

Short communication

Neth. J. Pl. Path. 76 (1970) 329–330

Some observations on retention of tobacco rattle virus in nematodes

H. A. VAN HOOF

Institute of Phytopathological Research, Wageningen

Accepted 7 August 1970

In 1964 van Hoof recorded retention of tobacco rattle virus (TRV) in *Trichodorus* during 10 months. The present communication reports that TRV may be carried by nematodes for periods longer than that.

Soil containing large numbers of *Xiphinema diversicaudatum*, *Trichodorus pachydermus*, *T. similis* and other species of nematodes, was collected from a field site, put in a polythene bag and placed in a dark storage room on 3 February 1967. In this room the temperature did not drop below 4°C in winter and although no cooling was applied did not exceed 20°C in summer. The population of *X. diversicaudatum* in this soil appeared to be infected with *Arabidopsis* mosaic virus (AMV). During storage no weed growth was observed. On 13 January 1969, we tested the infectivity of the soil by filling six one-liter pots with it, and planting them with *Nicotiana tabacum* 'White Burley'. AMV was not detected at this time but all tobacco plants became infected with TRV. Since two species of *Trichodorus* were present, we elutriated males of *T. pachydermus* and of *T. similis*. Using *N. tabacum* 'White Burley' as test plants, both species could be shown to carry TRV.

A year later, on 13 March 1970, the stored soil still contained many *Trichodorus* and *Xiphinema*. This time other nematode species were scarce. Elutriated specimens of *X. diversicaudatum* did not infect test plants with AMV. Of *T. similis* 20 males could be elutriated which did not transmit TRV. Males of *T. pachydermus* were not observed. Therefore females and larvae of *Trichodorus* (which cannot be distinguished as to species) were used in an infectivity test. To each of seven pots with *N. tabacum* 'White Burley' 30 individuals were added. In one pot the tobacco plants became infected with TRV, showing that after a storage period of three years, without access to plant roots, *Trichodorus* still transmits TRV.

Samenvatting

Waarnemingen over de periode gedurende welke nematoden het vermogen tot overdracht van het tabaksratelvirus behouden

Grond die veel *Xiphinema diversicaudatum*, *Trichodorus pachydermus* en *T. similis* bevatte werd op 3 februari 1967 verzameld. *X. diversicaudatum* was besmet met *Arabis*-mozaïekvirus (AMV) en de *Trichodorus*-soorten met het tabaksratelvirus (TRV). Twee jaar later bleek *X. diversicaudatum* niet meer infectieus; de beide *Trichodorus*-soorten brachten echter wel het TRV over. Drie jaar na bewaring werd weer geen besmetting met AMV geconstateerd; met vrouwtjes en larven van *Trichodorus* werd echter nog steeds TRV overgebracht.

References

Hoof, H. A. van, 1964. Serial transmission of rattle virus by a single male of *Trichodorus pachydermus* Seinhorst. *Nematologica* 10: 141-144.