

An evaluation of 17 chemicals was conducted in the field at Mwea-Tebere Agricultural Research Station to ascertain their efficacy against the red spider mites *Tetranychus* sp. attacking cotton in Eastern Kenya. The study became necessary owing to the inadequate control of red spider mites by the recommended acaricide, Dimethoate. Of the chemicals that performed well against the red spider mites, Kelthane, Akar, Morestan and Neoron were considered to be the most suitable replacements for Dimethoate because of their low levels of mammalian oral toxicity. Judged from the overall performance against the red spider mites, these acaricides were also about twice as effective as Dimethoate