

Abstract

Mites infestations reduce yields in tea production worldwide. However, some tea cultivars are resistant/tolerant to mites attack. The resistance/susceptibility can also be influenced by abiotic factors. This study evaluated some new tea clones for mite resistance/susceptibility and influence of Environmental factors (weather parameters) on dynamics of mite infestations of Kenyan tea at different ecological zones, Kangaita, Kipkebe and Timbilil. Maximum population of mites was reported during March when maximum temperature, average rainfall and relative humidity ranges for the sites were 23.9-28.7°C, 27.7-50.1mm and 38.0-70.4% respectively. There was a sharp decline in mites population in April when average rainfall was high (398.4-514.4mm) which was accompanied by reduction in maximum temperature (18.8-27.5°C) and increase in relative humidity (44.0-82.2%). The minimum population density was found during August which was characterized by low maximum temperature (16.4-26.6°C), low average rainfall (4.8- 190.5mm) and high average relative humidity (46.0-80.9%). The mites infestation levels highly correlated with maximum temperatures in Kangaita ($r^2 = 0.801$), Kipkebe ($r^2 = 0.693$) and Timbilil ($r^2 = 0.744$). There were significant ($p \leq 0.05$) monthly variations in clonal mite infestations at all sites. Susceptible clones showed higher monthly mite infestations variations than the resistant/tolerant clones. Of the clones evaluated for the first time, eight new clones were identified as tolerant/resistant while two clones were susceptible to mites attack. Resistant/tolerant clones are recommended for commercial exploitation while mitigation strategies should be put in place in mites prone areas during hot seasons with high monthly temperatures and low humidity