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Ecological niche modeling to predict effect of climate change on the geographic distribution of the legume flower thrips (*Megalurothrips sjostedti*) (Thysanoptera: Thripidae) in Africa

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Insect pests, biological invasions and climate change are considered to represent major threats to biodiversity, ecosystem functioning and agriculture. Deriving hypothesis of present and future potential distributions of insect pests and invasive species is becoming an important tool for predicting the spatial structure of potential threats. The legume flower thrips (LFT) *Megalurothrips sjostedtiis* a pest, infest especially legumes, causing up to 100% yield loss in cowpea in tropical Africa. No studies investigated potential areas of invasion for this species. The study proposes to estimate the climaticfavorable zones for the establishment of the LFT in Africa. Using present and future climatic data we projected the potential suitable areas in order to estimate the dynamics of invasion risk areas through time. Areas at risk under this scenario were assessed by comparing, using the spatial projections of current and future areas of climatic favourability of the LFT. Spatial hypothesis were generated with respect to the presence records both for present and future (2050). Occurrence data from literature usedto estimate the climatic favourability and geographic distribution. Climatic predictors from BIOCLIM and Maximum Entropy (MAXENT) used for modeling of species geographic distributions for ecological modelling. The results showed a higher suitability for the pest in eastern and west. The Maxent model's internal jackknife test of variable importance showed that high values for precipitation of wettest month, temperature annual range and maximum temperature of warmest month as well as precipitation of warmest quarters were the most important predictors of *M. sjostedti's* habitat distribution.

Biography

Andnet Bayleyegn Abtew has completed his MSc at the age of 29 years from Hawassa University, Ethiopia and currently he is a Joint doctoral student at Erasmus mundus (AgTraIn) from University of Montpelier SupAgro and University of Catania. He is doing his survey, Laboratory and Field experiment in Kenya at icipe under the Thrips IPM project for grain legume. He has published 2 papers in journals.

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