



UG99 FACTSHEET

Updated: May 2010

- Ug99 is a single race of the fungal disease wheat stem rust (*Puccinia graminis* f. sp. *tritici*).
- First identified from samples collected in Uganda in 1999, hence the popular name Ug99. Scientifically, using North American nomenclature, the race is termed TTKSK.
- Wheat stem rust is historically the most feared and devastating disease affecting wheat. Under suitable conditions, yield losses of 70% or more are possible.
- Stem rust is highly mobile, spreading over large distances by wind or via accidental human transmission (infected clothing or plant material).
- For over 30 years, wheat stem rust has largely been under control primarily due to the widespread use of wheat cultivars carrying resistance to the disease.
- Ug99 is a special cause for concern because it has overcome the resistance in most wheat cultivars. An estimated 80-90% of all global wheat cultivars growing in farmer's fields are now susceptible to Ug99 or variants.
- Ug99 is the only known race of wheat stem rust that has virulence for an extremely important resistance gene - Sr31. In addition, Ug99 has virulence against most of the resistance genes of wheat origin and other resistance genes from related species.
- Six additional races have now been identified in the Ug99 lineage. These all have an identical DNA fingerprint to Ug99, but they show different virulence patterns.
- Additional key resistance genes have been defeated by these variants, notably; Sr24 (races TTKST and PTKST) and Sr36 (race TTTSK).
- Ug99 (race TTKSK) has spread throughout East Africa. In 2006 it was confirmed in Sudan and Yemen, and in 2007 Ug99 was confirmed in Iran.
- At present (May 2010), two important variants (races TTKST & TTTSK) are only known from Kenya. An additional important variant (race PTKST - having combined virulence to both Sr31 and Sr24) was confirmed in South Africa in 2009. In 2007, race TTKST (Ug99 Sr24 variant) caused epidemics in Kenya with estimated losses of 15-30%.
- Onward spread of all races in the Ug99 lineage is highly likely. International surveillance and monitoring efforts are being coordinated by FAO as part of the Borlaug Global Rust Initiative - an international coalition working to mitigate the threat of cereal rust diseases.