

Horticultural and Chemical Practices Influencing Fruit Quality with Reliance and Swenson Red Table Grape Cultivars

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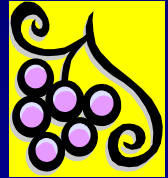
'Swenson Red'

This project is funded, in part, by:

- Leopold Center for Sustainable Agriculture**
- Iowa Fruit and Vegetable Growers Association**

(through the Specialty Crops Program of the Iowa Department of Agriculture and Land Stewardship)

Proposed Research Focus



- **Evaluate cluster removal, berry thinning, and GA application effects on:**

- **Fruit yield and size**
- **Cluster appearance**
- **Fruit quality**

Cultivar Background

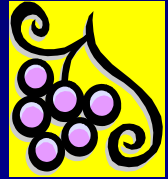


'Swenson Red'

Developed by Elmer Swenson in cooperation with the University of Minnesota.

- Ripens early and is hardy to
–30°F.**
- Used for fresh eating, juice and
wine production.**
- Large red berries, thicker skinned.**

Cultivar Background



'Reliance'

**Released by the University of Arkansas
in 1982.**

- Very hardy seedless table grapes.**
- Red fruit are very thin skinned and
achieve high sugar levels.**
- Flavor and eating quality are
excellent.**

Horticultural Practices



- **30 + 10 balanced pruning system used**
- **Spray schedule according to Extension recommendations (Pm 1375)**
- **Shoots positioned in July to open up canopy**

Cluster Thinning (Removal)

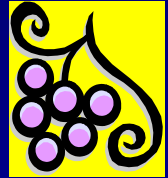


Adjusts crop size by removing clusters and keeping primary clusters





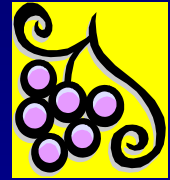
Tail Thinning (Berry thinning)



- Tail thinning alters the shape of the cluster
- Clusters which are naturally long will be more compact when tail thinned
- These clusters are more attractive due compactness and fuller berries



Chemical Treatment- GA



- **Seeded grapes ('Swenson Red') produce GA**
- **Seedless grapes 'Reliance' benefit from applying GA**





Harvest - 'Swenson Red'



Harvest - 'Reliance'



Results - Swenson Red

TRT	# Cluster / Vine		Yield / Vine (kg)		Berry Wt. (g)		Berry Diameter (mm)		Total Soluble Solids (%)	
	Cluster thin									
No tail thin	62.4	bc	13.68	ab	3.71	a	17.9	ab	20.08	a
1/3 tail thin	54	c	10.5	b	3.72	a	17.76	ab	19.78	a
1/2 tail thin	57.2	bc	10.2	b	3.85	a	18.32	a	19.84	a
No Cluster thin										
No tail thin	91.2	ab	16.86	ab	3.26	b	17.22	b	18.22	b
1/3 tail thin	100.6	a	20	ab	3.82	a	18.13	a	19.66	a
1/2 tail thin	103.6	a	17.88	a	3.55	ab	17.8	ab	19.48	a

Results – ‘Reliance’

Treatment		# Cluster / Vine	Yield / Vine (kg)	Berry Wt. (g)	Berry Diameter (mm)	Total Soluble Solids (%)
Cluster Thin						
Tail thin	GA					
+	-	36.00 cd	2.80 c	2.30 a	14.90 ab	18.65 a
-	-	42.50 bcd	3.93 bc	1.95 ab	14.41 ab	16.08 a
+	+	33.50 d	0.70 c	2.13 ab	14.69 ab	16.00 a
-	+	29.50 d	0.47 c	1.32 b	12.86 b	16.05 a
No Cluster Thin						
+	-	56.00 abc	5.58 abc	2.65 a	15.70 a	18.23 a
-	-	68.50 a	11.45 a	2.70 a	15.62 a	17.13 a
+	+	68.67 a	9.68 ab	2.23 a	13.71 a	18.07 a
-	+	57.50 ab	5.07 abc	2.31 a	14.92 a	16.58 a

Conclusions



'Swenson Red'

- **Yields were similar between treatments.**
- **Smallest berries were from control vines (no cluster thinning or tail thinning).**
- **Largest berries from cluster thinned and tail thinned vines.**

Conclusions



'Reliance'

- Need to repeat in 2003 for better estimates of yield.**
- GA applications enhanced maturity date and berry weight.**