

freshly hatched second stage larvae of *M. incognita*. Each treatment was replicated five times. Forty days after nematode inoculation, the plants were carefully uprooted and observations on root-knot index based on 1 to 4 scale (1-no galling, 2-light galling, 3-moderate galling, 4-heavy galling) were recorded. The field evaluation was done at the Experiment Station of the Indian Institute of Horticultural Research, Bangalore, on red sandy loam soil naturally infested with *M. incognita*. Twenty seeds of each variety/selection were sown 20 cm apart per row of 4m. Two months after sowing five plants from each variety/selection were selected at random, uprooted carefully and rated for root-knot index.

No galling was observed on 18 varieties/selections of french bean both under glasshouse and field conditions and were rated as resistant (Table I). Thirty seven varieties/selections were found moderately resistant with root-knot index ranging from 1.1 to 2.0, while 10 varieties/selections were moderately susceptible with root-knot index ranging from 2.1 to 3.0. All the other 95 varieties tested were susceptible to the root-knot nematode.

REACTION OF SOME COWPEA VARIETIES TO ROOT-KNOT NEMATODE

BY

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To study the reaction of cowpea to root-knot nematodes, thirteen cowpea varieties (obtained from the Plant Breeder and Forage Agronomist) were sown in clay pots of 10 cm dia.

TABLE I

Variety	Root-knot index	Index of resistance (%)
C-152	2.0	60
82-1-B	2.0	60
Lobia	2.66	47
CO-1	2.83	44
EC-4216	3.66	40
NO-10	3.66	40
HFO-42-1	3.83	24
V-16	4.50	10
V-38	4.83	4
5-8-2-2	5.00	0
No-2-1	5.00	0
Russian Jiant	5.00	0
FOS-1	5.00	0
S.E. \pm = 0.28	C.D. at 5% level of significance = 0.81	

and two weeks old seedlings were inoculated with larvae of *Meloidogyne incognita* at a level of 1 larva/g of soil. The root-knot indices were measured 45 days after inoculation and per cent index of resistance was determined (Bingefores, 1957).

Though all the varieties exhibited galling, two varieties, C-152 and 82-1-B expressed some degree of resistance. In the former variety no egg masses were encountered.

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REFERENCE

- BINGEFORES, S. (1957). Studies on breeding red clover for resistance to stem nematodes, *Vaxtodlong*, 8 : 123.

EFFECT OF ROOT-KNOT NEMATODE, *MELOIDOGYNE* *INCOGNITA* ON FUSARIUM WILT OF FRENCH BEANS*

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An experiment was set up to study the role of *Meloidogyne incognita* and wilt fungus, *Fusarium oxysporum f. solani* singly or in different combinations in causing wilt disease complex in french beans.

The wilt fungus was grown on potato dextrose agar medium for 8 days at 25°C and 5 discs of 7 mm diameter were used as inoculum for each plant. Freshly hatched second stage larvae of *M. incognita* were used for inoculation at 2000 larvae per plant. The seedlings were raised singly by sowing surface sterilized french bean seeds (var. Premier) in 20 cm earthen pots containing sterilized soil. Ten day old seedlings were used for inoculation. Treatments included were :— nematode alone (N), fungus alone (F), nematode and fungus simultaneously (N+F), nematode first and fungus 10 days later (N→F), fungus first and nematode 10 days later (F→N) and control (C) (without nematode and fungus). Each treatment was replicated 10 times. Observations on plant growth, root-knot index, root rot index and wilting were recorded 30 days after first inoculation. The root-knot index was recorded on 1 to 5 scale. The relative damage by the fungus was determined by scoring the extent of disease on a scale ranging from 0 (no xylem necrosis) to 5 (plant dead).

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