

SHORT COMMUNICATIONS

DOES WHEAT MOSAIC VIRUS BELONG TO THE TOBACCO RATTLE VIRUS GROUP?¹

Behoort tarwemozaïekvirus tot de ratelvirussen?

H. A. VAN HOOFF

Institute of Phytopathological Research (I.P.O.), Wageningen

The occurrence of wheat mosaic virus (WMV) in Italy was first reported by GRANCINI in 1959. The particle length observed in GRANCINI's isolate was 300 m μ (DIJKSTRA & GRANCINI, 1960). In a subsequent investigation DIJKSTRA (unpublished) noted a peak at 150 m μ in the particle length distribution.

An American isolate of WMV was studied by BRANDES *et al.* (1964) who found two peaks in the particle length distribution, namely at 160 m μ and 300 m μ .

Hence the Italian isolate and the American isolate of WMV have the same particle lengths. On the basis of their data BRANDES *et al.* classified WMV in the group of tobacco rattle virus (TRV). Since all viruses of the TRV-group have *Trichodorus* as vector it seemed desirable to establish whether *Trichodorus* is found in Italy in fields where WMV occurs. It may be noted in this connection that MCKINNEY (1959), working with wheat plants grown in water culture, demonstrated the existence of a WMV vector not belonging to the nematodes.

The nematode population was studied in a number of fields where symptoms of WMV occurred in wheat, viz. in the neighbourhood of Bergamo and Brescia and near Candia (N.E. of Torino). Here, however, no *Trichodorus* species were found. The fields were situated on the edge of the Po basin where the soil is rather old and consists of heavy clay where *Trichodorus* normally does not occur. In eleven places a pH-KCl was found varying from 6.6 to 7.5, the average being 7.2.

It would appear incorrect to classify WMV in the TRV-group solely on the basis of particle lengths; viruses of this group are characterised not only by the occurrence of the two particle lengths, but also by their vector (invariably of the genus *Trichodorus*), their serological affinities and host plant reactions (VAN HOOFF, MAAT & SEINHORST, in press).

SAMENVATTING

Elektronenmicroscopische opnamen tonen aan, dat tarwemozaïekvirus (WMV) evenals het ratelvirus deeltjes van twee lengten bezit (BRANDES *et al.*, 1964); DIJKSTRA & GRANCINI, 1960). Deze eigenschap alleen is niet kenmerkend voor de virussen uit de ratelvirusgroep. Alle virussen uit deze groep worden nl. door nematoden uit het geslacht *Trichodorus* overgebracht. Dit blijkt met WMV niet het geval te zijn. Het is daarom voornamelijk onjuist dit virus in de groep der ratelvirussen onder te brengen.

¹ Accepted for publication 12 April, 1966.

REFERENCES

- BRANDES, J., M. R. PHILIPPE & H. H. THORNBERRY, – 1964. Electron microscopy of particles associated with soil-borne wheat mosaic. *Phytopath. Z.* 50: 181–190.
- DIJKSTRA, J. & P. GRANCINI, – 1960. Electron microscopical investigations of mosaic diseased wheat plants found in Italy. *Tijdschr. PlZiekt.* 66: 301–304.
- GRANCINI, P., – 1959. Una malattia del frumento che è probabilmente una virosi. *Italia agric.* 96: 667–670.
- HOOF, H. A. VAN, D. Z. MAAT & J. W. SEINHORST, – 1966. Viruses of the tobacco rattle group in northern Italy: their vectors and serological relationships. *Neth. J. Pl. Path.*: in press.
- McKINNEY, H. H., – 1957. Maintenance of naturally infectious cultures of the soil-borne viruses of wheat mosaic and of oat mosaic, without the use of soil. *Pl. Dis. Repr.* 41: 254–255.