

Distribution of Stem Rust (*Puccinia graminis* f. sp. *tritici*) Races in Ethiopia

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Abstract :

Wheat is one of the most important cereal crops of Ethiopia. Stem rust caused by *Puccinia graminis* f. sp. *tritici* is amongst the biotic factors which can cause up to 100% yield loss if susceptible cultivar grown and epidemic occurs. The highland of Ethiopia is considered as a hot spot for the development of stem rust diversity. This study was carried out to determine virulence diversity and race distribution of *P. graminis* f. sp. *tritici* in Ethiopia. One hundred wheat stem rust samples were collected in 2013 cropping season in the Oromia, Amhara and Tigray region. Of sample collected, 66 were viable and analyzed on to the 20 stem rust differentials lines. A total of 9 races were identified, which includes TTKSK, TTKTF, TTKTK, JRCQC, TKTTF, TTKSC, TRTTF, SRKSC and RRKSF. Race TTKSK was predominant and widely distributed in the country with 52% frequency except in Tigray region. The most virulent and new race, TKTTF which causes localized stem rust epidemic in Bale and Arsi was predominantly distributed in oromia region with 36.4% frequency value. Most of the genes possessed by the differentials were ineffective against one or more of the tested isolates except Sr24. Only stem rust resistance gene 24 was found to confer resistance to most of the races prevalent in Ethiopia. These, this gene could be used in combination with other genes through gene pyramiding in breeding for resistance to stem rust in Ethiopia.

Key Word :

Stem rust race; *Puccinia graminis* f. sp. *Tritici*; Stem rust resistance genes

Volume 3, Number 3, August 2015 , ISSN ISSN: 2329-8863