

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

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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.