

Abstract

Passionfruit (*Passiflora edulis* Sims) is an important fruit crop that is grown mainly by small scale farmers for nutrition, employment creation and income generation. Insect pests and diseases, high establishment costs, inadequate clean planting materials, drought and declining soil fertility are the constraints to improvement of passionfruit production in Kenya. Passionfruit growth is severely limited by viruses which are transmitted by aphids in a non-persistent manner. The study was conducted in 2008 and 2009 to investigate the effect of cultural methods on population densities of the aphid vectors. Field experiments were established in a randomized complete block design with four replicates in Kabete field station and Embu (four farmers' fields). The treatments were white plastic reflective mulch, treated yellow material trap, mineral oil and unmulched/untreated control where aphids were monitored weekly using yellow water pan traps in the wet and dry seasons. Reflective mulch had significant effect ($p < 0.05$) on aphid population density over control, yellow material trap and mineral oil at both sites. Mulch had a significant effect in reducing *Aphis gosypii*, *Ropalosiphum maidis*, *Acyrtosiphon pisum* and *Macrosiphum euphorbiae* which are also reported vectors of CMV and CABMV. Aphid populations peaked only once in June coinciding with the major season for growing food crops. All the treatments achieved better effect when population densities were higher (long rain season) than when they were low (in dry season). Reflective mulch can decrease aphid population density in passion fruit orchards and can be used as an alternative cultural control to reduce vector activity and spread of woodiness disease.