

Fusarium wilt of eggplant in the Netherlands

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Eggplant (*Solanum melongena* L.) is a promising glasshouse crop in the Netherlands with a rapid increase from 8 ha in 1974 to 26 ha in 1975.

The crop is known to be very susceptible to *Verticillium* wilt (Messiaen and Lafon, 1970) which also occurs in the Netherlands. In February 1975, one month after planting, wilt symptoms differing slightly from those caused by *Verticillium* species, were observed on one holding in the Westland glasshouse district. In July, 2% of the plants showed symptoms and in October, at the end of the growing season, about 3% of the plants were affected. *Fusarium oxysporum* Schlecht. ex Fr. was isolated from the brown discoloured xylem vessels of the stem. Identification of the isolates was confirmed by the Centraalbureau voor Schimmelcultures (CBS) at Baarn.

Cross inoculations were made on tomato plants (cv. Moneydor) and eggplants (cv. Claresse) with *F. oxysporum* f. sp. *lycopersici* and a *F. oxysporum* isolate from eggplant. The root systems of four-week-old seedlings were dipped in conidial suspensions of the pathogens grown in aerated liquid Czapek-Dox cultures. Subsequently the plants were grown in normal potting soil (Trio no. 17) with a pH of 5.8 in Wisconsin soil temperature tanks at 25°C.

F. oxysporum f. sp. *lycopersici* was pathogenic only on tomato and the other *F. oxysporum* isolate only on eggplant. The first symptoms on eggplants were observed eight days after inoculation. Initial symptoms were clearing of the veinlets, while the main veins remained green, and subsequent unilateral yellowing of the leaves. These early symptoms were quite distinct from *Verticillium* wilt. Subsequently, the lower and then the upper leaves wilted and died. At this stage the symptoms resembled those of *Verticillium* wilt. Xylem vessels in roots and stems showed a brown discolouration. The plants died within three weeks. Since *F. oxysporum* could be reisolated from the inoculated eggplants showing wilt symptoms, it was concluded that this fungus was the causal agent.

Wilting of eggplants caused by *F. oxysporum* has been found in Italy (Garofalo, 1956). In 1958 the disease was described in Japan by Matuo and Ishigami, who proposed the name *Fusarium oxysporum* Schlecht. f. sp. *melongenae* for the pathogen. It is a serious disease of in- and outdoor crops during the summer in Japan. A widely used control measure in enclosed environments is grafting on resistant rootstocks (Kishi, 1974). The disease is also found occasionally in Israel (Kenneth et al., 1970).

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Samenvatting

Fusarium verwelkingsziekte van aubergines in Nederland

In 1975 werd op een bedrijf in het Westland een verwelking in aubergines geconstateerd, waarbij het ziektebeeld enigszins afweek van dat veroorzaakt door *Verticillium*. De schimmel *Fusarium oxysporum* werd uit de bruinegekleurde vaten geïsoleerd. In inoculatieproeven tastte deze schimmel alleen aubergineplanten aan en geen tomatenplanten. Uit identificatie en uit deze gegevens kan worden geconcludeerd dat *F. oxysporum* Schlecht. f. sp. *melongenae* Matuo & Ishigami de veroorzaker van deze verwelking is. De eerste symptomen zijn het doorzichtig worden van de fijne nerven van de onderste bladeren. Vaak verwelkt aanvankelijk slechts een deel van het blad. Deze schimmelziekte is al langer bekend in Italië, Japan en Israël. In Japan is men overgegaan tot het enten op resistente onderstammen.

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