Mini data sheet on *Fusarium foetens*

Fusarium foetens was added to the EPPO A2 List in 2007. A full datasheet will be prepared, in the meantime you can view here the data which was previously available from the EPPO Alert List (added to the EPPO Alert List in 2005-deleted in 2007).

Fusarium foetens (a new disease of begonia)

Why	*Fusarium foetens* was first found and described as a new species of *Fusarium* (different from *F. begoniae*) attacking *Begonia* x *hiemalis* (Begonia elatior hybrids) in the Netherlands. This species was then reported in USA and Germany. The origin of this new disease is unknown. *F. foetens* was intercepted a few times on traded cuttings and pot plants in Europe, showing that it had the potential to be spread via trade.
Where	Netherlands (first found in 2000), Germany (first found in 2001, and occasionally since then in Sachsen-Anhalt, Schleswig-Holstein, Nordrhein-Westfalen, Niedersachsen), USA (in 2003 and 2004, it was found on *Begonia* x *hiemalis* in Connecticut).
On which plants	So far, *F. foetens* has only been found on cultivars of *Begonia* x *hiemalis*. Data is lacking on its host range, and on the susceptibility of *Begonia* x *hiemalis* cultivars and of other ornamental species. Preliminary studies have shown that *F. foetens* was not a pathogen of other ornamentals, such as *Saintpaulia ionantha*, Impatiens New Guinea hybrids and *Euphorbia pulcherrima*. When inoculated, *Cyclamen persicum* plants did not develop the disease but showed discoloured vessels from which the fungus could be re-isolated.
Damage	Diseased plants showed basal rot, vein yellowing and wilting. Large macroconidial masses formed by the fungus covered the base of collapsing begonias. In nurseries, the disease was reported as severe and mortality of the plants has been observed. More data is needed on the economic impact of this disease. Pictures can be viewed on Internet: http://www.gartenweb.de/thread.php?postid=3555&sid=e4dccdb2738abe44a3d9a2ba9de0a6ce#post3555
Dissemination	*F. foetens* produces several types of spores which ensure natural spread over short distance: microconidia (spread by water), macroconidia (spread by air and water) and chlamydospores (survival in soil). Over long distances, trade of infected plants or soil can spread the disease. So far, no teleomorph has been observed.
Pathway	Plants for planting (cuttings), pot plants, soil.
Possible risks	Begonias are valuable glasshouse crops in many European countries. Control of vascular diseases caused by *Fusarium* is difficult in practice (it relies on a combination of various methods, such as chemical control, disinfection and hygiene measures). So far, no data is available on the possible existence of tolerant/resistant cultivars. At an early stage of the disease, *F. foetens* is difficult to detect by visual inspection. Although the origin of *F. foetens* remains unknown (was it introduced from another part of the world?), it appears clearly that this pathogen can be moved through trade within Europe, and has the potential to establish in glasshouse conditions and damage begonia crops.
Source(s)	de Weerdt M, Zijlstra C, van Brouwershaven IR, van Leeuwen GCM, de Gruyter J, Kox LFF (2006) Molecular detection of *Fusarium foetens* in Begonia. *Journal of Phytopathology* **154**(11-12), 694-700. Elmer WH, Vossbrinck C, Geiser DM (2004) First report of a wilt disease of Hiemalis Begonias caused by *Fusarium foetens* in the United States. Plant Disease 88(11), p 1287. Schroers HJ, Baayen RP, Meffert JP, de Gruyter J, Hooftman M, O'Donnell K (2003) *Fusarium foetens*, a new species pathogenic to begonia elatior hybrids (*Begonia* x *hiemalis*) and the sister taxon of the *Fusarium oxysporum* species complex. Mycologia 96(2), 393-406. INTERNET APS website, USA. Elmer WH, Vossbrinck C, Geiser DM (2004) Fusarium wilt of Hiemalis begonia caused by *Fusarium foetens*. Northeastern Division Meeting Abstracts, 2004-10-06/08 - State College, Pennsylvania, US. http://www.apsnet.org/meetings/div/ne04abs.asp Landwirtschaftskammer Nordrhein Westfalen, Pflanzenschutzdienst, Germany. Powerpoint presentation by R. Schrage, Begonientag 2004-09-15, Hannover-Ahlem, Germany. http://www.pflanzenschutzdienst.de/pdf/be/Zier/Begonien_H_04.pdf

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