

## U.S. Department of Agriculture, Agricultural Research Service

### Systematic Mycology and Microbiology Laboratory - Nomenclature Fact Sheets

February 19, 2013

#### **Fusarium oxysporum f. melongenae**

*Fusarium oxysporum* was initially described by Matuo & Ishigami in 1958, from a *Solanum melongena* (eggplant, Solanaceae) plant suffering from a vascular wilt disease. In inoculation studies, the isolate was not able to infect other Solanaceae (including *Lycopersicon esculentum*, *Nicotiana tabacum*, *Solanum tuberosum*, *Capsicum annuum*). This fungus was recently reported from Turkey on *Solanum melongena*. (Altinok 2005). Reports of *Fusarium oxysporum* Schldl.:Fr. 1824 on the host plant *Solanum melongena* (presumably referring to this form) document a wider geographic distribution. Occurrence of *Fusarium oxysporum* on *Solanum melongena* has been reported in China (Tai 1979, Zhuang 2005), Korea (Cho & Shin 2004), the USSR (Richardson 1990), Fiji (Firman 1972), Kenya (Natrass 1961), Greece (Holevas 2000), and Italy (Richardson 1990). *Fusarium oxysporum* was reported on *Solanum melongena* var. *esculentum* in Florida (USA) by Alfieri (1984, 2000), but with no supporting references.

There is a high degree of variability within *Fusarium oxysporum*; it is generally regarded as a species complex (Baayen et al. 2000). Nearly one hundred *forma specialis* and forms of *Fusarium oxysporum* have been published. Molecular sequences including the intergenomic spacer of the ribosomal RNA gene (IGS) are available for *Fusarium oxysporum* f. *melongenae* from GenBank (under the name *Fusarium oxysporum* f. sp. *melongenae*) but an analysis of the relationship of f. *melongenae* to other forms and f. sp. within the *Fusarium oxysporum* complex has not yet been published.

#### **Nomenclature Report**

#### **Fusarium oxysporum f. melongenae Matuo & K. Ishig. 1958 (Ascomycetes, Hypocreales)**

**Notes:** Sometimes erroneously cited as a *forma specialis* (f. sp.), *Fusarium oxysporum* f. sp. *melongenae* (e.g. Booth 1971).

**Distribution:** Asia (Japan), Europe (Turkey).

**Substrate:** Vascular tissue.

**Disease Note:** Vascular wilt.

**Host:** *Solanum melongena* (eggplant, Solanaceae).

**Internal Note:** Reported by CPC as f. sp. with authors (Weimer) Snyder & Hansen. Snyder & Hansen amended the species concept of *F. oxysporum* and published many f. and f. sp. but not *melongae*.

#### **Supporting Literature:**

Booth, C. 1971. The Genus *Fusarium*. Commonwealth Mycological Institute, Kew, Surrey, England, 237 pages.

Matuo, T., and Ishigami, K. 1958. On the wilt of *Solanum melongena* L. and its causal fungus *Fusarium oxysporum* f. *melongenae* n. f. [English translation of Abstract from Japanese]. Ann. Phytopathol. Soc. Japan 23: 189-192.

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#### **Additional References:**

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Altinok, H.H. 2005. First report of fusarium wilt of eggplant caused by *Fusarium oxysporum* f. sp. *melongenae* in Turkey. Pl. Pathol. 54: 577.

Baayen, R. P., O'Donnell, K., Bonants, P.J.M., Cigelnik, E., Kroon, L.P.N.M., Roebroek, E.J.A., and Waalwijk, C. 2000. Gene geneologies and AFLP analyses in the *Fusarium oxysporum* complex identify monophyletic and nonmonophyletic formae speciales causing wilt and rot disease. Phytopath. 90(8) : 891.

Cho, W.D., and Shin, H.D., Eds. 2004. List of plant diseases in Korea. Fourth edition. Korean Society of Plant Pathology, 779 pages.

Firman, I.D. 1972. A list of fungi and plant parasitic bacteria, viruses and nematodes in Fiji. Phytopathol. Pap. 15 : 1-36.

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Richardson, M.J. 1990. An Annotated List of Seed-Borne Diseases. Fourth Edition. International Seed Testing Association, Zurich.

Tai, F.L. 1979. Sylloge Fungorum Sinicorum. Sci. Press, Acad. Sin., Peking, 1527 pages. Zhuang, W.-Y., Ed. 2005. Fungi of northwestern China. Mycotaxon, Ltd., Ithaca, NY, 430 pages.

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Written by Erica Cline, May 2006. Modified by Andrew Minnis, March 2008.