Disease Notes

Diseases Caused by Fungi and Fungus-Like Organisms

Outbreak of Septoria Canker Caused by *Sphaerulina musiva* on *Populus trichocarpa* in Eastern Oregon

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Branch and stem cankers were observed in a *Populus trichocarpa* L. plantation in late summer of 2018 near Boardman, Oregon, U.S.A. Stem cankers were flat faced with swollen margins, and the bark in the center of the cankers was black and depressed. Two hundred fifty-four out of 1,054 trees (25%) observed had cankers. Symptomatic stems and branches from several trees were brought to Oregon State University (OSU) for identification. Cankers were surface disinfested in 5% NaOCl for 2 min and rinsed twice in deionized H_2O for 2 min. Bark was removed from cankers, and pieces of wood at the margin between healthy and necrotic tissue were plated on KV8 medium amended with streptomycin sulfate at 100 mg/liter and chloramphenicol (Amresco) at 240 mg/liter (Dunnell and LeBoldus 2017). Eight sporulating colonies typical of *Sphaerulina musiva* (Peck) Quaedvlieg, Verkley, and Crous (syn. = *Septoria musiva* Peck) developed within 7 days of plating. *S. musiva* was identified by morphological characteristics (conidium size = 28 to 54 × 3.5 to 4 µm) and confirmed by comparing the sequence of the ITS region (accession nos. MN275180 to MN275187) to JX901814 with 99% identity. We tested 13 additional cankers collected from the plantation using *S. musiva*-specific primers (Abraham et al. 2018). Eight of the 13 samples were positive for *S. musiva* DNA. Dormant cuttings from three genotypes of *P. trichocarpa* (BESC-184, BESC-259, and BESC-388) were collected in a field planting near OSU. These were planted in cone-tainers in the greenhouse at OSU and grown to approximately 30 cm in height. Four replicates of each of the three genotypes were inoculated in the greenhouse with one Oregon isolate using a suspension of 1×10^6 conidia/ml. The entire tree was sprayed until runoff using a spray bottle (LeBoldus et al. 2010). The experimental design was a completely randomized design with four replicates of each genotype. Sterile deionized H_2O was sprayed on one control tree of each genotype. The mean number of resulting cankers were BESC-184 = 11, BESC-259 = 1, and BESC-388 = 13.75. The controls did not develop any cankers. The pathogen was successfully reisolated from one canker from each genotype. *S. musiva* can cause severely damaging leaf spot and stem canker diseases in the eastern and central United States and Canada (Bier 1939; Herath et al. 2016). Susceptible *Populus* species and hybrids develop cankers that can girdle and weaken stems, leading to breakage or tree death (Bier 1939). A previous survey of the region did not detect *S. musiva* (Newcombe et al. 1995). This outbreak of Septoria canker underscores the potential threat of this pathogen to *P. trichocarpa* in the Pacific Northwest, where it is a keystone species in riparian ecosystems.

References:

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***e*-Xtra**

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