Abstract

Spider mite is a major constraint in rose flower production. Though flower producers have not quantified the magnitude of the losses incurred, the quantity of the miticides used on their control is enormous. This experiment was designed to investigate the effect of UV spectrum through different poly-films on the occurrence of two spotted red spider mite a common rose flower pest. The study was carried out at Egerton University Horticulture Research and Teaching field. The experiment was split- split plot laid down in a Randomized Complete Block Design (RCBD) with polyfilms forming the main plot treatments. Two rose cultivars were tested for tolerance and calcium foliar feed was applied at four different concentration levels. Rose cultivars and calcium concentrations formed the sub and sub-sub plot treatments respectively. Poly-film samples were scanned through UV- 1800 shimadzu spectrophotometer to assess light transmission properties at different wavelengths. Data collection involved measuring of light transmission through Poly-films, the temperature and relative humidity in the tunnels was also monitored. The data was subjected to analysis of variance at 5% probability level and mean separation was performed using Tukey's Studentized Range (HSD) Test.Poly films modified the tunnel microclimate and this impact on prevalence and population of two spotted red spider mite. Mean temperature values of 41°C, 35.2°C and 32.8 °Cwere recorded under UV-A clear, IR 504 and UV-A 205/N poly films respectively. It was observedthat the number of spider mites increased with increase in temperature.A mean spider mite population of 5 mites/cm2 was recorded under the clear poly-film compared to 3 mites/cm2 under the UV-A 205/N. Changes in greenhouse microclimate influenced the population and prevalence of spider mite. Clear poly film that transmitted high light recorded high temperature and subsequently high number of mites.