

Mini data sheet on *Discula destructiva*

Added in 2003 - Deleted in 2007

Reasons for deletion

The pest *Discula destructiva* is widespread in the EPPO region (at least in some areas, e.g. UK). In 2007, it was therefore removed from the EPPO Alert List.

Discula destructiva (dogwood anthracnose)

Why	<i>Discula destructiva</i> attracted out attention because it was recently found in Germany and Italy on <i>Cornus</i> species of American origin and is reported to cause serious problems in North America both in forests and amenity parks.
Where	Dogwood anthracnose was first reported in the USA in 1978 on flowering dogwoods (<i>Cornus florida</i>) in north-eastern States (New York and Connecticut). It was later realized that similar symptoms had also been observed on <i>C. nuttallii</i> on the west coast in 1976. In both cases, the causal agent was identified as <i>Discula destructiva</i> in 1991. The disease then spread rapidly and caused serious losses. Genetic studies have revealed a lack of diversity among isolates from both coasts. Considering the rapid spread around points of entry (New York and Seattle) and the severity of the disease, it is supposed that <i>D. destructiva</i> is a introduced pathogen. North America: Canada (British Columbia, Ontario), USA (Alabama, California, Delaware, Georgia, Idaho, Indiana, Kentucky, Maryland, Massachusetts, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, Washington, West Virginia). EPPO region: Germany (few outbreaks, first found in in 2002), Italy (first found in a nursery in Lombardia in 2003, on <i>C. florida</i> and <i>C. nuttallii</i>). Intercepted in 1995 by United Kingdom on imported <i>C. florida</i> from USA.
On which plants	<i>Cornus florida</i> (flowering dogwood) and <i>C. nuttallii</i> (Pacific dogwood). <i>C. kousa</i> is reported as relatively resistant. In Europe, the main species present are <i>C. mas</i> and <i>C. sanguinea</i> . <i>C. mas</i> is considered as resistant and there is no data for <i>C. sanguinea</i> .
Damage	Initial symptoms are small leaf spots with purple margin which then develop into large necrotic blotches. In many cases, infected mature leaves die prematurely. Sometimes, they remain attached to the stems after normal leaf fall. Infection expands from leaves to small twigs and then branches. Twig and branch dieback start in the lower crown (hence the original name of the disease 'lower branch dieback'). Numerous epicormic shoots often form at the basis of the trunk or on branches. <i>D. destructiva</i> causes cankers which can kill the tree. The fungus can kill trees of all sizes, but is more severe on young seedlings and understory forest dogwoods. In USA, consecutive years of infection have killed high proportions of woodland and ornamental dogwood populations. In 1984, a survey in a national park in Maryland showed that only 3% of dogwoods were free of anthracnose and 33% were dead. In 1988, 89 % trees were dead and all remaining trees were infected. Infection is favoured by cool, wet spring and autumn, but can occur throughout the growing season.
Dissemination	Short distance dispersal of conidia probably occurs via rain splashes and field dispersal by coccinellids (<i>Hippodamia convergens</i>) has been observed. Trade of infected plants ensures long distance dispersal.
Pathway	Plants for planting of <i>C. florida</i> and <i>C. nuttallii</i> from North America. The British interceptions and the findings in Germany demonstrate that this pathway exists.
Possible risks	Control of the disease is difficult, particularly in forests. In parks and gardens, cultural control (adequate watering and fertilization, pruning, removal of fallen leaves) and chemical control can be used. Data on the susceptibility of European <i>Cornus</i> species is lacking (in particular on <i>C. sanguinea</i> ; <i>C. mas</i> appears as broadly resistant). In Europe, the main hosts <i>C. florida</i> and <i>C. nuttallii</i> are not

naturally present in forests, but they are valuable amenity plants for parks and gardens. Therefore, *D. destructiva* could present a risk to the nursery industry.

Source(s) Daughtrey, M.L. ; Hibben, C.R. ; Britton, K.O. ; Windham, M.T. ; Redlin, S.C. (1996) Dogwood anthracnose. Understanding a disease new to North America. *Plant Disease*, 80(4), 349-358.

Stinzing, A. ; Lang, K.J. (2003) [Dogwood anthracnose. First detection of *Discula destructiva* on *Cornus florida* in Germany.] *Nachrichtenblatt des Deutschen Pflanzenschutzdienstes*, 55(1), p 1-5.

Tantardini, A., Calvi, M.; Cavagna, B.; Zhang, N.; Geiser, D. (2004) [First report in Italy of dogwood anthracnose on *Cornus florida* and *Cornus nuttallii* caused by *Discula destructiva*.] *Informatore Fitopatologico* no. 12, 44-47.

NPPO of Germany, 2003-09, 2003-12 and 2005-08.

Servizio Fitosanitario della Regione Lombardia (IT), 2004-01 and 2004-04.

INTERNET

Canadian Forest Service
L'anthracnose du cornouiller (*Discula destructiva*) se manifeste en Ontario. *Nouvelles Express*. Service Canadien des forêts. Centre de foresterie des Grands Lacs. Bulletin no .1.
http://www.glf.c.forestry.ca/frontline/print_html/bulletin1_f.html

Cornell University
Anthracnose of flowering dogwood *Discula destructiva*. Cornell Cooperative Extension.
<http://www.cce.cornell.edu/suffolk/grownet/tree-disease/anthdgwd.html>

USDA Forest Service. St. Paul Field Office. How to identify and control dogwood anthracnose
http://www.na.fs.fed.us/spfo/pubs/howtos/ht_dogwd/ht_dog.htm

USDA Forest Service. Southern Region. Dogwood anthracnose and its spread in the south by R. L. Anderson, J.L. Knighten, M. Windham, K. Langdon, F. Hedrix, R. Roncadori.
<http://fhpr8.srs.fs.fed.us/pubs/dogwood/r8-pr26/dwr8pr26.htm>

Wissenschaftszentrum Weihenstephan für Ernährung, Landnutzung und Umwelt, München, Germany
<http://www.forst.uni-muenchen.de/EXT/LST/BOTAN/LEHRE/PATHO/CORNUS/discula.htm>

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