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FUSARIUM OXYSPORUM INFECTION OF CULTIVATED CONEFLOWERS *(ECHINACEA ANGUSTIFOLIA)*

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ABSTRACT

The narrow-leaf purple coneflower *Echinacea angustifolia* D.C. is a perennial composite native to the Central Great Plains. Because of its potential ornamental and pharmacological value, *Echinacea* is currently being brought into commercial production in South Dakota. A blight or wilt was observed in a field research plot on 1-to 3-year-old plants in the summers of 1993 and 1994. Up to 5% of plants growing in the wetter portion of the field showed symptoms. Affected plants became necrotic along leaf margins, followed by wilting and eventual death. Diseased plants were harvested and brought to the lab for analysis. Examination of roots and stems revealed darkening of the vascular and ground tissues. The pathogen was consistently isolated by plating 0.5 cm surface sterilized stem segments on lactic acid PDA for 3 to 5 days at room temperature. To complete Koch's postulates, a single hyphal tip of the pathogen was transferred to carnation leaf agar. Micro and macro conidia formed abundantly within 10 days and matched the description of *Fusarium oxysporum* Schlect. Two to three month old coneflower seedlings were inoculated with the isolated pathogen by placing six mycelial plugs directly on the roots of each plant, just below the soil surface. Infected seedlings showed typical diagnostic symptoms (30% of inoculated seedlings) within three weeks. Non-inoculated plants remained symptomless. *Fusarium oxysporum* was reisolated from the seedlings as above. This is the first report of *F. oxysporum* as a pathogen on *E. angustifolia*.