Effects of temperature increase on aggressiveness behavior and fungicide sensitivity of the rice sheath blight pathogen (*Rhizoctonia solani* AG-1 IA)

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(Received: 13.10.2012; Accepted: 28.12.2014)

Abstract

Aggressiveness behavior and fungicide sensitivity of three populations of rice sheath blight pathogen, *Rhizoctonia solani* AG-1 IA, were assessed to temperature changing by disease rating on detached rice leaves and radial growth measurement on PDA plates amended with Azoxystrobin and Propiconazole at the 4 and 5 concentration levels (a.i.) respectively. Data analyses showed that no disease incidence was observed on 40, 60 and 20% of genotypes from Rasht, Tonekabon and Amol populations, respectively at 34 °C, whereas, all genotypes were able to grow on PDA medium at this temperature. Results from fungicides effectiveness at high temperature showed that generally, the EC₅₀ of propiconazole at 34 °C was 6.41 times greater when the its EC₅₀ was assessed at 26 °C, whereas, the ratio of azoxystrobin EC₅₀ at 34 °C to its EC₅₀ at 26 °C was 0.46 for all genotypes. Therefore, if global warming continues as expected, it is estimated that effectiveness of propiconazole to disease control and genetic diversity within this species may be reduced in rice fields of northern Iran.

Keywords: Azoxystrobin, Propiconazole, Rice sheath blight disease, *Rhizoctonia solani* AG-1 IA, Temperature change

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