CUCUMBER (*Cucumis sativus* 'Vlasstar')
Downy mildew; *Pseudoperonospora cubensis*

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Evaluation of fungicides for management of cucumber downy mildew, Goldsboro, NC 2021.

The experiment was performed at the Cherry Farm Research Station in Goldsboro, NC. Experimental plots were single raised beds on 6-ft centers covered with white plastic mulch; 14-ft long with 5-ft fallow borders on each end with non-treated guard rows on each side. In 2020, this field was also planted with cucumber. Cucumber was direct seeded on 5 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. Treatments were randomized into four complete blocks. Fungicide treatments were applied using a CO_2-pressurized backpack sprayer equipped with a handheld boom with a hollow cone nozzle (TXVS-26) delivering 40 gal/A at 45 psi. Applications were made on 27 Aug and 3, 10 and 20 Sep. Disease severity per plot was assessed on 10 and 20 Sep. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher's protected least significant difference (LSD) test to separate the means.

Downy mildew was first detected on 27 Aug at approximately 3% disease severity in the field and progressed throughout the course of the experiment. All treatments were significantly different from the non-treated for disease severity, with the Tolfenpyrad+Previcur Flex+Dyne-Amic treatment having the lowest disease severity value. No phytotoxicity was observed in any of the treatments.

Treatments	Rate	Disease severity[z]
Tolfenpyrad 15 SC Tolfenpyrad 15.0% Previcur Flex Propamocarb hydrochloride 66.5% Dyne-Amic Methyl esters of C16-C18 fatty acids, polyalkyleneoxide modified polydimethylsiloxane, alkylphenol ethoxylate 99.0%	19.6 fl oz/a 19.2 fl oz/a 0.125 %v/v	40.5 e[y]
Ranman Cyazofamid 34.5%	2.75 fl oz/a	50.8 d
Previcur Flex Propamocarb hydrochloride 66.5% Dyne-amic 99 TK Methyl esters of C16-C18 fatty acids, polyalkyleneoxide modified polydimethylsiloxane, alkylphenol ethoxylate 99.0%	19.2 fl oz/a 0.125 % v/v	53.5 cd
Orondis Opti 0.83 OD Chlorothalonil 33.2% Oxathiapiprolin 0.5%	24 Fl oz/a	58.8 c
Tolfenpyrad 15 SC Tolfenpyrad 15.0% Dyne-amic 99 TK Methyl esters of C16-C18 fatty acids, polyalkyleneoxide modified polydimethylsiloxane, alkylphenol ethoxylate 99.0%	19.6 Fl oz/a 0.125 %v/v	65.8 b
Non-treated control	--	93.8 a

[z]Last disease rating scale based on percent necrotic foliage caused by *P. cubensis*.
[y]Treatments followed by the same letter(s) within a column are not statistically different (P=0.05, Fisher's protected LSD Test).