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211. © Virulence of *Fusarium* root-disease pathogens (*Fusarium oxysporum* and *F. commune*) to Douglas-fir *Pseudotsuga menziesii*). Stewart, J. E., Abdo, Z., Dumroese, R., and Klopfenstein, N. B. *Phytopathology* 101:S171. 2011.

Virulence of Fusarium root-disease pathogens (*Fusarium oxysporum* and *F. commune*) to Douglas-fir (*Pseudotsuga menziesii*)

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Fusarium species can cause damping-off and root rot of young conifer seedlings, resulting in severe crop and economic losses in forest nurseries. Management of *Fusarium* disease in forest nurseries could be greatly enhanced by accurate identification of the *Fusarium* species, especially highly virulent isolates of *F. commune*. The primary objective of this study was to test the roles of *F. commune* and *F. oxysporum* in disease of Douglas-fir (*Pseudotsuga menziesii*) using unknown *Fusarium* isolates under in vitro and greenhouse conditions. *Fusarium* isolates were collected from healthy and diseased seedlings of Douglas-fir and western white pine (*Pinus monticola*) from a nursery in Idaho, U.S.A. In vitro and greenhouse virulence tests were completed on Douglas-fir germinants and seedlings. The virulence tests demonstrated that *F. commune* is a highly virulent pathogen, whereas *F. oxysporum* is mildly virulent to Douglas-fir germinants and seedlings. In addition, a species-specific diagnostic primer set was developed to detect and identify isolates of *F. commune*. With this information, nursery managers could more effectively deploy an appropriate disease-management strategy. This is the first report of direct evidence that *F. commune* can cause damping-off disease on Douglas-fir seedlings under greenhouse conditions.