

Effects of Hydrogen Cyanamide on yield and harvest date of ‘Colossus’ and ‘Optimus’ Southern Highbush Blueberry

Jacob Buck, Jeff Williamson, Gerardo Nunez, and Patricio Munoz, Horticultural Sciences Department, University of Florida.

Introduction. Hydrogen cyanamide (HC) is widely used on some SHB cultivars to stimulate a strong emergence from dormancy characterized by rapid leaf canopy development, concentrated flowering, and earlier ripening. However, SHB cultivars vary in their tolerance of, and potential benefit from, hydrogen cyanamide. The responses of two recently released cultivars from the UF blueberry breeding program, ‘Optimus’ and ‘Colossus’, to HC are not known.

Objectives. Evaluate effects of hydrogen cyanamide (HC) on flower and leaf emergence, harvest date, yield, and fruit quality of ‘Optimus’ and ‘Colossus’ SHB cultivars using the deciduous production system in north-central Florida (Waldo, FL).

Approach

Application dates – January 2, 2019 (2019 season), and December 31, 2019 (2020 season).

Treatments were applied with an air blast sprayer at 100 GPA using 0.25% non-ionic surfactant.

Table 1. Hydrogen cyanamide treatments (spray concentrations) for ‘Colossus’ and ‘Optimus’ SHB.

Cultivar	Hydrogen cyanamide (%)				
	0	0.75	1.00	1.25	1.50
Colossus	+	+	+	+	+
Optimus	+	+	+	+	-

Table 2. Environmental conditions associated with treatment applications for the 2019 and 2020 seasons¹.

Season	Chilling prior to treatment application (hrs.)	Max. temp. day of trt. (F)	Min. temp. night following trt. (F)	Avg. temp. week following trt. (F)	Relative humidity day of trt. (%)	Solar radiation day of trt. (W/m ²)	Reference ET day of trt. (in)
2019	168	81.3	58.9	60.2	90	79.2	0.06
2020	168	65.5	37.0	56.8	75	159.3	0.04

¹Data from AgroClimate and the Florida Automated weather Network (FAWN), Alachua, FL.

2019 Results

- Effects of HC on harvest date of ‘Colossus’ were minimal with a slight but statistically significant advancement of harvest only at the first harvest date on April 4 (Figure 1).
- Hydrogen cyanamide (1.25% rate) increased berry harvest of ‘Optimus’ at the April 4 and April 11 harvest dates (Figure 2).
- Seasonal cumulative berry yield was not affected by HC treatments for either cultivar (Figures 1 and 2).

Figure 1

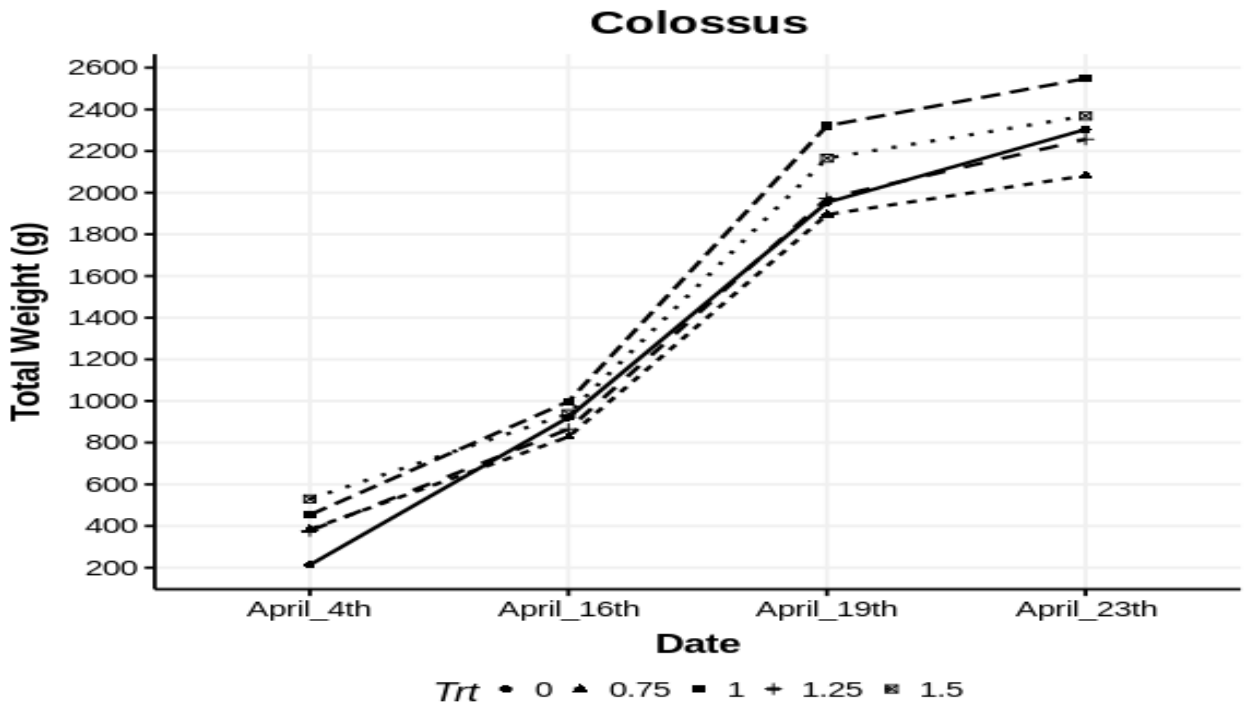
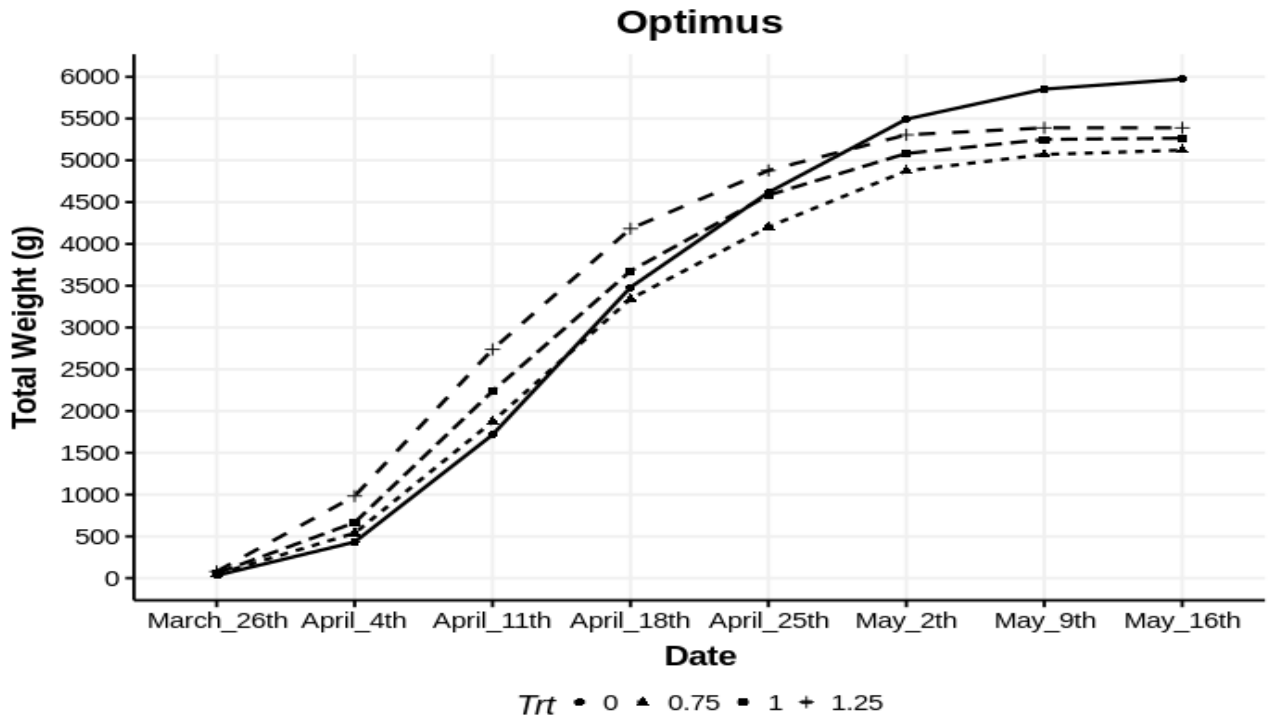


Figure 2



This research is funded by the University of Florida Blueberry Breeding Program.