



Stress Combination and their Interaction in Plants (SCIP) Database

Website link: <http://www.nipgr.res.in/scipdb.php>

Effect on corn hybrids (*Zea mays* L.)

Stress 1: *Phoma terrestris*
 Stress 2: *Pythium irregulare*
 Stress 3: *Fusarium acuminatum*
 Stage of plant: Before harvesting

The table shows the interaction between the fungi *P. terrestris*, *F. acuminatum* and oomycete *P. myriotylum* on causing root rot, stalk rot and wilt on corn plants

Hybrids	Treatment	Response under combined stress (Type B parameters*)	
		Root rot	Wilt
DK 572	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>P. irregulare</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	4	5
	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>P. irregulare</i> (8×10^4 zoospores/ml) (Simultaneous stress)	4	5
	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3.3	4.3
	<i>P. irregulare</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3	4
	<i>P. terrestris</i> (8×10^4 zoospores/ml)	3.2	3.6
	<i>P. irregulare</i> (8×10^4 zoospores/ml)	2.5	3.8
	<i>F. acuminatum</i> (8×10^4 zoospores/ml)	2.2	3.2
DK 582	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>P. irregulare</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3.6	4.5
	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>P. irregulare</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3.4	4.4
	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	2.8	3.7
	<i>P. irregulare</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	2.4	3.2
	<i>P. terrestris</i> (8×10^4 zoospores/ml)	2.4	3.4
	<i>P. irregulare</i> (8×10^4 zoospores/ml)	2.3	3

	<i>F. acuminatum</i> (8×10^4 zoospores/ml)	1.8	2.8
DK 522	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>P. irregulare</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	4.4	5
	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>P. irregulare</i> (8×10^4 zoospores/ml) (Simultaneous stress)	4.1	5
	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3.6	4.4
	<i>P. irregulare</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3	4.2
	<i>P. terrestris</i> (8×10^4 zoospores/ml)	3.2	4
	<i>P. irregulare</i> (8×10^4 zoospores/ml)	2.9	4.2
	<i>F. acuminatum</i> (8×10^4 zoospores/ml)	2.6	3.6
DK 677	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>P. irregulare</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3.6	4.4
	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>P. irregulare</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3.4	4
	<i>P. terrestris</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	3	3.8
	<i>P. irregulare</i> (8×10^4 zoospores/ml) + <i>F. acuminatum</i> (8×10^4 zoospores/ml) (Simultaneous stress)	2.5	3
	<i>P. terrestris</i> (8×10^4 zoospores/ml)	2.8	3.4
	<i>P. irregulare</i> (8×10^4 zoospores/ml)	2.4	3
	<i>F. acuminatum</i> (8×10^4 zoospores/ml)	1.9	3.2

(Severities of root rot, stalk rot, and wilt: 1 = healthy plant, 2 = 3 to 30% (slight disease), 3 = 31 to 60% (moderate disease), 4 = 61 to 90% (severe disease), and 5 = dead plant)

For raw data– Click here (.xlsx file)

Reference- Mao W, Carroll RB, Whittington DP (1998) Association of *Phoma terrestris*, *Pythium irregulare*, and *Fusarium acuminatum* in causing red root rot of corn. Plant Dis. **82**:337-342

Note: Values presented as it is from the source article without subjecting to the calculation.

‘*’- For more information on parameters classification, please refer to ‘methodology’ tab

The inference from the study: Mao *et al.*, 1998, studied the interaction of an oomycete *P. myriotylum* with two fungi *P. terrestris* and *F. acuminatum* in the greenhouse and field by exposing the corn plants to all the three pathogens in combination. The corn hybrid lines DK572 (susceptible), DK 582 (resistant), DK 522 (susceptible), and DK 677 (resistant) were utilized for the inoculation before harvesting. **The combination treatment of all three pathogens caused more symptoms of root rot and wilt in susceptible corn hybrid line in comparison with resistant lines.**