

ABSTRACT

Onion thrips, *Thrips tabaci* Lindeman, is the most destructive insect pest of the onion crop, *Allium cepa* L. worldwide. Both larvae and adults attack the onion crop at all stages of its growth, resulting in reduction of yield and quality. Despite the heavy losses incurred as a result of damage by the onion thrips, very little efforts have been made to develop an integrated pest management strategy for the control of the pest in many African countries. Field trials were conducted in four seasons at the Kenya Agricultural Research Institute (KARI) Mwea-Tebere farm in Kirinyaga District. Onion plants were planted periodically and thrips populations monitored weekly from onion plant samples and blue sticky traps for a full year under natural field conditions. The purpose of the trials was to assess the effect of weather on thrips population in onions with the aim of predicting thrips control requirements for a given climatic trend. Weather variables monitored included: rainfall, temperature, relative humidity and wind. Thrips occurred in the onion field and infested onions in all the crop seasons. However, there was significant ($P=0.05$) variation in thrips numbers between the crop seasons. Dry weather (30.3 mm rainfall) with moderately high temperatures (15.6-28.2°C) increased seasonal thrips numbers, while wet season (391mm rainfall) with moderately high relative humidity was negatively correlated with thrips numbers. Regression analysis (step-wise selection model) showed that minimum relative humidity was the only significant weather factor for predicting thrips infestation in the onion crop ($R^2=0.15$; $y = 60.342-0.1022x$). The results suggest that climatic trends can be used to determine the potential thrips control needs in onion production.