

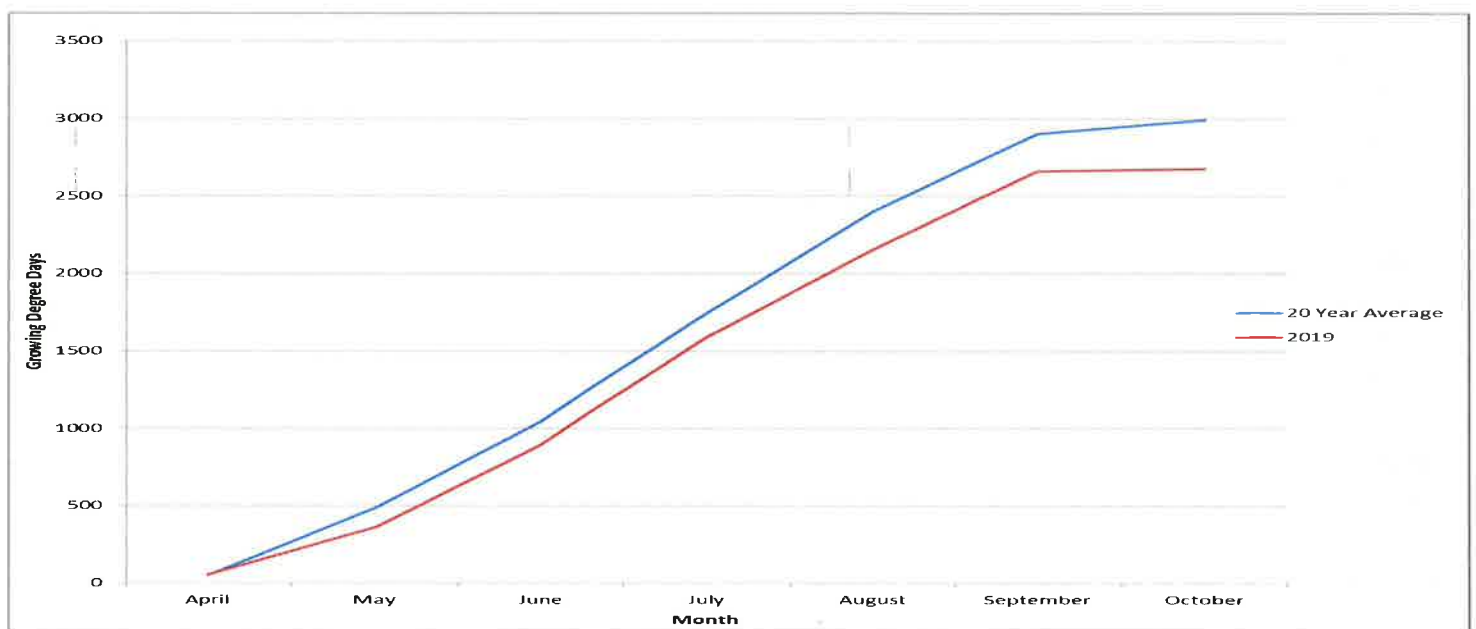


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2019 Western Colorado Onion Variety Trial Summary

The 2019 onion season in western Colorado was less than ideal. A cold, wet spring delayed onion planting until April 15th. On May 6th, 21 days after planting, the occasional flag leaf was observed. Heat failed to accumulate early in the season, as demonstrated in Figure 1, which further delayed plant development. Onions failed to size or mature, and many acres in western Colorado went unharvested due to an early freeze. All plants had 1-2 true leaves on May 31st and varieties were evaluated for emergence. Pink root (percent of infected roots in a random sample), fusarium (percent of infected plants in a random sample) and tip burn (plants effected in a random sample) were evaluated on August 22nd. Maturity (percent tops down in a random sample) was evaluated on September 12th and September 18th. Onions were flailed to speed maturity and curing on September 25th. Onions were harvested and stored on October 2nd and then processed on October 29th.

Figure 1. Growing Degree Days on Corn Basis, 20 year average and 2019



Analysis of Variance (ANOVA) was performed on all evaluation data to test for significant ($p < .05$) differences among varieties. A least significant difference (LSD) test was performed to allow for comparison of how averages differed. If, for a particular evaluation, the average is greater than the LSD then we can be 95% confident that the variety performed better for that characteristic. Example: the market yield of Oracle (25.1 t/a) was significantly higher ($p < .05$; LSD 6.59) than all varieties, other than Scout (23.9 t/a) and Vaquero (23.1 t/a). The fourth highest market yield average was Tucannon (17.7 t/a) which is significantly lower (LSD 6.59) than Oracle, but not Scout and Vaquero.

For the Harvest Report (Table 1), there were significant differences in harvest yield, market yield, jumbo and defects. Prepacks were included in market yield at the suggestion of grower due to a bad year for onion growth and development. Colossal, medium and prepack had no significant differences among averages. Table 2 presents emergence, pink root, fusarium, tip burn and maturity evaluation data of onion varieties. There were statistically significant ($p < .05$) differences for emergence, fusarium, tip burn and maturity. No statistically significant differences were observed for pink root.

Thank you to Brent Hines and Hines Farms for allowing this research to take place. Thank you to American Takii, Crookham and Seminis for their generous contributions.

2019 Varieties

Seminis

SV6672NW

Tucannon

16000

Red Nugent

SV4643NT

American Takii

Grand Perfection

Traverse

Ridge Line

Crookham

Scout

Oracle

Scorpion



Table 1. Harvest Report - Western Colorado Onion Variety Trials
Hines Farms - Delta, Colorado
Yields, sizes and defects are reported as average tons per acre
Planted April 15; Harvested October 2; Processed October 29

	<u>Color</u>	<u>Harvest Yield*</u>	<u>Market Yield*</u>	<u>Colossal</u>	<u>Jumbo*</u>	<u>Medium</u>	<u>Prepack</u>	<u>Defects*</u>
Grand Perfection	Y	13.1	9.1	0	1.7	1.5	5.9	4
Traverse	Y	12.8	11.1	0.5	3.8	0.6	6.2	1.7
Ridge Line	Y	11.1	9.1	0.0	1.4	1.1	6.7	1.7
Scout	Y	24.6	23.9	0.5	17.9	1.8	3.8	0.7
Oracle	Y	25.7	25.1	1.8	16.8	2.5	4.0	0.7
Scorpion	Y	10.0	8.0	0.0	0.0	2.2	5.5	2.4
SV6672NW	Y	18.5	16.8	0.5	10.0	2.0	4.5	1.7
Tucannon	Y	18.5	17.7	0.0	7.1	2.8	7.8	0.8
16000	Y	17.5	16.3	0.0	7.1	0.6	8.7	1.3
Red Nugent	R	5.5	2.8	0.0	0.0	0.2	2.7	2.7
SV4643NT	R	5.5	3.4	0.0	0.2	0.3	2.9	2
Vaquero	Y	23.4	23.1	0.5	13.9	2.2	6.7	0.3

*significant differences at $p < .05$

**least significant differences (LSD): harvest yield 6.42; market yield 6.59; jumbo 8.09; defects 1.27



Table 2. Emergence, Pink Root, Fusarium, Maturity, Tip Burn - Western Colorado Onion Variety Trials
 Hines Farms - Delta, Colorado
 Planted April 15; Emergence May 31; Fusarium, Pink Root and Tip Burn August 22; Maturity September 12
 and 18

	<u>Color</u>	<u>Emergence</u> <u>Plts/5 row ft*</u>	<u>Pink Root Severity</u> <u>%root infected</u>	<u>Fusarium</u> <u>%infected</u> <u>plants*</u>	<u>Tip Burn</u> <u>%leaves</u> <u>effected*</u>	<u>Maturity % tops</u> <u>down</u> <u>9/12/2019*</u>	<u>Maturity % tops</u> <u>down</u> <u>9/18/2019*</u>
Grand Perfection	Y	44.8	22.6	5.1	28.1	5	9.8
Traverse	Y	43.6	19.2	4.3	90.6	41.5	48.3
Ridge Line	Y	44.1	15.5	6.3	59.4	3.3	9.3
Scout	Y	35.4	16.8	2.1	37.5	27.8	34.3
Oracle	Y	36.9	16.3	0.8	15.6	11	14.8
Scorpion	Y	36.6	14.1	5.4	34.4	2.8	9.3
SV6672NW	Y	36.1	18.8	6.9	43.8	5	9
Tucannon	Y	44	16.7	6.7	21.9	8.8	14.3
16000	Y	36.1	20.1	11	31.3	14.8	21.8
Red Nugent	R	39.5	22.3	12.4	46.9	0	2.3
SV4643NT	R	41.3	20.9	13.5	46.9	4.8	7.8
Vaquero	Y	42.8	18.1	4.4	25	21	25.8

*significant differences at p < .05

**least significant differences (LSD): emergence 6.68; fusarium 5.84; tip burn 12.93; maturity (9/12) 23.54; maturity (9/18) 24.74