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NOTE BREVI - SHORT COMMUNICATIONS

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RESISTANCE OF SOME PLANT CULTIVARS TO ROOT-KNOT NEMATODES, *MELOIDOGYNE* SPP.

by
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A series of glasshouse tests were undertaken to evaluate the resistance of some Leguminosae, Graminae, Umbelliferae and tomato cultivars to *Meloidogyne arenaria* (Neal) Chitw. (race 1), *M. incognita* (Kofoid *et* White) Chitw. (races 2, 3 and 4) and *M. javanica* (Treub) Chitw. The nematode races were identified by the differential host test (Taylor and Sasser, 1978). The nematode inocula were obtained from single egg mass cultures maintained on tomato (*Lycopersicon esculentum* Mill.) cv. Pritchard. Each test consisted of two seedlings of each plant type or cultivar planted in 20 cm diameter clay pots containing autoclaved sandy loam soil, to each of which was added the nematode inoculum of 5000 eggs in 10 ml of water after planting. Each treatment was replicated 6 times.

Eight weeks after the nematode inoculation the experiment was terminated. The plants were carefully removed from the pots, the roots washed free of soil and immersed in aqueous phloxine B (0.15 g/l water) to stain the egg masses in the roots. Galls and egg masses were estimated according to the following scale: 0 = 0; 1 = 1-2; 2 = 3-10; 3 = 11-30; 4 = 31-100; 5 = more than 100 galls or egg masses similar to the methods of Hadisoeganda and Sasser (1982). Plants rated 0-2 were categorised as resistant (R) to the nematodes, 2.1-3.9 as moderately susceptible (MS) and 4 or greater as susceptible (S).

The results of the tests are given in Tables I-III. Among the Leguminosae (Table I) the common bean cv. Mengatot was resistant to *M. arenaria, M. incognita* race 3 and *M. javanica*; cowpea cv.

Table I - *Reactions of some leguminous cultivars to the root-knot nematodes,* Meloidogyne arenaria *(MA) Race 1,* M. incognita *(MI) (Races 2, 3 and 4)and* M. javanica *(MJ).*

Plant cultivar	Root-knot nematodes				
	MA	MI_2	MI_3	MI_4	MJ
Asparagus bean (*Vigna sesquipedalis* Wight)					
Metrawi	R	S	R	R	S
Broad bean (*Vicia faba* L.)					
Giza 1	S	S	S	S	S
Giza 2	S	S	S	S	S
Giza 3	S	S	S	S	MS
Giza 4	S	MS	S	S	S
Clover (*Trifolium alexandrinum* L.)					
Baladi	S	R	S	S	MS
Common bean (*Phaseolus vulgaris* L.) Berbouni	S	MS	MS	S	S
Contender	S	MS	S	S	S
Mengatot	R	S	R	S	R
Swez Blane	S	S	S	S	S
Cowpea (*Vigna sinensis* Endl)					
Azmerli	MS	S	R	S	MS
Fetryat	S	S	MS	S	MS
Fenugreek (*Trigonella foenum-graecum* L.)					
Baladi	R	S	MS	S	R
Garden Pea (*Pisum sativum* L.)					
Little Marvel	S	MS	S	MS	S
Lincoln	S	MS	S	S	S
Perfection	S	R	S	MS	MS
Lima bean (*Phaseolus limensis* L.)					
Burpees Bush	R	R	R	S	R
Lupin (*Lupinus termis* L.) Baladi	S	S	S	S	R
Sieva bean (*Phaseolus lunatus* L.)					
Henderson Bush	R	R	R	MS	R

Baladi: Local Egyptian cultivar.

Azmerli was resistant to *M. incognita* race 3 and garden pea cv. Perfection was resistant to *M. incognita* race 2. Clover and lupin were susceptible to all nematode populations except that clover was resistant to *M. incognita* race 2 and lupin was resistant to *M. javanica.* Fenugreek

Table II - *Reactions of some corn and rice cultivars to the root-knot nematodes,* Meloidogyne arenaria *(MA) Race 1,* M. incognita *(MI) (Races 2, 3 and 4) and* M. javanica *(MJ).*

Plant cultivar	Root-knot nematodes				
	MA	MI_2	MI_3	MI_4	MJ
Corn (*Zea mays* L.)					
Alexandria	S	S	S	S	S
Alex x Opaque	S	S	S	S	S
DC 186	S	S	S	S	S
Frensh	S	S	S	S	S
Giza 2	S	S	S	S	S
Giza 4	S	S	S	S	S
Pioner 514	S	S	S	S	S
Pop corn	S	S	S	S	S
Sabaeny	S	S	S	S	S
VC 80	S	S	S	S	S
X 5505	S	S	S	S	S
Rice (*Oryza sativa* L.)					
A 95	MS	MS	R	MS	R
Giza 171	MS	MS	R	MS	R
Giza 172	MS	MS	R	MS	R
I R 28	R	R	R	R	R
I R 459	R	R	R	R	R
Japonica 47	MS	MS	R	MS	R
P 24	R	R	R	R	R

was resistant to *M. arenaria* and *M. javanica,* whereas asparagus bean cv. Metrawi was resistant to *M. arenaria* and *M. incognita* races 3 and 4. Lima bean cv. Burpees Bush and sieva bean cv. Henderson Bush were resistant to all nematodes except *M. incognita* race 4.

All corn cultivars tested (Table II) were susceptible to the five nematode populations. Rice cvs. P24, IR 28 and IR 459 were resistant to these nematodes, whereas cvs. A 95, Giza 171, Giza 172 and Japonica 47 were resistant to *M. incognita* race 3 and *M. javanica* and moderately susceptible to the other three populations.

The umbelliferous plant cultivars tested (Table III) were susceptible to all nematode populations except common fennel which was resistant to *M. arenaria, M. incognita* race 3 and *M. javanica.* Tomato cvs. CPC, Prichard and VF-270 were susceptible to the five populations while AMEX-VFN, Monita, Patriot, VFN-Bush and VFN-8 were resistant.

Table III - *Reactions of some umbelliferous and tomato cultivars to the root-knot nematodes,* Meloidogyne arenaria *(MA) Race 1,* M. incognita *(MI) (Races 2, 3 and 4) and* M. javanica *(MJ).*

Plant cultivar	Root-knot nematodes				
	MA	MI_2	MI_3	MI_4	MJ
Anise (*Pimpinella anisum* L.) Baladi	MS	S	S	S	MS
Carrot (*Daucus carota* L.)					
Red Cored Chantenay	S	S	S	S	S
Baladi	S	S	MS	S	S
Celery (*Apium graveolens* L.) French breakfast	MS	S	S	S	S
Common caraway (*Carum caravi* L.) Baladi	MS	S	S	S	S
Common fennel (*Foeniculum vulgare* Hill) Baladi	R	MS	R	MS	R
Coriander (*Coriandrum sativum* L.) Baladi	MS	MS	S	MS	S
Dill (*Anethum graveolens* L.) Baladi	MS	S	S	S	MS
Parsley (*Petroselinum sativum* Hoffm) Baladi	MS	MS	MS	MS	MS
Tomato (*Lycopersicon esculentum* Mill.)					
AMEX-VFN	R	R	R	R	R
CPC	S	S	S	S	S
Monita	R	R	R	R	R
Patriot	R	R	R	R	R
Prichard	S	S	S	S	S
VFN-Bush	R	R	R	R	R
VFN-8	R	R	R	R	R
VF-270	S	S	S	S	S

Baladi: Local Egyptian cultivar.

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