

Abstract

The ground rosette virus disease (GRD) is the most devastating disease of groundnuts and it is transmitted by aphids. Identification of methods of controlling the disease would improve groundnut productivity. A researcher managed field study was conducted in Siaya and Teso districts of Kenya (March-May 2007) for one season to assess the effects of management practices on aphid population and groundnut rosette disease (GRD) incidence on three groundnut varieties (ICGV-SM 90704, ICGV-12991, JL-24). Disease management strategies assessed included host resistance, trap crops, application of insecticide and rouging. The experimental design was randomized complete block design laid out as split plot and replicated thrice. Disease management strategies were allocated to main plots and varieties to subplots. Data on aphid population and GRD incidence was collected every two weeks and yield at the end of the season. Pesticide spray reduced aphid population and GRD incidence by 95% and 90%, respectively, compared to 55-73% and 51-72% where trap crops were used. Rouging infected plants reduced aphids and GRD incidence by 36% and 37%, respectively. Groundnut grain yield was highest and comparable where pesticides and trap crops were used but lowest where rouging (42%) and no control measures (28%) were applied. Groundnut varieties ICGV-SM 90704 and ICGV-12991 showed resistance to GRD. The highest yields were obtained from the varieties when aphid control measures were taken. Integrated management of GRD that combines host plant resistance and pest control increases yields and marginal returns.