

## **Molecular characterization of *Puccinia graminis* f.sp. *tritici* isolates from East Africa**

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Molecular and genomic tools are currently being applied to understand the evolution of *Puccinia graminis* f.sp. *tritici* (Pgt) and develop diagnostic tools. Changes in race structure of Pgt are commonly observed as this rust adapts by overcoming resistance genes. A recent example of this, is the discovery of an isolate Ug99 in Uganda with virulence to *Sr31*. Simple sequence repeat (SSR) marker analysis indicated that Ug99 (race TTKS with virulence to *Sr31*, TTKS v*Sr31*) represents a distinct genetic lineage from the race clusters found in North America, Central Europe, Middle East, and North Africa. Comparison of isolates (race TTKS v*Sr31*) collected in Kenya in 2004 and 2006 indicate that these isolates are of the same genetic lineage as Ug99. Preliminary analysis of a new race with virulence to *Sr24* and *Sr31* (race TTKS v*Sr24*v*Sr31*) found in Kenya in 2006 indicate that TTKS v*Sr24*v*Sr31* represents an adaptation within Ug99 lineage rather than occurrence of a new genetic lineage.