



## Effect on mint cultivars (*Mentha piperita*)

### 1. The interaction between nematode and fungal pathogen under combined stress at plant interface

Crop: Mint (*Mentha piperita* cv. Black Mitcham, Native spearmint, Scotch spearmint)  
 Stress 1: *Pratylenchus penetrans*  
 Stress 2: *Verticillium dahliae*  
 Stage of plant: 6 week old seedling

The table shows the effect of the nematode on fungus induced wilt and fungus population CFU/cm of stem under combined stress treatment

	Treatment	Response to combined stress** Type B parameters*	
		Wilt severity index	CFU/cm of stem
Black Mitcham	<i>Verticillium dahliae</i> (100 microsclerotia/cm <sup>3</sup> )	4.1	369
	<i>Verticillium dahliae</i> (100 microsclerotia/cm <sup>3</sup> ) + <i>Pratylenchus penetrans</i> (5000 nematodes/pot) simultaneous stress	4.2	498
Native spearmint	<i>Verticillium dahliae</i> (100 microsclerotia/cm <sup>3</sup> )	3.6	0
	<i>Verticillium dahliae</i> (100 microsclerotia/cm <sup>3</sup> ) + <i>Pratylenchus penetrans</i> (5000 nematodes/pot) simultaneous stress	3.5	0
Scotch spearmint	<i>Verticillium dahliae</i> (100 microsclerotia/cm <sup>3</sup> )	2.8	0.6
	<i>Verticillium dahliae</i> (100 microsclerotia/cm <sup>3</sup> ) + <i>Pratylenchus penetrans</i> (5000 nematodes/pot) simultaneous stress	3.2	16

For raw data – Click here (.xlsx file)

Reference - Johnson DA, Santo GS (2001) Development of Wilt in Mint in Response to Infection by Two Pathotypes of *Verticillium dahliae* and Co-infection by *Pratylenchus penetrans*. Plant Disease 85: 1189-1192

**Note:**

‘\*\*\*’ - Values are presented as it is from the source article without subjecting to the calculation.

‘\*’ - For more information on parameter classification, please refer to the ‘methodology’ tab.

**Inference From the study:** Johnson DA, Santo GS (2001) studied the interaction of *Pratylenchus penetrans* and *Verticillium dahliae* in three mint cultivars black Mitcham, native spearmint and scotch spearmint. Simultaneous inoculation of both pathogens was studied. Plants were then analyzed for the wilt severity index and CFU/cm of stem. Wilt severity was overall high for both fungal inoculation and simultaneous inoculation in black Mitcham. Native spearmint showed moderate wilt severity, and Scotch spearmint showed least wilt severity. CFU/cm was higher under simultaneous inoculation condition compared to single fungus inoculation. **Thus, mint cultivar black Mitcham is susceptible and scotch spearmint tolerant for this pathogen combination and works additively to cause a severe disease complex.**