

The repellency of the essential oil of the shrub *Cleome monophylla* (Family: Capparidaceae) and identified constituents of the oil were evaluated against the livestock tick, *Rhipicephalus appendiculatus* and the maize weevil, *Sitophilus zeamais*. In a tick climbing repellency bioassay, the oil of *C. monophylla* exhibited repellency which, at the highest dose, was comparable to that of the commercial arthropod repellent N,N-diethyl toluamide (DEET). In a Y-tube olfactometer bioassay, *C. monophylla* oil showed higher or comparable repellency against *S. zeamais* relative to DEET at all the doses tested. 14 Compounds were identified in the *C. monophylla* oil by GC, GC-MS and coinjection with authentic samples. Terpenolene was found to occur in largest quantity (14%) followed by 1- α -terpeneol (10%), pentacosane (9%), (α + β)-humulene (8%), phytol (5%) and 2-dodecanone (4%). The most repellent components against *R. appendiculatus* and *S. zeamais* were 1- α -terpeneol and 2-dodecanone. The overall pattern of repellency activity of the *C. monophylla* constituents with respect to the two arthropods was, however, different. The potential of *C. monophylla* in tick and maize weevil control is discussed.