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Full Length Research Paper

Effect of three different treatment levels of deltamethrin on the numbers of dung beetles in dung pats

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Abstract

The effect of 3 different treatment levels of the pyrethroid deltamethrin on the numbers of dung beetles (Families, Hydrophilidae, Scarabidae and Staphilinidae) were investigated. A known quantity of cow dung was thoroughly mixed with a premeasured quantity of deltamethrin that would give the required concentration. Dung was exposed in the field for 1 week, collected and washed out to determine the number of beetles. The three levels tested against the control were 0.01mg, 0.1 and 1mg of deltamethrin per litre of dung. The Hydrophilidae and Staphilinidae showed a significant difference from the control at the concentration level of 0.1 mg per litre of dung. The Scarabidae were the most sensitive to deltamethrin showing a significant difference to the control at the lowest dose of 0.01mg per litre. The research recommends that any treatment of livestock especially cattle with deltamethrin that results in dung contamination of 0.1 mg for Hydrophilidae and Staphilinidae, and 0.01 mg for Scarabidae should be reviewed where possible, particularly in those countries where pyrethroids are widely used.

Key words: Hydrophilidae, Staphilinidae, Scarabidae, Pyrethroids, Deltamethrin

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