	none	lvs. = v.sl. frt. = n	v.sl.	sl.	mod.	poor - fair
MN. 1032	loose, sml.- med.	sml.- med.	light.- mod.	none	lvs. = v.sl. frt. = n	lvs. = v.sl. frt. = n	none	v.sl.	high	fair - gd.
MN. 1037	loose, med.- lge.	sml.- med.	heavy	none	none	lvs. = sl. frt. = n	sl.	sl.	excess.	v. gd.
MN. 1038	well filled, med.- lge.	sml.	light.- mod.	v.sl.	none	lvs. = sl. frt. = n	sl.	sl.	low - mod.	fair
MN. 1041	well filled, sml.- med.	med.	light.- mod.	sl.	none	lvs. = sl. frt. = v.sl.	v.sl.	none	mod.	fair - gd.
MN. 1044	loose, sml.	med.	light.	mod.	lvs. = v.sl. frt. = n	lvs. = v.sl. frt. = n	v.sl.	none	mod.	poor - fair
MN. 1045	loose, med.	sml.	mod.- hvy.	none	none	lvs. = sl. frt. = v.sl.	v.sl.	v.sl.	high	good
MN. 1047	loose, med.	sml.- med.	mod.	none	none	lvs. = sl. frt. = v.sl.	v.sl.	none	mod.	gd - v.gd.
MN. 1050	loose, med.- lge.	sml.	heavy	none	lvs. = v.sl. frt. = n	lvs. = v.sl. frt. = n	sl.	none	hgh.- excess.	gd.- v.gd.
MN. 1057	loose, med.	sml.	mod.- hvy.	none	lvs. = n frt. = sl.	lvs. = v.sl. frt. = n	sl.	sl.	excess.	good
MN. 1059	loose, sml.	sml.	light.	none	none	none	v.sl.	none	excess.	fair
MN. 1060	loose, med.	sml.- med.	light.- mod.	sl.- mod.	none	lvs. = sl. frt. = v.sl.	v.sl.	v.sl.	low - mod.	fair
MN. 1064	well f.- compact, med.	sml.	mod.- hvy.	none	none	lvs. = v.sl. frt. = n	v.sl.	none	hgh.- excess.	good
MN. 1066	well filled, med.	sml.	mod.- hvy.	none	none	lvs. = v.sl. frt. = n	sl.	none	excess.	v. gd.
MN. 1069	well filled, med.	sml.	mod.	none	none	lvs. = v.sl. frt. = sl.	v.sl.	v.sl.	high	good
MN. 1070	loose, med.- lge.	sml.	mod.- hvy.	none	none	lvs. = sl. frt. = sl.	sl.	sl.	mod.- hgh.	good
MN. 1072	loose, sml.- med.	sml.	mod.	none	lvs. = mod. frt. = mod.	lvs. = sl. frt. = n	v.sl.	sl.	mod.	poor
MN. 1073	well filled, med.	sml.- med.	mod.- hvy.	none	lvs. = n frt. = sl.- mod.	lvs. = v.sl. frt. = v.sl	v.sl.	sl.	mod.	fair - gd.
MN. 1074	well filled, sml.- med.	sml.- med.	v.light.	mod.- sev.	none	lvs. = v.sl. frt. = n	v.sl.	none	low	poor
MN. 1075	well filled, sml.- med.	sml.	light.	v.sl.	none	lvs. = sl. frt. = n	sl.	sl.	low - mod.	poor
MN. 1076	loose, med.	sml.	light.	none	none	lvs. = v.sl. frt. = n	v.sl.	none	hgh.- excess.	fair - gd.
MN. 1078	loose, sml.- med.	sml.- med.	light.- mod.	none	none	lvs. = sl. frt. = n	sl.- mod.	v.sl.	low - mod.	poor - fair
MN. 1081	lse.- well filled, med.	sml.	mod.- hvy.	none	none	lvs. = v.sl. frt. = n	none	sl.	high	good
MN. 1082	loose, med.	sml.- med.	mod.	none	none	lvs. = sl. frt. = n	v.sl.	mod.	mod.	fair - gd.
MN. 1083	loose, sml.- med.	sml.	light.	none	lvs. = v.sl. frt. = v.sl.	lvs. = sl. frt. = n	sl.	sl.	mod.	poor - fair
MN. 1090	v.lse - stgly, sml.- med.	sml.	light.	none	none	none	none	v.sl.	excess.	fair - gd.
MN. 1091	loose, med.	sml.	light.- mod.	v.sl.	lvs. = v.sl. frt. = sl.	lvs. = sl. frt. = v.sl.	v.sl.	sl.	mod.	fair - gd.
MN. 1092	lse.- well filled, med.	sml.	mod.- hvy.	none	none	lvs. = v.sl. frt. = n	sl.- mod.	sl.	high	good
MN. 1094	straggly, sml.	sml.	mod.	none	none	none	none	none	excess.	fair - gd.
MN. 1095	well filled, med.	med.	mod.	none	none	none	none	none	v.excess.	v. gd.
MN. 1096B	loose, med.	sml.	light.- mod.	v.sl.	none	none	sl.	sl.	low	poor - fair
MN. 1106	well filled, sml.- med.	sml.	light.- mod.	sl.	none	lvs. = sl. frt. = sl.	v.sl.	none	mod.- hgh.	fair
MN. 1108	compact , med.	sml.- med.	mod.	sl.	none	none	none	none	high	good
MN. 1109	loose, sml.	sml.	v.light.	mod.- sev.	lvs. = v.sl. frt. = n	lvs. = v.sl. frt. = n	sl.	sl.	low	poor
MN. 1110	well filled, med.- lge.	med.	heavy	v.sl.	none	lvs. = v.sl. frt. = sl.	sl.	v.sl.	high	v.good
MN. 1111	loose, sml.	sml.	light.- mod.	none	none	lvs. = v.sl. frt. = n	none	none	mod.- hgh.	fair
MN. 1112	well filled, lge	med.	heavy	none	none	lvs. = n. frt. = v.sl.	sl.	none	mod.	gd.- v.gd.
MN. 1114	well filled, lge.	med.- lge.	mod.- hvy.	v.sl.	none	none	none	sl.- mod.	high	gd. - v.gd.
MN. 1117	compact, med.	sml.	light.- mod.	sl.	none	lvs. = v.sl. frt. = n	v.sl.	none	mod.	good

MN. SELECTION DATA 1995										
Name	Cluster Size	Berry Size	Crop Load	Winter Injury	Downy Mildew	Black Rot	2, 4 - D	Phylox .	Vigor	Overall
MN. 1118	well filled, med.	med.	mod.- hvy.	none	none	lvs. = v.sl. frt. = mo	none	none	mod.	good
MN. 1119	compact, sml.	sml.- med.	mod.	none	lvs. = v.sl. frt. = sl.	lvs. = v.sl. frt. = n	v.sl.	none	low - mod.	fair - gd.
MN. 1122	straggly, med.	v.sml.	lght.- mod.	v.sl.	none	lvs. = v.sl. frt. = n	v.sl.	v.sl.	mod.	fair - gd.
MN. 1124	well filled, med.	sml.	mod.- hvy.	none	none	none	v.sl.	none	low	fair - gd.
MN. 1129	well filled, sml.- med.	sml.	mod.	none	lvs. = v.sl. frt. = n	lvs. = v.sl. frt. = v.sl	sl.- mod.	sl.- mod.	mod.- hgh.	good
MN. 1130	well filled, med.- lge.	sml.	mod.- hvy.	none	lvs. = sl. frt. = v.sl.	lvs. = v.sl. frt. = n	v.sl.	mod.	high	fair
MN. 1131	loose, sml.- med.	sml.	mod.	none	none	lvs. = v.sl. frt. = n	v.sl.	v.sl.	low - mod.	good
MN. 1136	straggly, med.- lge.	sml.- med.	lght.	v.sl.	none	lvs. = v.sl. frt. = n	v.sl.	none	low - mod.	fair - gd.
MN. 1140	loose, med.	med.	lght.	none	none	lvs. = v.sl. frt. = n	sl.	v.sl.	mod.	fair
MN. 1142	well filled, sml.	sml.- med.	v.lght.	mod.	none	lvs. = v.sl. frt. = v.sl	none	none	low	poor
MN. 1144	compact, sml.	sml.	light	none	none	lvs. = v.sl. frt. = n	none	none	mod.	fair - gd.
MN. 1147	lse.- well filled, sml.	sml.	light	none	lvs. = v.sl. frt. = n	lvs. = sl. frt. = v.sl.	v.sl.	v.sl.	low	poor - fair
MN. 1148	well filled, sml.	med.	v.lght.- lght.	v.sl.	none	none	none	none	mod.	fair
MN. 1149	compact, sml.- med.	sml.- med.	lght.- mod.	v.sl.	none	lvs. = sl. frt. = sl.	v.sl.	none	mod.	fair
MN. 1151	straggly, sml.	v.sml.	v.lght.	none	none	lvs. = v.sl. frt. = n	v.sl.	none	low - mod.	poor
MN. 1152	compact, med.	med.	lght.	none	none	lvs. = v.sl. frt. = n	sl.	none	mod.	fair - gd.
MN. 1157	well filled, med.	sml.	lght.- mod.	none	lvs. = v.sl. frt. = n	lvs. = sl. frt. = n	sl.	none	low	fair - gd.
MN. 1159	well filled, sml.	med.	mod.	sl.	none	lvs. = v.sl. frt. = n	v.sl.	none	low	fair - gd.
MN. 1160	loose, sml.	sml.- med.	lght.	sl.- mod.	none	lvs. = n frt. = v.sl.	sl.	mod.	mod.	fair
MN. 1161	well filled, med.	sml.	mod.	none	none	lvs. = v.sl. frt. = n	none	v.sl.	mod.	v.gd.
MN. 1163	straggly, sml.	sml.- med.	lght.	none	none	lvs. = sl. frt. = v.sl.	v.sl.	none	mod.	poor
MN. 1166	loose, med.	sml.- med.	lght.- mod.	none	lvs. = v.sl. frt. = n	lvs. = v.sl. frt. = n	none	mod.	mod.	good
MN. 1167	compact, med.	sml.- med.	mod.- hvy.	none	lvs. = n frt. = sl.	lvs. = v.sl. frt. = sl.	v.sl.	sl.	high	good
MN. 1172	compact, sml.- med	med.	lght.- mod.	sl.	none	none	v.sl.	none	mod.	good
MN. 1176	well filled, med.	sml.	mod.	none	lvs. = v.sl. frt. = n	lvs. = v.sl. frt. = n	v.sl.	none	hgh. - excess.	good
MN. 1177.	v.compact, sml.	sml.	lght.- mod.	none	none	lvs. = v.sl. frt. = n	v.sl.	sl.- mod.	mod.- hgh.	good
MN. 1178	compact, med.	sml.- med.	mod.- hvy.	none	none	none	v.sl.	none	high	v. gd.
MN. 1179	loose, med.	med.	lght.- mod.	none	lvs. = sl. frt. = sl.	none	v.sl.	none	mod.	fair - gd.
MN. 1180	compact, sml.	sml.	light	sl.	none	lvs. = v.sl. frt. = sl.	v.sl.	sl.	mod.	fair - gd.
MN. 1181	sml.- med.	med.	mod.- hvy.	none	none	lvs. = sl. frt. = n.	v.sl.	none	low - mod.	fair - gd.
MN. 1182	loose, sml.- med.	sml.	lght.- mod.	none	none	none	mod.	none	mod.	good
MN. 1183	compact, sml.- med.	sml.- med.	mod.	sl.	none	lvs. = v.sl. frt. = n.	none	none	mod.	fair - gd.
MN. 1184	loose, sml.- med.	sml.- med.	lght.- mod.	none	lvs. = ? frt. = n	lvs. = v.sl. frt. = n	v.sl. ?	none	mod.- hgh.	fair - gd.
MN. 1185	loose, med.	med.	mod.	none	lvs. = sl. frt. = n	none	v.sl.	none	hgh.- excess.	good
MN. 1186	loose, v.sml.	sml.	v.lght.	mod.- sev.	none	lvs. = sl. frt. = n	v.sl.	v.sl.	v.low	poor

Performance of Existing Selections (continued)

The harvest data of various selections are given in the table below. The heaviest yielding MN selections measured were MN 1112 and MN 1178, coming in at 8.9 and 8.2 kilos per vine, respectively. MN 1196 (a table grape selection) had the largest berry, weighing in at over three grams. Nearly every selection examined was over 20 brix.

	Brix	Acid (%)	pH	Yield (Kgs)	Cluster Wt. (gms)	Berry Wt. (gms)
MN 1021	20.4	1.29	3.18	6.2	137	1.72
MN 1047	22.5	1.49	3.13	7.1	123	1.32
MN 1047(gris)	22.0	1.56	3.01	1.6	139	1.24
MN 1106	22.5	0.68	3.49	3.7	115	1.48
MN 1112	22.0	1.10	3.02	8.9	137	2.16
MN 1143	22.0	0.93	3.24	4.0	139	1.35
MN 1144	22.6	0.71	3.37	2.1	60	0.96
MN 1149	24.2	1.04	3.18	4.1	104	15.0
MN 1178	25.0	1.40	3.22	8.2	123	1.37
MN 1180	24.2	1.06	3.30	3.7	92	1.27
MN 1183	26.4	0.88	3.14	2.82	75	1.39
MN 1190	20.8	1.05	3.11	3.6	161	1.14
MN 1191	24.2	0.99	3.32	3.4	91	0.89
MN 1194	20.0	1.37	3.24	2.5	118	2.23
MN 1195	21.2	1.26	3.02	5.1	203	2.10
MN 1196	19.8	0.51	3.64	0.6	91	3.13
MN 1197	24.2	0.83	3.17	3.8	125	1.50

Other Varieties

The HRC has an extensive collection of grape varieties from around the world. The cultivars in the hybrid wine variety trial were sampled between Sept 26 and September 28, 1995. The results are shown in table [MGGA2.xls]. This provides a 'snapshot' of their relative maturity levels on the same date. Bear in mind that some varieties would have higher sugar levels when harvested later in the season. The sugar, acid, and pH values for a few vinifera varieties are also included in this table. Additional sugar readings for a separate vinifera trial are listed below. (A few of these cultivars such as Bianca, Orion, Sirius, etc. are not actually vinifera.)

Variety	Sept 26	Oct 2	Variety	Sept 26	Oct 2
Aligote	19.6	19.8	Merlot	19.8	20.6
Bianca	21.8	22.6	Muscat Ottonel	19.7	20.4
Cabernet Franc	18.0	18.8	Orion	21.4	21.0
Cabernet Sauv	17.0	17.7	Pinot Gris	20.4	21.2
Carmine	17.6	20.0	Pinot Noir	20.1	20.4
Chardonnay	20.1	20.0	Riesling	17.2	17.5
Clevener Maria.	20.3	21.5	Siegerrebe	20.0	(picked)
Ehrenfelser	20.7	21.2	Sirius	17.2	19.0
Gamay Beau.	19.3	20.6	VB 86-4	21.6	22.7
Gewurztraminer	20.1	21.4	VB 86-6	21.3	23.5
Gruner Veltliner	20.3	20.8	Viognier	22.4	24.0

Juice Samples
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[MGGA 2.xls]

1995 HRC JUICE SAMPLES				
Variety	Pick Date	Brix	pH	% TA
Aligote	20-Oct	20.1	3.48	0.84
Aris	26-Sep	23.2	3.21	0.89
Aris (20)	4-Oct	23.1	3.35	0.71
Aurore	21-Sep	17.2	3.32	0.6
B 4672	28-Sep	16.2	3.14	1.07
Bianca	26-Sep	22.2	3.55	0.65
Bianca	28-Sep	13.2	2.99	1.49
Brandis Noir	28-Sep	18.2	2.69	2.26
Brother David	28-Sep	19.1	3.01	1.1
Cab. Sev.	26-Sep	22.1	3.19	0.98
Cabernet Franc	20-Oct	21.1	3.35	0.77
Cabernet Sauvignon	20-Oct	20.7	3.27	0.88
Canada	26-Sep	19.9	3.27	1.02
Cascade	26-Sep	18.7	3.43	0.75
Castel 19637	26-Sep	24.1	3.14	0.96
Cayuga White	26-Sep	17.2	3.2	0.69
Chancellor	26-Sep	19.6	3.28	0.95
Chardonnel	26-Sep	19.1	3.08	1.03
Chelois	26-Sep	19.9	3.14	1.13
Colobel	26-Sep	18.1	2.82	1.77
Cynthiana	25-Sep	14.8	2.62	3.68
Dalniewostoznyd	28-Sep	21.1	3	1.02
De Chaunac	29-Sep	18.1	3.21	0.81
Delawere	26-Sep	18.2	3.17	0.94
DM 1925	28-Sep	19.9	3.36	0.62
DM 8313.1	28-Sep	19.8	3.49	0.71
DM 8518-0	26-Sep	23.9	2.76	1.37
DM P 10-48	28-Sep	20.1	3.09	0.83
DM P 3-25	28-Sep	18.2	3.2	0.78
DM P14-40	28-Sep	20.1	3.3	0.81
DM P2R1	28-Sep	18.8	3.06	1.08
DM P3-58	28-Sep	23.1	3.75	0.72
DM P4-73	28-Sep	21.5	3.35	0.68
DMP 26-50	26-Sep	18.2	3.31	0.69
Elvira	26-Sep	14.4	3.05	1.76
ES 2-1-9	28-Sep	17.1	3.49	1.22
ES 2-4-7	28-Sep	16.8	3.4	0.87
ES 2-8-1	28-Sep	19.3	3.8	0.38
ES 3-24-7	28-Sep	17.8	3.4	0.87
ES 4-7-25	28-Sep	16.9	2.96	0.93
ES 4-9-6	28-Sep	18.6	3.26	0.69
ES 5-6-64	28-Sep	25.2	3.22	1.04
ES 5-8-79	28-Sep	16.7	3.19	0.87
Espirit	26-Sep	16.9	3.27	1.12
Foch	26-Sep	21.2	3.58	0.62
Gamay Beaujolais	4-Oct	20.8	3.39	0.86
Gamay Beaujolais	28-Sep	20.2	3.36	0.99

Variety	Pick Date	Brix	pH	% TA
GM 322-58	26-Sep	18.4	3.23	0.83
GW 5	28-Sep	19.8	3.29	0.78
GW 8	28-Sep	18.1	2.97	1.17
Horizon	28-Sep	20.8	3.54	0.54
ILL 179-1	28-Sep	16.2	3.01	1.22
JS 23-416	28-Sep	18.5	3.23	0.72
JS 26-205	28-Sep	17.4	2.85	1.32
Kay Gray	26-Sep	17.1	3.74	0.69
L. 4511	26-Sep	21.7	3.7	0.66
La Crosse	26-Sep	15.8	3.07	1.16
Lucy Kuhlman	26-Sep	21.4	3.28	0.8
Madison Red	26-Sep	19.7	2.78	1.71
Melody	28-Sep	19.1	3.09	1.11
Merlot	20-Oct	22.1	3.36	0.65
Meynieu 6	26-Sep	17.8	3.26	0.9
Michurinitz	26-Sep	21.8	3.16	1.32
Millot	26-Sep	21.2	3.57	0.77
NY 39762	28-Sep	18.1	3.18	0.94
NY 63.1016.1	28-Sep	18.8	3.07	1.16
NY 65-403	26-Sep	21.1	2.87	0.74
NY 70.834.5	28-Sep	20-Jan	3.33	0.78
NY 73-123.1	28-Sep	18.6	3.15	0.83
NY 73-136-17	28-Sep	18.8	3.04	1.08
NY 76.844.19	26-Sep	15.4	3.2	0.95
Oberlin 595	28-Sep	24.2	3.24	1.31
Oberlin 604	28-Sep	25.4	3.27	1.02
Okanagon Riesling	28-Sep	19.2	3.14	0.92
Phoenix	20-Sep	17.8	3.54	0.6
PRK 13-16	26-Sep	17.1	3.03	1.43
PRK 13-32	26-Sep	17.2	2.97	0.71
Ravat 262	28-Sep	17.4	2.96	1.28
Ravat 34	28-Sep	18.8	3.28	0.85
Rayon D'or	28-Sep	15.2	3.06	0.97
Riparia 74	9-Oct	24.1	3.23	2.33
Riparia 89	11-Oct	27.4	3.21	2.31
Rittich Red	28-Sep	20.6	3.13	1.19
Rougeon	26-Sep	15.5	2.98	1.26
S 10868	28-Sep	20.1	3.36	0.84
S 13047	28-Sep	16.2	3.39	0.69
S.1000	26-Sep	15.9	2.96	1.16
Saperavi	28-Sep	16.5	2.84	1.74
Seyval	4-Oct	21.5	3.41	0.8
Seyval Blanc	26-Sep	19.6	3.27	0.89
Seyval Blanc	28-Sep	18.6	3.22	0.71
Siegfried	26-Sep	18.6	3.15	1.16
St. Croix	26-Sep	19.9	3.35	0.8
St. Pepin	26-Sep	19.6	3.19	0.92
St. Pepin (20)	4-Oct	20.4	3.37	0.79
St. Vincent	28-Sep	14.2	2.7	1.68
Suputinski	26-Sep	18.6	3.01	1.1

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Variety	Pick Date	Brix	pH	% TA
SV 18-307	28-Sep	17.3	3.46	0.75
SV 20-365	28-Sep	16.1	2.86	1.22
SV 23512	28-Sep	17.2	3.32	0.62
Swenson Red	28-Sep	20.8	3.4	0.69
Unknonwn 20-10-10-11	28-Sep	17.3	3.67	0.59
Unknown 20-5-9.8	28-Sep	17.5	3.1	1.58
V 67061	28-Sep	22.4	2.93	1.37
V 67154	28-Sep	16.8	2.95	1.1
VB 84-4	20-Oct	24.1	3.78	0.6
Veeblanc	26-Sep	17.1	2.92	1.11
Ventura	26-Sep	16.6	2.63	1.86
Verdelet	28-Sep	14.7	3.06	1.19
Vidal	26-Sep	16.8	2.95	1.16
Vignoles	4-Oct	22.3	2.99	1.24
Vignoles	26-Sep	22.2	2.86	1.29
Villard Blanc	26-Sep	15.9	2.86	1.23
Villard Noir	26-Sep	17.5	2.98	1.38
Vivant	26-Sep	21.2	3.18	1.07
Warsaw #1	28-Sep	20.2	2.88	1.97
Zaria	26-Sep	16.7	3.57	0.88

Winemaking

Numerous wines were made in 1995. Some of the more notable wines are mentioned below.

MN 1060 continued to make a good quality red with very nice color and a cherry and anise aroma. The acidity of this wine is also substantially lower than that of its sister seedling, Frontenac .

MN 1047 Frontenac itself made a nice wine in 1995 with its typical cherry nose. Frontenac gris (a mutation of Frontenac) once again had a high acidity but a very pleasant peach bouqet. In the future it will be interesting to put this variety through malolactic fermentation to reduce its acid level.

MN 1190 made a respectable wine but was slightly thin.

MN 1149 made a nice red wine with a bit of black pepper in the nose. This black pepper was echoed by MN 1180, the finest red of the '95 vintage.

MN 1180 had a pronounced black pepper aroma reminiscent of certain Rhone wines. In addition it also had excellent color, complex flavors, and a strong tannin structure. This is the second year in a row that the wine of MN 1180 stood out as being exceptional in our trials.

The new German variety Regent made a pleasant red, but its color was a bit purplish and the pH rose to 3.70 in the finished wine. (It might be worthwhile to blend Regent with some of our U of MN selections which are generally fairly high in acidity.)

In the area of white wines, several are worth mentioning.
MN 1195 was quite tart but otherwise passable.
MN 1143 had an interesting "piney" aroma.
MN 1194 made a pleasant light muscat that was slightly thin in body.
One of the better white selections was MN 1183 which had a tropical fruit nose.
One of the bigger disappointments was MN 1191, which had both hard acidity and harsh tannins.
Phoenix was another disappointment, rather flat on the palate.
Vignoles made a very nice semi dry wine (as usual).
Gewurztraminer was also quite good.
The best wine overall was a Riesling ice wine, picked at aproximately 10° F and pressed out while still frozen. The wine was then fermented very slowly at 50°F over a period of several weeks. The concentration of flavors in this wine was remarkable.