Relationships between Agronomic Practices, Soil Chemical Characteristics and *Striga* Reproduction in Dryland Areas of Tanzania

Kudra Abdul1, 2, George N. Chemining’wa3 and Richard N. Onwonga1

1. Department of Land Resource Management and Agricultural Technology, University of Nairobi, Nairobi, Kenya
2. Department of Crop Science and Production, Sokoine University of Agriculture, Morogoro, Tanzania
3. Department of Plant Science and Crop Protection, University of Nairobi, Nairobi, Kenya

Received: June 6, 2012 / Published: October 20, 2012.

Abstract: The parasitic weed *Striga* poses a serious threat to cereal production in sub-Saharan Africa. For many years, technological packages for the control of this weed were proposed and implemented on farmers’ fields. A survey was carried out in farmers’ fields in 2010/2011 cropping season in selected dryland areas of Tanzania to: (a) determine the *Striga* plant counts, number of capsules/*Striga* plant and agronomic practices used by farmers to control *Striga*; and (b) evaluate the relationship between *Striga* reproduction, soil chemical characteristics and agronomic practices. Soil samples at 0-20 cm depth were collected from 20 different farmers’ fields. The soil samples were analyzed for pH, organic carbon, N, P and K. Results showed that there was low adoption of recommended *Striga* control methods. Regression analysis of agronomic practices and soil chemical characteristics revealed a positive improvement of soil N and organic carbon and reduction of soil P and K content as one shifted from sole planting to intercropping. The results showed that potassium was highly positively related to number of capsules/*Striga* plant. There was a reduction in the number of capsules/plant as one moved from sole planting to intercropping. Based on these findings, K in the *Striga* infested in soils positively influenced *Striga* reproduction and seed bank replenishment, hence high soil K levels may lead to high *Striga* incidence.

Key words: Parasitic weed, *Striga* reproduction, dryland, agronomic practices, soil P and K.