

Overview of Groundnut Rosette Disease: Past, Present and Future.

C.M. DEOM*, Department of Plant Pathology, University of Georgia, Athens, GA 30602-7274; **D.K. OKELLO**, National Semi-Arid Resources Research Institute (NaSARRI), Serere, Uganda, P.O. Box 56

Groundnut rosette disease (GRD) is the most destructive viral disease and arguably the most important pathogen of groundnut in Sub-Saharan Africa (SSA). GRD is endemic to, and ubiquitous in, SSA and its off-shore islands. The disease causes significant economic losses, up to 100% yield losses if infection occurs before flowering and during severe epidemics, and routinely jeopardizes food security and livelihoods of groundnut farmers. Groundnut was introduced into Africa from Brazil by the Portuguese explorers in the 1600s. The disease was first reported on groundnut in Tanzania in 1907.

GRD results from an intimate interaction between groundnut rosette assistor virus (GRAV, member of the genus Enamovirus), groundnut rosette virus (GRV, member of the genus Umbravirus), and the satellite RNA (satRNA) of GRV. The disease is transmitted persistently by the aphid, *Aphis craccivora* Koch. (cowpea aphid or groundnut aphid). Host plant resistance is the most economical way of minimizing losses due to GRD. Presently, almost all cultivars developed in Uganda have resistance to GRD. Research efforts have endeavored to breed GRD resistance varieties that are high yielding, drought tolerant, have resistance to other pathogens and pests, have a short to medium maturity period, as well as other agronomic important traits. While GRD presently is endemic to SSA, the aphid vector is found worldwide. So, the potential for GRD to emerge and spread over groundnut growing regions of Asia and the Americas is a legitimate concern. Future research will better define the genetic architecture of GRD resistance that will allow marker assisted selection for rapid development of GRD resistant production packages. Better understanding the etiology and molecular pathology of the disease will also allow for a better understanding of GRD resistance and how to optimize disease control strategies.