

EVALUATION OF AN ELECTROSTATIC SPRAYER FOR CONTROL OF ANTHRACNOSE IN SLICING CUCUMBER, 1998: The trial was conducted on a Bojac fine sandy loam soil (O.M. <1%, pH of 5.8) at the Eastern Shore Agricultural Research and Extension Center in Painter, VA. Fertilization consisted of 1,000 lb/A 10-10-10 (N,P,K) broadcast incorporated on 29 Jul. Standard recommended practices for weed and insect control were followed throughout the season. Cucumbers were seeded on 12 Aug. Plots consisted of single 30 ft rows spaced 5 ft apart bordered by untreated rows. Treatments were arranged in a randomized complete block design with 4 replications. Treatments were applied with either a conventional sprayer or electrostatic (ESS) sprayer. Conventional treatments were applied with a multi-boom sprayer mounted on a Hagie tractor that delivered 40 gal/A at 40 psi. The spray boom was equipped with three nozzles spaced 18 in. apart and fitted with ConeJet TXVS-18 tips. Electrostatic treatments were applied with an air-assisted low volume ESS which applied 6 gal/A at 40 psi. The broadcast boom was equipped with 6 nozzles spaced 12 in. apart. Spray droplets were given a negative charge after passing through the nozzle. Treatments were started on 15 Sep when plants were still upright (pre-vining) and reapplied on 24 Sep and 5, 14 Oct. Supplemental overhead irrigation (0.5 in.) was applied on 24 Aug and 3, 25 Sep. Cucumbers were hand-harvested and graded for infection on 8 and 26 Oct. Foliar disease ratings of the percentage of diseased leaves (incidence), percentage of diseased leaf surface (severity) and defoliation in each plot were taken on 8 and 21 Oct.

Anthracnose was first noted on 2 Sep and had increased to moderate levels at the time of the first spray on 15 Sep. Disease increased rapidly to high levels by the time of the fourth spray on 14 Oct. Using the electrostatic sprayer with Quadris increased yields significantly when compared with Quadris sprayed conventionally. The same effect was not observed with Bravo WS, where the electrostatic treatment, in spite of having significantly lower foliar incidence and severity ratings, showed no significant difference in percent marketable fruit when compared with the conventional treatment.

Treatment and rate/A	Anthracnose ratings					Total yield	
	Incidence		Severity		%Def.	Bu/A	%Mkt
	8-Oct	21-Oct	8-Oct	21-Oct	21-Oct		
Bravo WS 6F 2.0 pt conventional.....	43 a	85 a	8.0 a	45 a	63 a	114 c	23 b
Bravo WS 6F 2.0 pt electrostatic.....	36 b	69 b	1.9 b	34 b	53 a	121 bc	16 b
Quadris 2SC 11 oz conventional.....	22 c	59 bc	0.7 b	23 c	28 b	194 b	51 a
Quadris 2SC 11 oz electrostatic.....	9 d	50 c	0.1 b	11 d	16 b	280 a	63 a

Means within each column followed by the same letter are not significantly different (P = 0.05, New Duncan's Multiple Range Test)