

## Abstract

Diseases, pests, inappropriate agronomic practices and drought are the most important constraints to grain legumes production in Sub-Saharan Africa. Crop failures are frequent in the climatically marginal areas thus occasionally a critical mass of the population relies on relief food supplies. There is a need to develop and promote drought tolerant crops such as the green gram, *Vigna radiata* (L) Wilczek, that yield reasonably with little rainfall and are resistant to pests and diseases. Baseline field survey was carried out among smallholder farmers in Homa Bay and Busia Districts in Kenya and Magu District in Tanzania to establish the extent of green gram production in the Lake region. The survey was also intended to investigate green gram land races, common pests and diseases, as well as methods of pest and disease control. It emerged that green gram is a traditional food crop in the study areas and there are established land races/varieties of the crop. Pests and diseases varied in the study areas. The insects identified belonged to several families namely Calliphoridae, Coccinellidae, Scydmaenidae, Chalcididae, Formicidae, Aphididae. Other species identified are *Chrotogonus hemipterus*, *Catantops melanostictus* and *Taeniothrips sjostedti*. (For example, in Magu, bean flies, thrips, aphids, pod-sucking bugs and beetles were common while in Homa Bay and Busia the major pests were cutworms, white ants, bean flies and aphids.) The common green gram diseases reported were leaf curl, leaf spot, powdery mildew, blight, rust and pod rot. Bruchids and *Sitophilus* spp. were the most common storage pests. General wood ash, crushed fresh marigold stem and leaves were used to control field pests and diseases while sisal ash was used to control stored grain pests. Currently thirteen (13) land races were identified based on size, color and shape of the seeds. The land races planted in separate pilot plots to determine their performance with respect to yield, resistance to pest and diseases, and other growth factors of production like low inherent soil fertility and erratic precipitation revealed variation in germination rates, vegetative growth, flowering, pod set and maturity time. Observation on grains harvested from the ten land races yielded five more land races indicating that the land races in the study areas are heterozygous. It was concluded that green gram grown in all study areas exhibit varying characteristics and hence different varieties and that the crop was found to be infected with virus and fungi and hence prone to various diseases. The pests attacking the crop ranged from insect species to birds and mammals.