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Item 9 of the Provisional Agenda

PAPER ON DISTRIBUTION OF TOMATO SPOTTED WILT VIRUS*

Submitted by the United Kingdom

This paper contains background information for the Specialized Section to decide on whether or not to include the tomato spotted wilt virus in the Standard.

* The present document has been submitted after the official documentation deadline by the Trade and Timber Division due to resource constraints.

TOMATO SPOTTED WILT VIRUS

(Prepared By Dr S F Carnegie, UK delegation**)**

Host range

1. This virus has a very wide host range being able to infect around 900 species especially in Solanaceae, Compositae and Leguminosae. The principal crops known to be affected naturally by the virus are pea, groundnut, soyabean, tobacco, sweet pepper, pineapple and tomato.

Transmission and Distribution

2. The virus is transmitted by viruliferous thrips which acquire the virus during the larval stage and retain it throughout their life. TSWV is widely distributed. On potatoes, the disease is important on potatoes in localised areas, primarily where vector and virus occur in other crops which are growing nearby. The disease has been reported on potatoes in Argentina, Australia, Brazil, India and South Africa. In Portugal, an outbreak was associated with an infected tomato crop.

Symptomology and Seed Transmission

3. Infection produces necrotic spots on leaflets and stem necrosis. Generally only 1-2 stems may be affected. Tubers produced from affected stems are often few and deformed with necrotic damage to tuber flesh and only a proportion of the tubers will be infected. Infected tubers may fail to sprout or be reduced in vigour. Daughter plants from an infected tuber may contain only a small proportion of infected stems, some of which may produce symptoms. Yield loss is generally greater from current season spread than when the disease occurs as a result of seed potato transmission.

4. This virus is, therefore, somewhat similar to PMTV and TRV in that there will be a degree of self elimination during seed propagation: only a proportion of tubers will be infected; the number of tubers produced by infected plants will be reduced, deformed/necrotic tubers will be discarded at grading, only a proportion of stems from infected seed will have disease symptoms.

Conclusion

5. The very limited distribution of the virus and the nature of transmission of the virus, particularly from infected seed tubers means that there is no need to include, at present, a tolerance for this virus in UNECE Seed Potato Standard. This conclusion is supported by informal information from contacts in South America that certification schemes in this region do not apply a tolerance for this virus.

References

Smith I. M., Dunez J., Phillips D. H., Lelliot R. A. & Archer S. A. (1988). European Handbook of Plant Diseases. P 82. Blackwell Scientific Publications, Oxford, UK.

Jeffries C. (1988). FAO/IPGRI Technical Guidelines for the Safe Movement of Germplasm. No 19 Potato. Food and Agriculture Organisation of the United Nations, Rome/International Plant Genetic Resources Institute, Rome.