

Effect of Neem Extracts in the Control of Whitefly (*Bemisia tabaci*) on French Beans (*Phaseolus vulgaris*)

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Abstract

French beans (*Phaseolus vulgaris*) are major vegetables produced for export market in Kenya to European countries. The effectiveness of neem extract in controlling whiteflies (*Bemisia tabaci*) on French beans was assessed. The study was conducted in University of Embu (UoEm) agricultural farm, Embu (January –April 2017). Different rates of aqueous neem 500g/l and 250g/l were sprayed on French bean plants. A synthetic chemical karate (Lamdacyhalothrin) was used as a reference chemical and a treatment and a treatment without a chemical (control) was also used. Randomized Complete Block Design was used and each treatment was replicated three times. The effectiveness of these treatments on the population of whiteflies and total number of infested plants was assessed. For three weeks of study Results showed that all the treatments were significant on number of whiteflies ($P < 0.001$) on three weeks of study, but from the result. The results showed that karate effectively controlled whiteflies followed by neem extract at 500g/l on French beans, neem leaf extract 500g/l had promising results on controlling whiteflies over leaf neem extract 250g/l there was no significant difference between karate and leaf neem extract 500g/l on number of infested plants all the treatments had a significant difference in three weeks of study. Karate was also effective in reducing numbers of infested French bean plants although there was no significance difference in the third week with neem extract 500g/l. from the study of three weeks of sampling two recommendations were made. Karate is recommended in controlling whiteflies and aqueous leaf neem extract can be effectively rotated with karate which is more environmentally safe on whitefly management on French beans