

The effect of formulation, fungal concentration, type and seasonal changes on the mortality of the tick *Amblyomma variegatum* was investigated. A previous study demonstrated high pathogenicity of strains of the fungi *Beauveria bassiana* and *Metarhizium anisopliae* against the ticks *Rhipicephalus appendiculatus* and *Amblyomma variegatum* (Kaaya et al. *J Invertebr Pathol* 1996; 67: 15–20). The present study was undertaken to explore possible additive or synergistic effects of the two fungi on *A. variegatum*. The effects of oil and water formulations at different concentrations of each fungus and combination of the two on the mortality of *A. variegatum* in the laboratory and in the field during the wet and dry seasons were determined and compared. The oil formulation performed better in all assays, with highest tick mortality of 92% occurring during the wet season at conidia concentration of  $1 \cdot 10^{10}$  conidia/ml of the mixed fungi compared to 49% for the water formulation at similar conidia concentration. However, at the same conidial concentration during the dry season, mortalities in the field were relatively low with the mixture of the fungi recording 24% and 17% tick mortality for the oil and water formulation respectively. The effect of infecting the ticks with a cocktail of the two fungi was inconclusive under more controlled conditions in the laboratory but field results under both wet and dry seasons indicated significant differences between the separate and mixed fungi infections. The results demonstrate a potential of cocktail formulations in the control of ticks and possibly of other arthropod pests.