FACTORS INFLUENCING THE DISTRIBUTION OF *STRIGA* SPECIES IN MAIZE-BASED CROPPING SYSTEMS IN KASAÏ ORIENTAL PROVINCE OF THE DEMOCRATIC REPUBLIC OF CONGO

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ABSTRACT

In the Democratic Republic of Congo (DRC), maize is the principle cereal and it is the second most important staple food after cassava. However, maize production has been reported to decrease over the years. For instance, maize production has decreased from 1,199,000 Metric Tonnes in 1999 to 1,156,410 Metric Tonnes in 2010 as a result of diseases, insects, and parasitic weeds especially *Striga* species. Despite their fields being infected by *Striga*, Congolese farmers have not adopted most of *Striga* management methods because most farmers are not aware of the impact *Striga* has on their crops and there is a mismatch between technologies and farmers' socio-economic and market access conditions. Also there is lack of information on the occurrence and distribution of *Striga* species i.e. the factors that enhance *Striga* population build-up and damage on maize are not known.

The main purpose of this study was to establish the extent of *Striga* species prevalence in Kasaï Oriental. This study involved a survey on the factors influencing the distribution of *Striga* species in maize-based farming systems in Kasaï Oriental. This study involved three objectives: 1) to establish the distribution of Striga species within maize-based cropping systems in the Kasaî Oriental province, 2) to determine the factors that influence Striga distribution in Kasaï Oriental province, and 3) to assess farmer's perception of striga damage on maize in Kasaï Oriental province. A baseline survey on ten selected maize farmers per site was done through a formal questionnaire on aspects of maize varieties grown, maize production; cropping systems, and routine crop management practices used with emphasis on farmer's perception of *Striga*. Thirty six (36) sites where surveyed and 4 fields where selected per site and GPS readings were taken for all of the 144 fields.

Two *Striga* species including *Striga asiatica* and *Striga hermonthica* were observed, with *S. asiatica* being more prevalent and widespread while *S. hermontica* was more restricted to Tchilenge district. There was more *Striga* in Kasai Oriental, which could be associated with poor soils, contaminated maize seeds, and varieties that are susceptible to *Striga*. The laboratory analyses revealed that the soil is poor in major nutrients such as Mg, Ca, P, K, C and N. This study revealed that *Striga* is a major production constraint in maize production leading to 45-100% yield loss. Despite their fields being infected by *Striga*, farmers are not aware of the exact impact it has on their crops and they have not yet been trained on *Striga*

management strategies. There is a need for the Congolese government to develop a strategy whereby farmers will be provided with knowledge on *Striga* infestation, *Striga* management strategies, clean seed (free of *Striga*), fertilizer and/or soft loans. The loans will enable farmers to access these inputs and therefore enhance the adoption of integrated *Striga* control methods on their fields. Further *Striga* surveys should be done in the entire DRC to generate a national map of *Striga* infestation and suggest a *Striga* management strategy for the whole country. Further research should be done to identify appropriate *Striga* management strategies in the DRC.