Sources of resistance to stem rust among selected wheat germplasm

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Abstract

Wheat (Triticum aestivum) is an important staple food crop contributing to food security and income generation among resource poor farmers. However, the crop is threatened by stem rust which pose a major constraint to wheat production in East Africa. This is because the Ug99 (TTKS) a virulent strain of the Puccinia graminis fsp tritici Eriks and Henns, has overcome major resistance genes; Sr31, Sr36 and Sr24 previously deployed against the stem rust. This has led to significant reduction in the wheat yields or sometimes to total crop failure under heavy epidemics. Thus, host resistance remains vital in combating the ug99 spread. A study carried out at Kenya Agricultural Research Institute (Njoro) in the field aimed at identifying sources of resistance to stem rust. This study revealed some promising wheat lines; R07F4-21258 and THELIN#2/TUKURU CGSS02Y00118S-099M-099Y-099M-16Y-OB which should constitute appropriate material for breeding programs. These promising lines have already been used in intercrosses and populations are being advanced into further generations for genetic studies and mapping of the resistance genes. The recurrent selection will be used to accumulate these resistance genes into high yielding wheat background in further breeding work to help avert further wheat yield losses in East Africa which is faced with acute malnutrition, famine and drought.