

### Evaluation of fungicides management for watermelon gummy stem blight, Kinston 2022.

This research trial was conducted at the Cunningham Research Station in Kinston, NC. Experimental plots were single raised beds on 5-ft centers covered with white plastic mulch; 14-ft long with 5-ft fallow borders on each end. Watermelon was seeded on 6 Apr in the greenhouse, thinned to one plant per cell after emergence (2 seed/cell), and transplanted to the field on 5 May (2-ft in-row spacing, 7 plants/plot). Irrigation and fertilization (4-0-8, N-P-K) were applied via drip tape. Four treatments were tested in a randomized complete block design with four repetitions. Fungicide treatments were applied using a CO<sub>2</sub>-pressurized backpack sprayer equipped with a single-nozzle, handheld boom with a hollow cone nozzle (TXVS-26) delivering 40 gal/A at 35 psi. Applications were made on 25 May, 2, 10, 17, 24 and 30 Jun, and 7 and 15 Jul. Disease severity per plot was assessed on 10, 24 Jun and 13, 22, 28 July. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher's protected least significant differences (LSD) test to separate means.

Gummy stem blight was first detected on 24 Jun at approximately 2% disease severity in the field. At the disease severity data obtained 28 Jul there was not a statistical difference between treatments and the non-treated control the grower standard Headline SC had lower disease pressure. For the disease summary for the season (AUDPC) there was no statistical difference between the treatment and the non-treated control. For the vigor data point there was no statistical difference between treatments and the non-treated control.

Treatments	Rate	Disease Severity <sup>z</sup> (%) 28 Jul – Week 12	AUDPC <sup>y</sup>	Vigor <sup>x</sup> (%)
Non-treated control	–	67.5 a <sup>w</sup>	564.63 a	95.0 a
Theia 100%	3 lbs/a	47.5 a	654.63 a	96.3 a
Dyne-Amic 99%	0.25 % v/v			
Howler 50%	2.5 lb/a	60.0 a	815.75 a	93.8 a
Dyne-Amic 99%	0.25 % v/v			
Headline SC 23.3%	7.5 fl oz/a	33.8 a	447.50 a	96.3 a

<sup>z</sup> Disease rating scale based on percent necrotic foliage caused by *S. cucurbitacearum*. / Last data Point. 28 Jul.

<sup>y</sup> Area under disease progress curve for total of all the foliar diseases present.  $AUDPC = \sum_{i=1}^{n-1} \frac{y_i + y_{i+1}}{2} \times (t_{i+1} - t_i)$

<sup>x</sup> Vigor data was based by plot per treatment.

<sup>w</sup> Treatments followed by the same letter(s) within a column are not statistically different ( $P=0.05$ , Fisher's Protected LSD).