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INTERACTION BETWEEN *MELOIDOGYNE JAVANICA* AND *PSEUDOMONAS SOLANACEARUM* ON BRINJAL*

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Abstract : The combined pathogenic effects of *Pseudomonas solanacearum* biotype-3 and *Meloidogyne javanica* on brinjal were greater than independent effects of either. The most severe wilt development occurred in plants inoculated with the nematode, two and three weeks prior to bacterial inoculation than simultaneous inoculation or inoculation of bacteria four weeks after the nematode inoculation. A minimum of 10 egg-masses/plant facilitated wilt development, six days after bacterial inoculation. Increased nematode inoculum levels 50, 100 and 150 egg-masses/plant hastened the wilt symptom development. Higher nematode inoculum levels (100 and 150 egg-masses/plant) significantly reduced plant growth. Bacterial inoculation alone in the root zone did not affect growth parameters.

Key words : *Meloidogyne javanica*, *Pseudomonas solanacearum*, Interaction, Brinjal

MORPHOLOGY AND MORPHOMETRICS OF *PRATYLENCHUS BRACHYURUS*
AND *P. ZEAЕ II* INFLUENCE OF ENVIRONMENTAL FACTORS

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Abstract : Unfavourable host, overcrowding and high temperature decreased the body size of *Pratylenchus brachyurus* and *P. zaeae*. Nematodes of both species, from host roots grown on White's nutrient medium, were larger than those on Krusberg's or Carew's media. Other characters like head to excretory pore distance, total oesophageal length, gonad and tail length also tended to vary in the same way as the body size in both species, though oesophageal and tail lengths varied less than the body size. Stylet length varied little. DeMan ratios a, b, b, c, and Geraert's ratio (M.B.) varied widely and did not consistently exhibit strong relationship. By contrast, deMan V ratio and a new ratio designated 'P.O.' varied little and showed strong relationship.

Key words : *Pratylenchus brachyurus*, *P. zaeae*, morphometrics, environmental factors

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TWO NEW SPECIES OF THE GENUS *XIPHINEMA* FROM GRAPE VINEYARDS OF HYDERABAD CITY (ANDHRA PRADESH)

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Abstract : Two new species of *Xiphinema* Cobb, 1913, *X. kosaigudensis* and *X. hydrabadiensis* are described from soil around grape vineyards of Hyderabad city. *X. kosaigudensis* differs from *X. neoamericanum*, in having a smaller spear and spear extension, anteriorly located vulva and by the semi set-off expanded lip region. *X. hydrabadiensis* differs from *X. elongatum* in having broad amphidial aperture, protoplasmic core not extending up to the tail tip and by the broader lateral hypodermal chords.

Key words : *Xiphinema kosaigudensis*, sp. n., *X. hydrabadiensis*, sp.n., Grape

EFFECT OF CERTAIN NEMATICIDES ON THE SEX RATIO OF
MELOIDOGYNE INCOGNITA ON TOMATO AND *TYLENCHORHYNCHUS*
BRASSICAE ON CAULIFLOWER

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Abstract : Soil treatment with nematicides, DD, DBCP, phorate, fensulphothion, dimethoate, aldicarb and carbofuran resulted in an increase in the number of males of *Meloidogyne incognita* on tomato and *Tylenchorhynchus brassicae* on cauliflower. The number of males in nematicidal treatments, increased with an increase in the inoculum density. The percentage of males of *M. incognita* was highest in treatments with DBCP and fensulphothion followed by DD and aldicarb and to certain extent in dimethoate. In *T. brassicae*, it was highest in DD at all levels of inoculum and in DBCP at highest inoculum level. Phorate, dimethoate and aldicarb increased males populations at population levels of 1000 and 5000 respectively.

Key words : *Meloidogyne incognita*, *Tylenchorhynchus brassicae*, Sex ratio of Nematodes

SOME ASPECTS OF ECOLOGICAL BEHAVIOUR OF *HELICOTYLENCHUS*
ABUNAAMAI SIDDIQI, 1972

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Abstract : In 1 per cent water agar, *Helicotylenchus abunaamai* fed ectoparasitically on main roots, rootlets, root hairs and congregated around the meristematic zone of rice roots. The population development on pot-grown rice cultivar Jagannath, indicated progressive increase in nematode density upto the fourth month followed by a decline in the last two months. The nematode survived in moist sterilized fallow soil in decreasing frequencies upto 7 months. Soil texture also influenced the population build up on rice. Among the different types of soils, sandy loam favoured the maximum population build up.

Key words : *Helicotylenchus abunaamai*, feeding behaviour, multiplication.

MORPHOLOGY AND MORPHOMETRICS OF *PRATYLENCHUS BRACHYURUS*
AND *P. ZEA* III. INFLUENCE OF GEOGRAPHICAL LOCATION

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Abstract : Linear and relative dimensions in population of *Pratylenchus brachyurus* (Godfrey, 1929) Filipjev & Schuurman, 1941 and *P. zae* Graham, 1951 from six different geographical areas varied widely, but stylet length and "V" ratio were found to be good diagnostic characters. Populations of the two species from Australia had larger body size than populations from North Carolina, Rhodesia, Singapore, Malawi and Nigeria. A new relative dimension (P.O.), derived from posterior oesophagus length as a percentage of total oesophageal length, is a potentially useful taxonomic character. Few males and inseminated females were found in population of *P. zae* from Singapore.

Key words : *Pratylenchus brachyurus*, *P. zae*, morphometric, localities

PATHOGENICITY AND ANALYSIS OF CROP LOSSES IN PATCHOULI DUE TO *MELOIDOGYNE INCOGNITA*¹

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Abstract : The pathogenic effects of root-knot nematode, *Meloidogyne incognita* to patchouli, *Pogostemon cablin* were investigated at inoculum levels of 100, 1000 and 10,000 nematodes per plant under pot culture conditions. Significant reduction in root and top weights was recorded. As high as 15.9 and 27.9 per cent reduction in top and root weights respectively was recorded with an initial inoculum level of 10,000 nematodes per plant over a period of six months. Loss in top weight and shade dried leaf yield due to *M. incognita* was found to be 47 and 86.7 per cent respectively under field conditions when the root-knot index was 2.75 in 1-4 scale.

Key words : Pathogenicity, *Pogostemon cablin*, Crop loss, *Meloidogyne incognita*

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EFFICACY OF SEED TREATMENT WITH THREE NEMATICIDES FOR THE CONTROL OF *MELOIDOGYNE INCOGNITA* INFECTING COWPEA, FRENCH BEAN AND PEAS*

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Abstract : Three nematicides viz., aldicarb sulfone, carbofuran and fenamiphos, each at 0.25, 0.50 and 1.00% were tested as seed treatment for the control of *Meloidogyne incognita* infecting cowpea, french bean and peas under field conditions. Fenamiphos at the highest concentration gave least root-knot index in all the crops followed by aldicarb sulfone and carbofuran. All the chemicals at one per cent concentration were effective in increasing the pod yields of leguminous vegetable crops. In general, as the concentration of chemicals increased, there was gradual decrease in root-knot index and increase in pod yields. Seed treatment with nematicides can be effectively employed to reduce the severity of root-knot nematode infestation in leguminous vegetables.

Key words : *Meloidogyne incognita*, Seed treatment, aldicarb sulfone, carbofuran, fenamiphos, Cowpea, French bean, Peas

PLANT GROWTH OF CHICKPEA AS INFLUENCED BY INITIAL INOCULUM LEVELS OF *MELOIDOGYNE INCOGNITA*¹

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Abstract : Pathogenicity of *Meloidogyne incognita* on chickpea cultivar Pusa 209, was studied with five inoculum levels, namely, 0.5, 1.0, 2.0, 4.0 and 8.0 larvae per g of soil along with check and associated check. There was a progressive decrease in plant growth as the inoculum level of the nematode increased. An inoculum of 2 larvae per g soil was found to be the damaging threshold level. Rhizobial nodulation was adversely affected at all the inoculum levels.

Key words : *Meloidogyne incognita*, Chick pea, Pathogenicity

NEMATOTOXICITY OF SOME PHOSPHONATES AND
PHOSPHOROTHIOLATES AGAINST ROOT-KNOT NEMATODE
*MELOIDOGYNE INCOGNITA*¹

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Abstract : The result of four aryl phosphonates and two phosphorothiolates assayed against possible control of *Meloidogyne incognita* has been reported. Dichloromethyl O, O-di (2, 4, 5-trichlorophenyl) phosphonate was found to be the most effective chemical *in vitro* studies. The plant growth characters were not adversely affected by the use of these chemicals. However all the test chemicals have significantly controlled the gall index with maximum reduction in the case of S-methyl O, O-di (2, 4, 5-trichlorophenyl) phosphorothiolate.

Key word : *Meloidogyne incognita*, phosphonates, phosphorothiolates, control, synthesis