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REACTION OF CITRUS AND NONCITRUS ROOTSTOCKS TO *TYLENCHULUS SEMIPENETRANS* (1)

by

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Two biotypes of *Tylenchulus semipenetrans* Cobb obtained in Italy from olive (*Olea europaea* L.) and *Citrus* sp. (Inserra and Vovlas, 1978) were classified as the « Citrus biotype » and the « Mediterranean biotype » respectively (Inserra *et al.*, 1980) The « Mediterranean biotype » reproduces on *Citrus* spp., and ' Troyer ' Citrange [*C. sinensis* Osb. x *Poncirus trifoliata* (L.) Raf.], but not on citrumelo (*C. paradisi* Macf. x *P. trifoliata*), *P. trifoliata* selections or olive (Lamberti *et al.*, 1976). This note reports the reaction of several citrus and noncitrus rootstocks to a Sicilian populations of *T. semipenetrans.*

MATERIALS AND METHODS

The following rootstocks were used: four *Citrus* selections, *C. macrophylla* Wester, Ichang lemon [*C. ichangensis* Swing. x *C. grandis* (L.) Osb. ?), sour orange (*C. aurantium* L.), volkamer lemon (*C. volkameriana* Ten. *et* Pasq.); three trifoliate orange (*P. trifoliata*) selections, ' Argentina ', ' Rubidoux ', and ' Serra '; four hybrids ' Carrizo ' and ' Troyer ' citrange, ' Swingle ' citrumelo, and ' Siamelo ' (*C. reticulata* Blanco x *C. paradisi*?), and *Severinia buxifolia* (Poir.) Ten. Six-month-old seedlings were transplanted into five bins (2m x 2m x 1.50 m) containing a 1:1 mixture of volcanic sand and peat

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moss infested with O or 10 2nd stage *T. semipenetrans* juveniles and males per ml of soil. Two seedlings of each rootstock were planted in each of the bins providing 10 replicates of each treatment. The plants were grown outdoor and received normal cultural treatment. Fourteen months after transplanting, the seedlings were harvested and active juveniles and males were extracted from about 4 g of feeder roots by root incubation. Mature females were removed by comminuting roots for 10 sec in a blender, collected on a 45 µm sieve and counted. The number of nematodes per g of moist root was recorded.

RESULTS AND DISCUSSION

Highest numbers of the Sicilian population of *T. semipenetrans* were from *Citrus* spp., Carrizo and Troyer citrange and Siamelo. Numbers were significantly ($P = 0.05$) lower on Swingle citrumelo, the trifoliate orange selections and *S. buxifolia* (Table I).

The host range of this population appears to be similar to that reported for the « Mediterranean biotype » (Lamberti, 1976), confir-

Table I - *Numbers of a Sicilian population of* Tylenchulus semipenetrans *extracted from citrus and noncitrus rootstocks, after 14 months.*

Selection	Mean number of 2^0 juveniles and males/g root	Mean number of females/g root
Citrus macrophylla	403 b	213 b
Ichang lemon	175 e	201 bc
Sour orange	308 bcd	161 bc
Volkamer lemon	507 a	324 a
Carrizo citrange	345 bc	153 bc
Troyer citrange	270 cd	149 bc
Siamelo	335 bcd	199 bc
Swingle citrumelo	35 f	15 d
Trifoliate orange		
Argentina	39 f	1 d
Rubidoux	69 f	3 d
Serra	45 f	1 d
Severinia buxifolia	16 f	1 d

ming the wide distribution of this biotype in Italian citrus growing areas (Inserra *et al.*, 1980).

The number of juvenile nematodes from Ichang lemon compared to other citrus rootstocks was significantly ($P = 0.05$) lower, which indicated a lower reproductive rate on this rootstock even though the female density was no different than from the other *Citrus* selections (Table I). Among the hybrids, Carrizo, Troyer and Siamelo were susceptible while Swingle citrumelo was resistant to the parasite, as also reported by O'Bannon and Ford (1977). Serra, a new selection of trifoliate orange, used in rootstock experiments in Italy (Russo, 1973), and not previously tested was also highly resistant.

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