

Durable resistance against *Meloidogyne* spp. possible for italian ryegrass?

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The variation in resistance to *Meloidogyne chitwoodi* and *M. fallax* in italian ryegrass has been studied in order to breed more resistant ryegrass varieties. Italian ryegrass plants of several seedling populations were inoculated in 2001 with a mix of *M. chitwoodi* or a mix of *M. fallax* isolates. Plants used for *M. chitwoodi* inoculation were not the same clones as used for *M. fallax* inoculation. The number of egg masses (EM) on the roots was counted. The results are presented as the average and (minimum–maximum) EM per plant below. This first test shows variation in resistance levels of populations. Even within the populations there is considerable variation in EM formation per plant. Results for *M. chitwoodi* correspond to some extent to those for *M. fallax*.

Selected clones which formed few egg masses after inoculation with *M. fallax* were subsequently inoculated with a mix of *M. chitwoodi* isolates in 2002. Again the number of egg masses (EM) per plant was counted. Some results are presented in the table below.

Conclusion

There is a lot of variation within and between seedling populations in resistance against *M. chitwoodi* and *M. fallax*. Populations of italian ryegrass generally consist of a mixture of susceptible, intermediate and resistant plants. By selecting the more resistant plants within several populations it is possible to breed new varieties with improved resistance to *M. chitwoodi* and *M. fallax*.

It. ryegrass population	<i>M. chitwoodi</i> EM / plant	<i>M. fallax</i> EM / plant
A	2 (0- 8)	4 (0-14)
B	7 (0-58)	21 (0-67)
C	6 (0-43)	21 (2-72)
D	7 (0-67)	22 (0-91)
E	7 (0-30)	11 (1-73)
F	13 (1-59)	17 (1-59)
G	13 (0-43)	41 (1-91)
H	13 (0-59)	28 (0-124)
I	22 (1-57)	22 (2-44)
J	29 (1-65)	22 (1-109)
K	31 (0-85)	38 (3-104)
Mean	14	22

Population H clone nr.	<i>M. fallax</i> EM / pl.	<i>M. chitwoodi</i> EM / pl.	<i>M. chitwoodi</i> log10 (EM)
H-63	4	0.5	0
H-58	0	3.3	0.4
H-60	1	3.5	0.4
H-66	5	5	0.5
H-59	0	4.3	0.6
H-64	4	5	0.7
H-62	3	9.3	0.8
H-65	4	10	0.8
H-57	0	14.5	1
c.v.		48.9	33.2
<i>Isd (0.05)</i>		12.3	0.6
<i>av.100=</i>	2.3	8.7	0.6

