



Research Report: Seedless Table Grape Variety & Training System Evaluation, 2016

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Our Objective: To identify table grape varieties adapted to NH, to determine the optimum training system for these varieties.

Methods/Details

The research vineyard was planted in May 2015. We planted eight cultivars (chosen based on the results of the [SARE farmer grant FNE10-692](#)), in each of twelve rows. The trellis installation was completed in February 2016. All plots were trained identically in 2016, to establish trunks.

Variety Included	Fruit Color
Canadice (C)	Red
ConcordSdls (CS)	Blue
Lakemont (L)	White
Marquis (Mq)	White
Mars (Mr)	Blue
Reliance (R)	Red
Thomcord (T)	Blue
Vanessa (V)	Red

Vineyard map is shown to the right. Each row will use a different training system, as follows:

- VSP = vertical shoot positioning,
- TWC = top-wire cordon, and
- MM = modified munson.

ROW	Training System								
1	L	V	CS	Mq	C	Ms	T	R	VSP
2	CS	C	L	Ms	R	V	T	Mq	MM
3	R	Ms	CS	C	Mq	T	V	L	TWC
4	C	CS	Ms	L	V	R	Mq	T	TWC
5	Mq	CS	T	R	Ms	L	C	V	VSP
6	Mq	R	Ms	T	CS	V	L	C	MM
7	R	Ms	V	C	T	CS	L	Mq	TWC
8	T	L	Mq	V	R	C	Ms	CS	VSP
9	CS	R	C	T	L	Mq	V	Ms	MM
10	C	V	CS	Ms	T	L	Mq	R	TWC
11	T	Mq	V	CS	L	Ms	R	C	VSP
12	Ms	R	T	L	V	Mq	CS	C	MM

Spacing and Pruning

Vines are spaced 8' apart within rows that are spaced 10' apart. Each plot contains 3 vines. Poles are placed between each plot, every 24' apart. Vines were fertilized with a low rate of N (0.1 actual N per vine) on 26 April 2016, using soybean meal (7-1-2). Weed management was accomplished mechanically, and through shielded applications of glyphosate to row middles on 16 June and 20 Oct, 2016. A single application of zinc ion and manganese ethylenebisdithiocarbamate (Penncozeb) and kresoxim-methyl (Sovran) was made on 15 Sept 2016 to control fungal diseases present in the vineyard.

Data Collection

Winter injury was evaluated on 13 May 2016, on a 1-5 scale, where 1 = dead and 5 = alive with large expanded shoots. Vigor was evaluated on 24 June 2016, on a 0-5 scale, where 0 = dead and 5 = vines reached top wire. On 31 Aug 2016, mortality and vigor were evaluated again, and four diseases were rated: Anthracnose, Downy Mildew, Powdery Mildew, and Black Rot. All diseases were rated on 0-2 scales, where 2 = severe symptoms, 1 = mild symptoms, and 0 = no symptoms.



Preliminary Results & Conclusions, 2016.

MORTALITY. While most varieties had 100% winter survival and showed good vigor during summer 2016, three varieties experienced some mortality over the 2015-16 winter. For these same varieties, the survivors showed low vigor. The highest mortality and lowest vigor was observed for **Thomcord**, while **Lakemont** and **Marquis** had intermediate mortality and vigor.

FRUIT. Three varieties set fruit: Concord Seedless, Reliance, and Mars. Most clusters were removed just after bloom, but a few were left. Birds consumed all fruit prior to ripening.

DISEASES. Very low levels of **black rot** were observed in 2016, and there were no significant differences between cultivars. While very little **anthracnose** was observed, the cultivar **Marquis** showed significantly more symptoms than most varieties, while **Canadice**, **Concord Seedless** and **Vanessa** had nearly no symptoms.

Downy mildew incidence was moderate in the vineyard by August 31, 2016; and the cultivars **Lakemont**, **Marquis** and **Thomcord** showed more symptoms than the remaining varieties. Powdery mildew was present throughout the vineyard by August 31, 2016; the cultivar **Marquis** showed significantly more symptoms than most cultivars, and the cultivars **Canadice**, **Concord Seedless** and **Mars** remained nearly symptom-free.

The cultivar Canadice exhibited a necrotic spotting symptom throughout the vineyard. This may be a form of downy mildew symptom, but because it was very distinct, it was considered separately.

Ratings for percent mortality, vigor, and susceptibility to four diseases (black rot, anthracnose, downy mildew and powdery mildew) for eight (8) seedless table grape cultivars on August 31, 2016 in Durham, NH.

CULTIVAR	Blackrot (1-5)	Anthracnose (1-5)	Downy Mildew (1-5)	Powdery Mildew (1-5)	Mortality (%)	Vigor (1-5)
Canadice	0.06	0.06 c	0.13 b	0.36 c	0	2.69 a
ConcordSdls	0.04	0.03 c	0 b	0.09 c	0	2.86 a
Lakemont	0.08	0.14 bc	0.73 a	0.89 b	14	1.13 b
Marquis	0.05	1 a	0.55 a	1.75 a	14	1.18 bc
Mars	0.11	0.11 bc	0.17 b	0.08 c	0	2.64 a
Reliance	0.12	0.39 b	0.14 b	0.83 b	0	2.53 a
Thomcord	0.08	0.28 bc	0.69 a	1.11 b	36	0.61 c
Vanessa	0.09	0.06 c	0.11 b	1.07 b	3	2.33 a
	<i>NSD</i>	***	***	***	***	***

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Fruit of 'Reliance', before veraison.



Necrotic spotting on 'Canadice'.



Jackie Pondolfinfo, training vines.



The one-year-old vineyard in July, 2016.



Downy mildew symptoms, 31 Aug 2016.