ABSTRACT

Stem rust (*Puccinia graminis* f. sp. *tritici*) is one of the three rust diseases that infect triticale (*X. Triticosecale* Wittmack). Twenty-six triticale genotypes were evaluated for adult plant resistance (APR) to stem rust (*Sr*) infection in the greenhouse in a Randomized Complete Block Design (RCBD). *R-TR* (resistant –trace or minimal *uredinia*) reactions were observed on 6 genotypes EUT046, EUT59, EUT090, EUT093, 118 and EUT139 at adult plant stage. Reactions of 5*RMR* (5% disease severity with resistant-moderately resistant reactions) were observed on EUT001, EUT034, EUT035, EUT123 and EUT124. Four of the genotypes evaluated showed moderately resistant (*MR*) reactions with severity ranging from *10 MR* to 15 *MR*. Effects due to genotype, stage and genotype × stage interactions were significant ($p<0.001$) for length, width and area of spore. The mean length of spore increased from 0.75 mm at 17 days to 2.65 mm at 35 days after inoculation (DAI). The mean area of spore ranged from 0.27 to 1.33 mm^2 between the 17 and 35 DAI. The slowest development (0.003 mm^2 day^{-1}, 0.006 mm^2 day^{-1} and 0.009 mm^2 day^{-1}) of *Sr* spore was observed between 17-20 DAI for EUT035, EUT123 and EUT034, respectively. Triticale genotypes were also significantly ($p<0.001$) different for the latent period, AUDPC, number and weight of grains per spike. The mean latent period ranged from 10.00 days for EUT004 to 22.66 days for EUT001 and EUT087. Triticale genotypes that showed high level of APR were identified and can be used as sources of resistance in triticale breeding programs against stem rust.

Key words: Adult Plant Resistance, Stem rust, Resistant, Triticale genotypes.