

Evaluation of fungicides for management of winter squash downy mildew, Kinston 2021.

The experiment 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 and non-treated guard rows on each side. The previous year the field was planted to sweetpotato. Squash was direct seeded on 13 Aug (2-ft in-row spacing, 2 seed/hill) and thinned to one plant per hill after emergence (7 plants/plot). Irrigation and fertilization (4-0-8, N-P-K) were applied via drip tape. Eight treatments were tested in a randomized complete block design with four repetitions. Fungicide treatments were applied using a CO₂-pressurized backpack sprayer equipped with a single-nozzle, handheld boom with a hollow cone nozzle (TXVS-26) delivering 40 gal/A at 45 psi. Applications were made on 7 and 15 Sep. Disease severity per plot was assessed on 15 Sep, 24 Sep, 1 Oct, 7 Oct, 14 Oct and 20 Oct. 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.

Downy mildew was first detected on 15 Sep at approximately 2% disease severity in the field. At the last disease severity data obtained on 20 Oct all treatments, except Presidio, were statistically different from the non-treated control, and Omega and Orondis Opti had the lowest disease severity values. Yields were assessed as marketable and non-marketable (data not shown). For the marketable yields all treatments, except Ranman 400 SC, were statistically different from the non-treated control. No phytotoxicity was observed in the experiment.

Treatments	Rate Fl oz /Acre	Disease Severity ^z	Marketable Yields ^y (lbs/treatment)
Non-treated control	32.0	88.25 d ^x	13.75 a
Ranman 400 SC Cyazofamid 34.5%	2.75	73.25 b	19.15 a
Orondis Opti Chlorothalonil 33.2% Oxathiapiprolin 0.5%	14.0	62.50 a	25.00 b
Previcur Flex Propamocarb hydrochloride 66.5%	4.0	74.75 b	24.68 b
Omega 500F Fluazinam 40.0%	8.0	58.75 a	25.70 b
Zampro Ametoctradin 26.9% Dimethomorph 20.2%	24.0	78.75 b c	25.38 b
Presidio Fluopicolide 39.5%	19.2	85.50 c d	25.15 b
Revus Mandipropamid 23.3%	--	76.26 b	27.21 b

^z Disease rating scale based on percent necrotic foliage caused by *P. cubensis* on the last data point 20 Oct.

^y Marketable yields (lbs/treatment).

^x Treatments followed by the same letter(s) within a column are not statistically different ($P=0.05$, Fisher's Protected LSD).