

Data Sheets on Quarantine Pests

Septoria lycopersici var. *malagutii***IDENTITY**

Name: *Septoria lycopersici* Spegazzini var. *malagutii* Ciccarone & Boerema

Taxonomic position: Fungi: Deuteromycetes (probable anamorph of Dothideales, Ascomycetes)

Common names: Septoria leafspot, annular leafspot (English)

Bayer computer code: SEPTLM

EPPO A1 list: No. 142

EU Annex designation: I/A1

HOSTS

Potatoes and other tuber-bearing *Solanum* spp. (in particular, *S. acaule*, *S. curtilobum*, *S. juzepczukii*, *S. wittmackii*). Potatoes are the major crop at risk in the EPPO region. Tomatoes can be infected by artificial inoculation, but *S. lycopersici* var. *malagutii* is less virulent to tomato than the specific tomato pathogen *S. lycopersici* var. *lycopersici*.

GEOGRAPHICAL DISTRIBUTION

EPPO region: Absent.

Central America and Caribbean: Reported present in Central America, but no details available.

South America: Andean regions of Bolivia, Ecuador (> 3000 m), Peru (3800-4200 m) and Venezuela (1600-2500 m).

EU: Absent.

Distribution map: See CMI (1982, No. 108).

BIOLOGY

The fungus survives in soil and plant debris (as pycnidia) and is dispersed by rain splash. So far, no teleomorph is known. Infection is limited to the leaves of potato plants. In Ecuador it occurs at temperatures of 8°C and high relative humidity. Special requirements for disease development seem to be relatively low temperatures and long periods with high humidity.

For further information, see Torres *et al.* (1970), Jimenez & French (1972), Carrera & Orellana (1978), Pignionica *et al.* (1978).

DETECTION AND IDENTIFICATION**Symptoms**

Small round leaf spots are formed, with pronounced concentric ridges on the upper side. Lesions are rather similar to those caused by *Alternaria solani*, but they are not depressed. They are typically brown rather than black (cf. *Phoma andina*; EPPO/CABI, 1996). With

the help of a good magnifying glass, the relatively large black pycnidia may be observed on the upper side of lesions. In a more advanced stage, leaves become scorched and susceptible to wind damage. Leaf tissues finally become necrotic and leaves are dropped.

Morphology

Pycnidia black, globose to subglobose, ostiolate, 100-150 µm diameter. Conidia hyaline, needle-like, usually 4-6 septate and 60-95 x 1.7 µm. This fungus differs from the tomato pathogen *S. lycopersici* var. *lycopersici* by its adaptation to *Solanum* spp., its preference for lower temperatures and its growth characteristics on agar media (e.g. brown discoloration of the media below the colonies).

Detection and inspection methods

The pycnidia of the fungus may be observed directly or by isolation and culture on standard agar media.

MEANS OF MOVEMENT AND DISPERSAL

Under natural conditions, the fungus is splash-dispersed only over short distances. In international trade, the fungus could be introduced on leaves of living material (e.g. germplasm material imported for breeding purposes), or on dead plant material (e.g. scientific specimens), or on crop residues or soil accompanying tubers.

PEST SIGNIFICANCE

Economic impact

In South America, the disease is reported to be serious, destroying up to 60% or more of the foliage, and leading to considerable yield losses. Cultivars vary from very susceptible to the disease to moderately resistant.

Control

Fungicides used for controlling *Phytophthora infestans* are mostly effective against *S. lycopersici* var. *malagutii* (but not the systemic anti-Oomycete compounds) and should be used from an early stage of infection to prevent secondary spread (Turkensteen, 1981). There are some differences in susceptibility between cultivars.

Phytosanitary risk

S. lycopersici var. *malagutii* is listed by EPPO as an A1 quarantine pest (OEPP/EPPO, 1984). Because the disease is apparently favoured by low temperature and high humidity, the fungus is a potentially dangerous potato pathogen for the cool and humid region of north-western Europe and for mountainous areas. Once introduced, it would be impossible to eradicate the pathogen because of its soil-borne character.

PHYTOSANITARY MEASURES

S. lycopersici var. *malagutii* belongs to the group of South American pests of potato which justifies strict post-entry quarantine procedures in the EPPO region, together with equivalent checks before export. Only material for scientific purposes should normally be imported from South America (OEPP/EPPO, 1990).

BIBLIOGRAPHY

Carrera, J.; Orellana, H. (1978) [Studies on potato leafspot due to *Septoria lycopersici* sub-group A in Ecuador]. *Fitopatologia* **13**, 51-57.

- CMI (1982) *Distribution Maps of Plant Diseases* No. 108 (edition 5). CAB International, Wallingford, UK.
- EPPO/CABI (1996) *Phoma andina*. In: *Quarantine pests for Europe*. 2nd edition (Ed. by Smith, I.M.; McNamara, D.G.; Scott, P.R.; Holderness, M.). CAB INTERNATIONAL, Wallingford, UK.
- Jimenez, A.T.; French, E.R. (1972) [Potato leafspot (*Septoria lycopersici* sub-group A)]. *Fitopatologia* **5**, 15-20.
- OEPP/EPPO (1984) Data sheets on quarantine organisms No. 142, *Septoria lycopersici* var. *malagutii*. *Bulletin OEPP/EPPO Bulletin* **14**, 49-53.
- OEPP/EPPO (1990) Specific quarantine requirements. *EPPO Technical Documents* No. 1008.
- Piglionica, V.; Malaguti, G.; Ciccarone, A.; Boerema, G.H. (1978) [Septoria disease of potato]. *Phytopathologia Mediterranea* **17**, 81-89.
- Torres, H.; French, E.R.; Nielsen, L.W. (1970) Potato diseases in Peru, 1965-1968. *Plant Disease Reporter* **54**, 315-318.
- Turkensteen, L.J. (1981) Septoria leaf spot. In: *Compendium of potato diseases* (Ed. by Hooker, W.J.), pp. 46-47. American Phytopathological Society, St. Paul, Minnesota, USA.