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DEVELOPMENT OF NEW BREAD WHEAT RESISTANT MUTANTS FOR UG99 RUST DISEASE

Wheat is an important world crop and continues to play a crucial role in the national food security of Yemen. Rusts are very deleterious diseases on wheat and include stem rust or black rust (*Puccinia graminis* f.sp. *Tritici*) of which a virulent strain developed known as Ug99. M3 mutant families derived from two bread wheat varieties namely Giza 186 and Saha 93 were planted (13 from Giza 186 and 10 from Saha 93) along with the parents in 2014 in two locations: Tihama, Yemen and Njoro, Kenya (a hot spot for the disease), for screening against Ug99 rust disease resistance. At Tihama results showed that two mutants of Giza 186 and four mutants of Saha 93 were resistant to Ug99 rust disease at both seedling and adult stages while the parents were resistant at seedling stage and susceptible at adult stage. At the Kenya location, the resistance of mutants was slightly different: the two mutants of Giza 186 were confirmed as being resistant to Ug99, but only two mutants of Saha 93, were resistant at both stages while the other two were resistant only at the seedling stage and were susceptible at the adult stage. Continuing evaluation of selected mutants at M4 stage for yield and agronomic performance resulted in selecting the Giza 186 G-M2- 2010-1-28, it has the highest yield among all tested mutants with a 3905 kg/ha followed by the G-M2- 2010-41- 52 (3729 kg/h) and the S-M2- 2010-16-12 (3526 kg/h). All three mutants significantly out yielded the local check Bouth-13 and the two parents, their yields ranged from 3,156 to 3,312 kg/ha. The new developed material can be used as breeding stock for the wheat breeding programme.

Country or International Organization

Agricultural Research & Extension Authority (AREA)- Yemen

Primary author: Mr SAIF, Abdulwahid (Agricultural Research & Extension Authority (AREA)- Yemen)

Presenter: Mr SAIF, Abdulwahid (Agricultural Research & Extension Authority (AREA)- Yemen)

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