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STUDIES ON INTER-RELATIONSHIP BETWEEN *MELOIDOGYNE*
INCOGNITA AND *ROTYLENCHULUS RENIFORMIS* ON OKRA

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Abstract : The root-knot nematode, *Meloidogyne incognita* and the reniform nematode, *Rotylenchulus reniformis* caused significant reduction in plant growth of okra cv. Pusa Sawani. Consequently water absorption capability of roots was impaired. In concomitant infections the reduction in plant growth as well as in water absorption capability of roots was more pronounced. The reduction of plant growth in combined inoculations was, however, relatively less than the sum total of reductions caused by the same levels of the single species inoculations. In single as well as in combined inoculations the reduction in plant growth and in water absorption capability of roots was found directly proportional to the increasing inocula of both the nematodes. In co-habitation the nematodes were antagonistic to each other.

Key words : *Meloidogyne incognita*, *Rotylenchulus reniformis*, Interaction, Water absorption.

COMPARATIVE STUDIES ON THE NEMATICIDAL PROPERTIES OF
TYPHONIUM TRILOBATUM AND *MELIA AZEDARACH*

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Abstract : Corm powder of *Typhonium trilobatum* and seed dust of *Melia azedarach* were tested in pot soil against *Meloidogyne incognita* to compare their nematicidal activity. *T. trilobatum* not only exhibited potentiality as nematicide than *M. azedarach* but acted as a better growth promoter also. In preplant application, *T. trilobatum* at highest dose controlled 18 per cent more nematode than that of *M. azedarach* while in residual toxicity test, it was 34 per cent higher when compared with *M. azedarach*.

Key Words : Corm, *Typhonium trilobatum*, *Melia azedarach*, *Meloidogyne incognita*, *Lycopersicon esculentum*.

IMPROVED CULTURING TECHNIQUE FOR *APHELENCHOIDES*
BESSEYI BY INDUCING ANHYDROBIOSIS

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Abstract : An efficient and quick method for laboratory culturing of *Aphelenchoides besseyi* on *Alternaria alternata* is described. Different larval and adult stages of nematode in an anhydrobiotic condition on filter paper pieces were used as source of inoculum. Dehydration studies showed that moderate humid conditions (where the rate of dehydration was slow) enabled all stages of *A. besseyi* to undergo anhydrobiosis. The number of anhydrobiotic nematodes which could be revived later on was found to be inversely proportional to the rate of drying.

Key words : *Aphelenchoides besseyi*, *Setaria italica*, culturing, anhydrobiosis, *Alternaria alternata*, *Curvularia lunata*.

COMPARATIVE EFFICACY OF DUROFUME AND OTHER FUMIGANTS
AGAINST ROOT-KNOT NEMATODE AND WEEDS IN FCV
TOBACCO NURSERIES*

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Abstract : Studies were conducted to compare the efficacy of Durofume with methyl bromide and ethylene dibromide individually in nurseries and resultant yields by use of seedlings from fumigated beds. Durofume and methyl bromide were highly effective in controlling root knot and weeds in tobacco nurseries. Ethylene dibromide was inferior to both, though having nematicidal and weedicidal action. Though the cost of treatment is high initially, in view of the multiple advantages viz., absolute nematode control, weed control, increased transplants and increase in cured yields by using seedlings from fumigated beds, utility of durofume in nurseries is advocated.

Key words : *Meloidogyne incognita*. Durofume, tobacco nurseries, weed control.

EFFECT OF INTENSITY OF ROOT KNOT GALLING IN SEEDLINGS ON YIELDS OF FLUE CURED TOBACCO*

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Abstract : A study was conducted to assess influence of different levels of infection in seedlings on the cured leaf yields. Absolutely healthy and apparently disease-free seedlings showed difference to the extent of 41-46 per cent in green and cured leaf yields. As infection in seedlings increased yield as well as quality of final produce deteriorated further. Results emphasize the need for absolute control of nematodes by fumigation rather than selecting apparently gall-free seedlings from non-fumigated nurseries for planting to ensure maximum yields.

Key words : Yield, Tobacco, Root-knot nematode

INTERACTION OF *TYLENCHULUS SEMIPENETRANS* WITH
FUSARIUM SOLANI ON CITRUS

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Abstract : The single and combined effect of *T. semipenetrans* and *F. solani* was studied under pot culture conditions on growth of citrus and nematode multiplication. Nematode proved more pathogenic than fungus. In combined inoculations the injurious effects of fungus were enhanced more when it was added either simultaneously or after nematode. The prior inoculation of fungus caused reduction in nematode multiplication. Both fungal extract and cultural filtrate proved toxic to *T. semipenetrans* larvae under *in vitro* tests.

Key words : Interaction, *Tylenchulus semipenetrans*, *Fusarium solani* and Citrus

EFFECT OF MULCHING OF GREEN LEAVES FOR THE CONTROL OF ROOT-KNOT NEMATODE IN MULBERRY

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Abstract : Field experiments have shown that mulching of green leaves of pongamia and neem in the soil has significantly reduced the incidence of root-knot nematodes (*Meloidogyne incognita*) and increased the plant growth as well as leaf yield. In all the four trials conducted, mulching of pongamia leaves was found to be superior over neem leaves in all the parameters studied. In pongamia the leaf yield was increased by 28.44-41.71% followed by 16.13-38.67% in case of neem leaves mulched over control. The number of root-knots and egg masses were found to be minimum in pongamia and neem, but maximum was observed in control.

Keywords : *Meloidogyne incognita*, neem leaves, pongamia leaves, mulching, mulberry.

EFFECT OF LEAF EXTRACTS OF *ARTABOTRYS ODORATISSIMUS*
R. (FAM. ANONACEAE) ON THE HATCHING OF THE EGGS
OF *MELOIDOGYNE INCOGNITA* (KOFOID AND
WHITE, 1919) CHITWOOD, 1949

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Abstract : Water extracts of 15,30 and 45 leaves of “Kathal Champa” (*Artabotrys odoratissimus*) were tried against *Meloidogyne incognita*. When egg-masses of the nematode were kept in aqueous solution of the above leaf extracts, significant reduction in larval hatch was observed after 24, 48 and 72 hours. Maximum reduction in the rate of hatching occurred when the egg-masses were subjected in the extract for 72 hours.

Key words : *Artabotrys odoratissimus*, *Meloidogyne incognita*, *Lycopersicon esculentum*, **eggmass**.

HOST RANGE OF *APHELENCHOIDES AGARICI*

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Abstract : Seven fungi isolated from spent compost and casing soil were tested for their suitability as hosts of *Aphelenchoides agarici*. Out of these, *Fusarium* sp. was found to be a suitable host, *Trichoderma* sp. acted as tolerant. *Trichothercium roseum* and *Gilliaminella* sp. proved to be poor hosts and *Trichoderma viridi*, *Aspergillus niger* and *Trichurus spialis* were found non hosts.

Key words : *Aphelenchoides agarici*, host range

EFFECT OF CULTURE FILTRATES OF SOIL FUNGI ON THE MORTALITY
AND HATCHING OF RENIFORM NEMATODE (*ROTYLENCHULUS*
RENIFORMIS)

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Abstract : Culture filtrates of ten common soil fungi showed toxic effect against *Rotylenchulus reniformis*. Percentage mortality of reniform nematode was directly proportional to the concentration of culture filtrates and exposure period to each filtrate. Rate of mortality was low in the first 24 hours but it appreciably increased with the increase in exposure period. Similarly, different dilutions of fungal filtrates of all the test fungi were hatch inhibitory to a varying degree. There was relative decrease in the larval emergence with the corresponding increase in the concentration of fungal filtrates but interestingly the S/100 concentration of *Rhizopus nigricans* filtrate significantly increased hatching. Besides fungal filtrates, Richard's liquid medium also exhibited nematotoxicity to a certain extent.

Key words : *Rotylenchulus reniformis*, culture filtrate, mortality, hatching.

EFFECTIVENESS OF CHEMICALS AGAINST *HETERODERA AVENAE* WOLL. ON WHEAT

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Abstract : Carbofuran, both flowable and granular formulations, was effective in reducing nematode population and increasing wheat yield in comparison to other chemicals. Isofenphos was phytotoxic, at the tried doses, but was effective in checking nematode multiplication. Different doses of aldicarb and phenamiphos, when tried with different nitrogen levels, behaved similarly as far as wheat yield and reduction in nematode population was concerned and were better than check treatment.

Key words : Chemical control, *Heterodera avenae*, wheat

SPECIES OF *PRATYLENCHUS* FILIPJEV, 1936 AND *HELICOTYLENCHUS* STEINER, 1945 (NEMATODA : TYLENCHIDA) FOUND ASSOCIATED WITH FOREST TREES IN NORTHERN INDIA*

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Abstract : *Pratylenchus kumaoensis* sp. n. from rhizosphere of *Populus* species and *Helicotylenchus silvaticus* sp. n. from the rhizosphere of *Quercus incana* from Northern India are described and figured. *P. kumaoensis* sp. n. is characterised by having a relatively smaller spear (14-15 μ m), lateral field with four incisures and tail terminus crenated. *H. silvaticus* sp. n. is distinct in having a high, non-annulated head; relatively smaller spear (19.5-21.5 μ m) and longer tail with greater number of tail annules (10-16), and pronounced terminal projection ventrally. Morphological characters and body dimensions are also given for known nominal species viz; *Pratylenchus neglectus*, *P. vulnus*, *Helicotylenchus indicus* and *H. pseudorobustus*.

Key words : *Pratylenchus kumaoensis* sp.n., *Helicotylenchus silvaticus* sp. n., forest-nematodes.

DESCRIPTION OF *TYLENCHORHYNCHUS MARUDHARENSIS* SP. N. WITH
A NOTE ON *SAFIANEMA ANCHILISPOSOMA* (NEMATODA :
TYLENCHIDA) FROM THAR REGION, INDIA

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Abstract : *Tylenchorhynchus marudharensis* sp. n. collected from soil around the roots of datepalm (*Phoenix dactylifera* L.) is described and figured. The new species is characterised by the presence of cuticularised structures around vagina, ventrally thickened cuticle posterior to vulva upto 7-8 body annules and is differentiated from closely related species *T. paaloofi* and *T. ventralis* by a combination of characters. Body dimensions are given for *Safianema anchilisposoma*, recorded for the first time from the Thar desert, India.

Key words : *Tylenchorhynchus marudharensis* sp. n. datepalm, *Safianema anchilisposoma*.

***DESMOSCOLEX INDICUS* SP. N. (NEMATODA : DESMOSCOLECIDA)
FROM FOREST SOIL OF NORTHERN INDIA**

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Abstract : *Desmoscolex indicus* sp. n. collected from soil around the roots of a forest tree, *Albizia prosera* is described and figured. *D. indicus* is distinguished in having 2 pairs of cephalic setae; comparatively smaller and unequal number of subdorsal somatic setae on left and right side and absence of spinneret and caudal glands. This is the first record of *Desmoscolex* species from India,

Key words : *Desmoscolex indicus* sp. n., soil desmoscolecid

**TROPHOTYLENCHULUS WALIAI N. SP. (CRICONEMATINA :
TYLENCHULIDAE) FROM HARYANA, INDIA**

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Abstract : *Trophotylenchulus waliai* n. sp. parasitising roots of cactus, *Cereus peruvianus* L., is described. Females are enclosed singly in dark brown to black cases alongwith eggs and juveniles. Females : L=251-347 μ m, V=74-80, excretory pore=39-45%, tail tip bluntly rounded; males : L = 340-376 μ m, spear with very weak knobs, excretory pore=35-38%, renette cell anterior to excretory pore, spicules with broad and notched tips; second-stage juveniles : L=256-338 μ m; excretory pore=33-45%, lateral lines two, renette cell well developed, tails usually with broad-rounded termini.

Key words : *Cereus peruvianus*, *Trophotylenchulus waliai*.