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INTERRELATIONSHIP BETWEEN *MELOIDOGYNE INCOGNITA*,
HETERODERA CAJANI AND *RHIZOBIUM* SP. ON COWPEA
(*VIGNA SINENSIS* (L.) SAVI)

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Meloidogyne incognita and *Heterodera cajani*, singly or in concomitant inoculum significantly reduced the growth of cowpea. Addition of rhizobia tended to reduce this damage to some extent. Similarly either of the nematode species adversely affected the root nodulation and nitrogen content of the plant. *M. incognita* reduced N-content to a greater extent than *H. cajani*. Root examination showed that both these nematode species could thrive well and complete their life cycle on nodular tissue.

EFFECT OF *MELOIDOGYNE JAVANICA* ON NODULATION AND
SYMBIOTIC NITROGEN FIXATION IN MUNG, *VIGNA RADIATA**

BY

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Effect of *Meloidogyne javanica* on growth, nodulation and nitrogen fixation in mung plants was investigated. Inoculation of root-knot nematode alone, simultaneously or 2 to 7 days preceding *Rhizobium* inoculation had deleterious effect on plant growth compared to plants inoculated with *Rhizobium* alone. The nematode inoculation prior to rhizobia resulted in maximum reduction of nodules. In plants where *Rhizobium* inoculation preceded nematode inoculation or inoculated with *Rhizobium* alone, growth and nodulation were normal. The infestation by the nematode interfered with nitrogen fixation and reduced the nitrogen content of shoot and root.

RESISTANCE IN SOME MUNG BEAN (*VIGNA RADIATA*) VARIETIES
AND BREEDING LINES TO THE ROOT-KNOT NEMATODE,
*MELOIDOGYNE INCOGNITA***

BY

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Two hundred and seventy-seven varieties/lines of mung bean were tested under pot culture conditions for their susceptibility to the root-knot nematode, *Meloidogyne incognita*, out of which 12 varieties showed resistance responses. The resistance response in mung bean to *M. incognita* was characterised by reduced larval penetration, fewer shrunken giant cells at the feeding site, reduced growth of the invading nematode and retarded life cycle of the parasite. Nitrogen content of uninoculated plants was more in shoot than in root in all the varieties tested. Arginine, leucine/norleucine and threonine were found to be lacking in resistant varieties.

LONGEVITY OF THE RENIFORM NEMATODE, *ROTYLENCHULUS*
RENIFORMIS IN HOST-FREE SOIL

BY

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The longevity of *Rotylenchulus reniformis* in desiccated and moist soils under host-free conditions has been studied. The nematode (juvenile female) lives for about six months in desiccated soil and seven months in moist soil. A high percentage of the nematodes remain infective even after four months of starvation. There is an indication that the fourth-stage larvae are better adapted for survival under adverse conditions, being protected by the previous larval outicles which are not shed.

CONTROL OF *TYLENCHORHYNCHUS BRASSICAE* BY THE
APPLICATION OF OIL-CAKES

BY

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Amendment of soil with oil-cakes of neem, groundnut, mustard and castor was effective in reducing the population of *Tylenchorhynchus brassicae* around the roots of cabbage and cauliflower, both in pot and field trials. Amendments also significantly ameliorated the condition of crops as compared to inorganic fertilizers. Mahua cake, although effective against the nematode, was phytotoxic. In the absence of host, the fall in the population of nematode was higher in oil-cake amended soils than in soil treated with inorganic fertilizers.

RESPONSE OF WHEAT AND BARLEY TO SOIL FUMIGATION BY
DD AND DBCP AGAINST 'MOLYA' DISEASE CAUSED BY
HETERODERA AVENAE

BY

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Two soil fumigants, DD and DBCP, were tested against *Heterodera avenae* in an infested area in Jaipur during 1968-71. DD at the rate of 300 l/ha and DBCP at 45 l/ha appeared to be the optimum dose for effective reduction in nematode population as well as yield response in wheat and barley.