U.S. Department of Agriculture, Agricultural Research Service

Systematic Mycology and Microbiology Laboratory - Nomenclature Fact Sheets

November 24, 2014

Phyllachora maydis Maubl. 1904.

Nomenclature

There are no nomenclatural or taxonomic synonyms in our records. The type of *P. maydis* was collected from *Zea mays* leaves in Mexico. The genus *Phyllachora* (lectotype *Phyllachora graminis* (Pers.:Fr.) Fuckel) (Hawksworth et al., 1995) is associated with the anamorph genus *Linochora* (Orton 1944).

Geographic Distribution and Plant Hosts

The only host recorded for *P. maydis* is *Zea mays* L. (Poaceae). *P. maydis* is the primary causal agent of tar spot of corn, but it often occurs in association with other fungi including *Monographella maydis* E. Müll. & Samuels 1984 (anamorph *Microdochium* sp.) (Mueller & Samuels 1984) and *Coniothyrium phyllachorae* Maubl. 1904 (Carson 1999). *P. maydis* can be common on cultivated corn under appropriate environmental conditions. During an outbreak in Puerto Rico in 1915, *P. maydis* was found in nearly every field examined (Dalbey 1917). Germination of ascospores and formation of appressoria are maximal from 10° to 20° C, and decrease above 25° C, which appears to explain its predominance at high elevations with a cool, humid climate (Dittrich et al. 1991). In susceptible corn plants, the entire leaf area can be blighted, but resistant lines have been developed (Ceballos & Deutsch 1992). Predominant modes of pathogen transmission are unknown (McGee 1990).

P. maydis has been recorded in Mexico, Cuba, Puerto Rico, the Virgin Islands, the Dominican Republic, Panama, Nicaragua, El Salvador, Venezuela, Costa Rica, Colombia, Guatemala, Honduras, and Brazil. In the secondary literature, reports of *P. maydis* in France (e.g., Stevenson 1975, McGee 1990) appear to refer to Maublanc's description of collections from Mexico, published in Bull. Soc. Mycol. France 20:72, 1904. Stevenson (1975) includes an ambiguous reference to the presence of*P. maydis* in the continental US (as 'Puerto Rico—Continental US), but this could not be substantiated in any of the references he listed. Initial reports of *Phyllachora graminis* in Puerto Rico were later discovered to refer to *P. maydis* (Stevenson 1975). In our database, there are currently no reports of *P. graminis* on *Zea mays*, so these misidentifications appear to have been corrected. *Phyllachora maydis* has been intercepted in New York NY (on shipments from Guatemala), Miami FL (on shipments from Guatemala), and San Diego CA (on shipments from Mexico). Excluding interceptions, there are no substantiated reports of*P. maydis* in the continental United States.

Phyllachora maydis Maubl. 1904 (Ascomycetes, Phyllachorales)

Distribution: North America, South America.

Disease Note: Tar spot.

Host: *Zea mays* (Poaceae).

Supporting Literature:

Parbery, D.G. 1967. Studies on graminicolous species of ***Phyllachora*** Nke. in Fckl. V. A taxonomic monograph. Austral. J. Bot. 15: 271-375.

Verified By: Drew On Oct 07, 2009

References

Carson, M.L. 1999. in D.G. White, ed., **Compendium of Corn Diseases**, 3rd Ed., APS Press, St. Paul MN USA, p. 25.

Ceballos, H. & Deutsch, J.A. 1992. Inheritance of resistance to tar spot complex in maize. **Phytopathology** 82:505-512.

Dalbrey, N. A. 1917. *Phyllachora* as the cause of a disease of corn, and a general consideration of the genus *Phyllachora*. **Trans. Ill. Acad. Sci**. 10:230-248.

Dittrich, U., Hock, J., and Kranz, J. 1991. Germination of *Phyllachora maydis* ascospores and conidia of *Monographella maydis*. **Crypt. Bot**. 2/3, 214-218.

Hawksworth, D.L., Kirk, P.M., Sutton, B.C., and Pegler, D.N. 1995. **Ainsworth & Bisby's dictionary of the fungi**. 8th Ed. CAB International.

McGee, D. 1990. **A Reference Source for Seed Technologists**. APS Press, St. Paul MN, 150 pp.

Mueller, E., and Samuels, G.J. 1984. *Monographella maydis* sp. nov. and its connection to the tar-spot disease of *Zea mays*. **Nova Hedwigia** 40:113-120.

Orton, C.R. 1944. Graminicolous species of Phyllachora in North America. **Mycologia** 36:18-53.

Parbery, D.G. 1967. Studies on graminicolous species of *Phyllachora* Nke. in Fckl. V. A taxonomic monograph. **Austral. J. Bot**. 15:271-375.

Stevenson, J. A. 1975. The fungi of Puerto Rico and the American Virgin Islands. **Contr. of Reed Herbarium** 23:200.

****

Report written by Erica Cline, 4/22/2005.