

EVALUATION OF INSECTICIDES FOR THE MANAGEMENT OF NAVY BEAN (*Phaseolus vulgaris L.*) PESTS

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Abstract (C2096)

Pests are a major constraint to production of navy beans (*Phaseolus vulgaris L.*) in Kenya. Farmers rely primarily on insecticides to control navy bean pests and use one insecticide molecule over a long period of time, resulting in high pesticide residues and ineffective control of aphids, beanfly, whiteflies and bean flower thrips. Therefore, a study was conducted to determine the effect of some of the pesticides used by bean farmers on populations of aphids, bean stem maggot and thrips, and grain yield of navy beans. The experiment was conducted in Kimbimbi, Mwea-Tebeere, Central Kenya for two seasons in December 2009 - August 2010. Eight pesticides namely Monceren® (imidachloprid), Gaucho® (imidachloprid), Actara® (thiamethoxam), Ogor® (dimethoate), Neembecidine® (azadaractin), Karate® (lamdacyhalothrin), Cruiser® (thiamethoxam), Thunder® (imidacloprid) and a control treatment (no pesticide was applied) were evaluated using navy bean variety Mexican 142. Total counts of aphids, bean stem maggot and thrips were recorded and grain yield of navy beans determined. Actara, monceren, neem and dimethoate significantly reduced the number of aphids in the first season while cruiser, Gaucho, thunder and Karate had no effect. In the second season, Actara, dimethoate and Karate significantly reduced the number of aphids. All the pesticides, except neembecidine in the first season, significantly reduced the number of bean stem maggots. Pesticides had no effect on the flower thrips in both seasons. Actara, Thunder, Ogor and Karate significantly improved grain yield while Neembecidine, Monceren, Cruiser and Gaucho had no effect. It is advisable for farmers to use Thunder and Actara which are environment-friendly and have minimal residues on the seeds.

Key words: Navy bean, bean stem maggot, aphids, imidacloprid, thiamethoxam