



Virulence of a soil inhabiting fungus, *Ophiosphaerella korrae*, to rice

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A soil inhabiting fungus, *Ophiosphaerella korrae* (J. Walker & A.M. Sm. bis) Shoemaker & C.E. Babc. has been confirmed to be pathogenic to barley, durum wheat and bread wheat of the major crops (Hong et al., 2018; Tomioka et al., 2019ab). Foliage and spikes of the affected plants early blight with root rot and ripening disorder. In this study, we revealed virulence of the fungus to rice, which is also one of the major crops. When a rice cultivar (cv. Norin No. 22) was grown in pots in artificial climate chambers after being sowed with culture discs (6 mm in diameter) of the fungus (strains MAFF150117 and MAFF150118 from bread wheat and durum wheat, respectively) on synthetic nutrient agar (SNA) (1 disc per seed), growth delay and early foliage blight (including ripening disorder) with rotting of roots and stem bases occurred. Defect rates were 22% and 84% for the plants inoculated with strains MAFF150117 and MAFF150118, respectively. Control plants simultaneously treated with aseptic SNA discs had no symptom. The fungal strains were consistently isolated from all the inoculated plants, but not from healthy controls, demonstrating that the fungal strains were virulent to rice. Additionally, a decrease tendency of grain yield without symptom on foliage and roots was detected on a rice cultivar (cv. Koshihikari that is cv. Norin No. 1 × cv. Norin No. 22) inoculated with strain MAFF150117 in another pot experiment. *Ophiosphaerella korrae* is also known as a pathogen causing spring dead spot or necrotic ring spot of Bermudagrass (Wetzel et al., 1999ab; Camara et al., 2000; Iriarte et al., 2004; Gullino et al., 2007; Perry et al., 2010; Sasaki et al., 2010), Kentucky bluegrass (Wetzel et al., 1999a; Camara et al., 2000, 2001; Hayakawa et al., 2004; Wong et al., 2015), Louisiana grass (Wetzel et al., 1999a; Camara et al., 2000) and Zoysiagrass (Hayakawa et al., 2004; Tredway and Butler, 2007). We will investigate varietal difference against *O. korrae* as well as the fungal emergent ecology in the future.

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