

Pedological and soil fertility characteristics of striga infested soils under maize in Chunya and Iringa districts of Tanzania

By

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Abstract

Maize yields in both Iringa and Chunya districts have been reported to be low due to infestation with *Striga*. A study was therefore conducted to characterize *Striga* infested soils and assess their fertility status under maize production in 6 villages of Chunya and Iringa districts. The soils of Iringa were classified as Cambisols and those of Chunya as Arenosols. The results further showed that, the majority of the soils were of sand to loamy sand texture. Such soils are well drained with low water holding capacity, conditions that favour *Striga* germination. The fertility status was established through physical and chemical analyses of the soils. One hundred and four composite soil samples were collected from the two districts. Laboratory analysis showed that most of the soils were acidic with pH ranging from 4.13 to 7.74 and low to medium cation exchange capacity (CEC). Organic carbon was low with a range of 0.01 to 0.07% while total N values were also low ranging from 0.028 to 0.86%. Phosphorus was low with few samples indicating medium values. Exchangeable bases were generally low with most soils having saturation values of < 50%. Overall, the soils are of low fertility status. The low fertility status and the sandy texture are possibly the cause of high *Striga* infestation and low maize yields in the two districts. The soils are of low productivity requiring improvement of their organic matter content and application of inorganic fertilizers if improved maize yields are to be realized. It is further recommended that tillage practices that improve the soil physical conditions be adopted, not only for greater maize yields but also as one of the strategies to control the *Striga* weed. Key words: fertility, maize, soil, striga

Description

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