

Research shows fungicides effective in fighting *Fusarium* wilt of watermelon

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Patchy distribution of diseased and healthy watermelon plants. Credit: Jeff Standish

Fusarium wilt is one of the most economically important diseases of watermelon and a major problem to growers worldwide. In the past, watermelon growers based in the Southeastern United States were able to use methyl bromide to manage this disease, but this is no longer an option due to environmental concerns.

There are two [fungicides](#) available, but, until recently, little information was available on the efficacy of these two chemicals, Prothioconazole and pydiflumetofen, against Fusarium wilt in North Carolina. As a result, North Carolina State University plant pathologists sought to characterize Fusarium wilt under seven fungicide programs and determine the efficacy.

Their results show that both fungicides provide effective control of Fusarium wilt, regardless of application rate or method. According to Jeff Standish, one of the scientists behind this research, "Based on our results, pydiflumetofen and prothioconazole were equally as effective at reducing Fusarium wilt, and pydiflumetofen seemed to be more effective at preserving yield when [disease](#) was severe. This provides evidence that pydiflumetofen could be used as an additional mode of action for [watermelon](#) growers, which will likely reduce selection for fungicide resistance."

"Documenting that efficacy of pydiflumetofen was similar to that of prothioconazole regardless of rate was a nice and surprising finding," Standish explains, adding that "Despite there only being one year of yield data, the plants grown in nontreated control plots produced no marketable fruit, which really highlights the importance of managing this disease."

Before the publication of this work, the sensitivity of *Fusarium*

oxysporum f. sp. Niveum (the fungus that causes Fusarium wilt) isolates to pydiflumetofen had never been described. This knowledge will be useful for determining when and if fungicide resistance management strategies are needed in the future.

More details about this development can be found in "Sensitivity of *Fusarium oxysporum f. sp. niveum* to Prothioconazole and Pydiflumetofen In Vitro and Efficacy for Fusarium Wilt Management in Watermelon" published in *Plant Health Progress* Volume 20, Issue 1.

More information: Nathan F. Miller et al, Sensitivity of *Fusarium oxysporum f. sp. niveum* to Prothioconazole and Pydiflumetofen In Vitro and Efficacy for Fusarium Wilt Management in Watermelon, *Plant Health Progress* (2020). [DOI: 10.1094/PHP-08-19-0056-RS](https://doi.org/10.1094/PHP-08-19-0056-RS)

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