



## Effect on Pigeon pea genotypes (*Cajanus cajan* L. cv. ICP9145, ICP8863, ICP2376, Malawi local)

### 1. The net impact of individual and combined stress on plant growth

Crop: Pigeon pea (*Cajanus cajan* cv. ICP9145, ICP8863, ICP2376, Malawi local)  
 Stress 1: *Meloidogyne* sp.  
 Stress 2: *Fusarium udum*  
 Stage of plant: Seedling

The table shows the impact of nematode and fungus alone and in combination on number of dead plants in pigeon pea cultivars

	Treatment	Response to combined stress**
		Type A parameters*
		No. of dead plants
ICP9145	<i>Fusarium udum</i> (2X106)	N/A
	<i>Fusarium udum</i> (2X106) + <i>Meloidogyne</i> sp.(2000 juveniles/plant)simultaneous stress	8
ICP8863	<i>Fusarium udum</i> (2X106)	N/A
	<i>Fusarium udum</i> (2X106) + <i>Meloidogyne</i> sp.(2000 juveniles/plant)simultaneous stress	N/A
ICP2376	<i>Fusarium udum</i> (2X106)	15
	<i>Fusarium udum</i> (2X106) + <i>Meloidogyne</i> sp.(2000 juveniles/plant)simultaneous stress	14
Mal	<i>Fusarium udum</i> (2X106)	15

	<i>Fusarium udum</i> (2X10 <sup>6</sup> ) + <i>Meloidogyne</i> sp.(2000 juveniles/plant) simultaneous stress	15
--	--	----

**Note:**

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

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

**2. The interaction between nematode and fungal pathogen under combined stress at plant interface**

The table shows the effect of nematode on fungus induced wilt incidence under combined stress treatment

	Treatment	Response to combined stress***					
		Type B parameters*					
		% wilt incidence (weeks after inoculation)					
		1	2	3	4	5	6
ICP9145	<i>Fusarium udum</i> (2X10 <sup>6</sup> )	0	0	0	0	0	0
	<i>Fusarium udum</i> (2X10 <sup>6</sup> ) + <i>Meloidogyne</i> sp. (2000 juveniles/plant) simultaneous stress	0	0	0	46.7	46.7	60
ICP8863	<i>Fusarium udum</i> (2X10 <sup>6</sup> )	0	0	0	0	0	0
	<i>Fusarium udum</i> (2X10 <sup>6</sup> ) + <i>Meloidogyne</i> sp.(2000 juveniles/plant) simultaneous stress	0	0	0	0	0	0
ICP2376	<i>Fusarium udum</i> (2X10 <sup>6</sup> )	0	66.7	100	100	100	100
	<i>Fusarium udum</i> (2X10 <sup>6</sup> ) + <i>Meloidogyne</i> sp.(2000 juveniles/plant) simultaneous stress	0	0	100	100	100	100

Malawi Local	<i>Fusarium udum</i> ( $2 \times 10^6$ )	0	86.7	100	100	100	100
	<i>Fusarium udum</i> ( $2 \times 10^6$ ) + <i>Meloidogyne sp.</i> (2000 juveniles/plant) simultaneous stress	0	20	86.7	100	100	100

For raw data – Click here (.xlsx file)

Reference- Marley PS, Hillocks RJ (1996) Effect of root-knot nematodes ( *Meloidogyne spp.*) on fusarium wilt in pigeonpea ( *Cajanus cajan*). Field Crops Research 46: 15-20

**Note:**

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

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

**Inference From the study:** Marley PS, Hillocks RJ (1996) studied the effect of root-knot nematodes ( *Meloidogyne spp.*) on *Fusarium* wilt in four pigeonpea cultivar. Combined stress treatment showed an increase in wilt percentage compared to only fungal inoculum in ICP9145. Although this increase in wilt percent was less compared to ICP2376 and Malawi local. Other cultivars, ICP8863 did not show any wilt symptom. ICP2376 and Malawi local showed very high wilt percent between combined stress and fungus alone almost 100percent. ICP2376 and Malawi local also showed maximum number of dead plants. **Thus, for this pathogen combination ICP2376 and Malawi local are susceptible whereas ICP9145 is resistant.**