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Incidence and Prevalence of Groundnut Diseases in Western Kenya

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Abstract

Incidences of diseases often limits groundnut (*Arachishypogaea* L.) production which is an important legume crop in Kenya. The crop can thrive under low soil moisture regimes and is well adapted to the hot, semi-arid conditions. The objective of the present study was to determine the prevalence and incidence of groundnut diseases, in western Kenya in order to formulate future sustainable solutions to farmers. Purposeful sampling was used to sample diseased plants from Homabay, Migori, Kisii, Siaya, Kakamega, Bungoma and Busia representing different agro-ecological zones where groundnuts are grown. A total of 250 farms were surveyed in two growing seasons. Disease incidence was determined in every farm while prevalence was calculated per County. *Fisher's* exact test was used to study associations between disease incidence and various seed qualities, cultivars grown and source of seed. The most prevalent disease observed was green rosette (84.6%), late leafspot (64.4%), early leafspot (49.3%) and chlorotic rosette (41.8%). Mosaic rosette, rusts, *Alternaria* leaf blight and web blotch were other diseases detected on groundnut. The mean incidence for early and late leafspot was 40.1% and 34.4%, respectively, while incidence for green, mosaic and chlorotic rosette was 24.4%, 28.7% and 18.8%, respectively. Diversity existed among groundnuts cultivars with the predominant seed types being large red, medium red and large brown. Improved cultivars were grown in 16.40% of sampled farms, having been introduced by ICRISAT and NGOs, while the rest comprised of local cultivars obtained informally. The *Fisher's* exact test showed no association between disease incidence and the cultivars grown. Further, there was no association between the County of origin and incidences of green rosette and chlorotic rosette. However, significant associations were detected between disease incidences and the County surveyed for early leafspot, late leafspot and mosaic rosette. Because of the varied groundnut diseases in western Kenya, there is need therefore for further research towards increasing production of groundnuts through breeding and good agronomic practices.

Key Words: Groundnut Rosette, Early Leafspot, Late Leafspot, Seed Type, Seed Source