Assessment of Level, Extent and Factors Influencing *Striga* Infestation of Maize in the Dry Savannahs of Nigeria

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Abstract

Infestation of maize fields by *Striga* species constitute a major constraint to crop productivity in the savannahs of northern Nigeria. About 50 million ha out of about 93 million ha, have been reported to be already moderately or severely infested in the country leading to severe crop losses. In order to develop effective *Striga* management strategies, the relationships between *Striga* levels and other biophysical characteristics of the crop production environment need to be properly understood. This study assessed level and extent of infestation of maize fields by *Striga* in Bauchi and Kano States of the Nigerian dry savannahs. It also assessed the relationship between soil properties, *Striga* infestation and the yields of maize. A three-stage sampling technique was used to select communities and fields in targeted Local Government Areas in the two States.

The soils in the two States were generally of low fertility, characterised by low levels of total N, organic C, available P and exchangeable bases. In Kano State, *Striga* incidence ranged from 0 to 100 %. One hundred percent of the maize fields sampled in Bauchi State had Striga. In general, *Striga* population was more than twice higher in Bauchi State [3.1 plants m^{-2}] than in Kano State [1.4 plants m^{-2}]. There were differences in *Striga* population and severity of attacks between the States and between communities within States. In Kano State, the *Striga* population was negatively related to latitude, total N, and exchangeable K and was positively related to sand and silt. In Bauchi State, *Striga* was negatively related to clay, exchangeable K, and Ca, and was positively related to pH and latitude. In both states, the *Striga* population was negatively correlated with maize grain yield. Up to 75 % of the variations in maize grain yield in Kano State could be explained by *Striga* population and soil organic C. Management of *Striga* usually requires several measures, however, improving the levels of soil fertility should be the central component of any integrated *Striga* management approach.

Keywords: Grain yield, maize, soil parameters, *Striga*

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