



Effect on bean genotypes (*Phaseolus vulgaris* L. cv. IPA-1, A-211, Calima, A-107)

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

Crop: Bean (*Phaseolus vulgaris* cv. IPA-1, A-211, Calima, A-107)
 Stress 1: *Meloidogyne incognita*
 Stress 2: *Uromyces phaseoli*
 Stage of plant: Seedling

The table shows the effect of the fungal pathogen on nematode induced root gall severity and effect of nematode on fungus induced wilt severity index under combined stress treatment

| Treatment | Response to combined stress** | | | | | | | |
|---|-------------------------------|-------|--------|-------|--------------------------|-------|--------|-------|
| | Type B parameters* | | | | | | | |
| | Wilt Severity index | | | | Root gall Severity index | | | |
| | IPA-1 | A-211 | Calima | A-107 | IPA-1 | A-211 | Calima | A-107 |
| <i>Control</i> | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| <i>Meloidogyne (1500 eggs/pot) incognita</i> | 1.0 | 1.0 | 1.0 | 1.0 | 4.7 | 2.0 | 4.6 | 1.1 |
| <i>Meloidogyne (3000 eggs/pot) incognita</i> | 1.2 | 1.0 | 1.0 | 1.0 | 7.9 | 1.5 | 7.0 | 1.1 |
| <i>Fusarium oxysporum (10⁴ spores/ml)</i> | 5.4 | 6.0 | 1.0 | 1.0 | 1.1 | 1.2 | 1.1 | 1.1 |
| <i>Fusarium oxysporum (10⁴ spores/ml)+ Meloidogyne (1500 eggs/pot) incognita (Simultaneous stress)</i> | 5.5 | 6.3 | 1.5 | 1.0 | 3.9 | 1.7 | 5.0 | 1.1 |
| <i>Fusarium oxysporum (10⁴ spores/ml)+ Meloidogyne (3000 eggs/pot) incognita</i> | 5.7 | 6.7 | 2.4 | 1.0 | 6.5 | 2.2 | 7.0 | 1.1 |

| | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|
| (Simultaneous stress) | | | | | | | | |
| <i>Fusarium oxysporum</i> (10^6 spores/ml) | 8.3 | 8.7 | 1.5 | 1.0 | 1.1 | 1.2 | 1.1 | 1.1 |
| <i>Fusarium oxysporum</i> (10^6 spores/ml)+ <i>Meloidogyne</i> (1500 eggs/pot) <i>incognita</i> (Simultaneous stress) | 7.9 | 8.8 | 2.6 | 0.9 | 3.7 | 1.5 | 5.2 | 1.1 |
| <i>Fusarium oxysporum</i> (10^6 spores/ml)+ <i>Meloidogyne</i> (3000 eggs/pot) <i>incognita</i> (Simultaneous stress) | 9.0 | 8.9 | 4.9 | 1.0 | 2.7 | 1.5 | 6.0 | 1.5 |

For raw data – Click here (.xlsx file)

Reference- France RA, Abawi GS (1994) Interaction between *Meloidogyne incognita* and *Fusarium oxysporum* f. sp. *phaseoli* on Selected Bean Genotypes. *Journal of Nematology* 26(4):467-474

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: France RA, Abawi GS (1994) studied the interaction of *M.incognita* and *Fusarium oxysporum* on four different genotypes of the bean. Simultaneous inoculation was done at different concentrations of the pathogen. Wilt severity index was high in IPA1 and A211 compared to the other two cultivars. The root gall severity index was high in A211 and Calima. Disease severity was high at lower fungal inoculum level compared to high inoculum levels. **Thus, IPA1, A211, and Calima are more susceptible to this pathogen combination. A-107 is a resistant genotype**