

Field investigations were conducted at Mwea-Tebere Agricultural Research Station, situated in Central Province of Kenya, to evaluate the effects of the infestation of cotton by red spider mites, *Tetranychus* sp., on its growth and yield components. The results obtained revealed that mite damage adversely affected vegetative growth as measured by the amount of leaf and plant dry matter, number of leaves per plant, leaf surface area and mean size of leaves which were reduced by 67.07, 48.46, 68.18 and 60.37% respectively. In addition to these effects, it was estimated that seed cotton yields could be reduced by 46.93% per plant due to mite injury. Seed development was adversely affected through the reduction of their weight (seed index), oil content and viability by 9.30, 10.07 and 36.67%, respectively. Similarly, mite damage to cotton plants caused the reduction of lint weight (lint index) and lint ginning percentage by 15.42 and 4.5%, respectively.