ASSESMENT OF IMIDACLOPRID AND DINOTEFURAN ON WHITEFLY (*Bemisia tabaci*) OF CHILI

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DECLARATION

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ABSTRACT

ASSESMENT OF DINOTEFURAN AND IMIDACLOPRID ON WHITEFLY (*Bemisia tabaci*) OF CHILI

The whitefly, *Bemisia tabaci* from Homoptera order, has been a problem in chili cultivation for years. Insecticides have been and will likely remain the best alternative that can be used to solve whitefly infestation problem .The study was conducted to determine the efficacy of several insecticides against whitefly on chili plant (*Capsicum annuum*) from `Kulai' 0630 cultivation in Malaysia. All management procedures are conducted as usual to imitate commercial plantation. The insecticides used in this study are Imidacloprid (Confidor 200SL) and Dinotefuran (Oshin 20WP). The effectiveness of each insecticide used being evaluated in term of the number of pest present on the crop plant before and after the application of insecticide. This experiment is conducted by using randomized completely block design (RCBD) with 3 treatments and 4 blocks/replications for each treatment amounting to 12 plot altogether. Each plot will be provided with 10 experimental units. Therefore, the total numbers of experimental units are 120 plants. From each sampling, only five leaves are taken from the middle level randomly, and there will be 600 ample from 10 times sampling. Sampling are done on the day prior the treatment, the day after treatment, then on day 3, 7 and 14 after treatment. Treatment are done twice, on day 75 after sowing and day 90 after sowing. The treatments used untreated water as a control. The control plot shown a linear reduction in the whitefly population mean from 5.5 to 2.5 for the first treatment. In plot treated with Imidacloprid, the population mean of insect pest drop from 6.75 to 3 in the first day, and remain the same (1.75) for the three consecutive data collection day. Plot treated with Dinotefuran show a reduction from 5.75 before treatment to 3.75 on the first day and continue to drop in the third day to only 1.5. However from day 7 it start to rise back to 2.25 and 2.75 on the last day. In the second application, the mean number of insect pest also recorded to drop after treatment. In the control plot, insect population mean drop from 3 to 2.5 after treatment, continue to drop to 2.25 on the third day but rise up in the seventh day to 2.75, and 3 on the last day. A nearly same pattern is observed plot treated with Dinotefuran, drop down from 2.75 to 2 after treatment, and continue to drop to 1.5 in the third day and rise up to 1.75 on seventh day, thus remain the same till the end of the experiment. Imidacloprid had cause the insect population to decrease after treatment, from 2.25 to 1.25, however its number remain the same and only rise up again on the last day of the data collection to 1.5. The result obtained from this experiment had proved that chemical treatment can be used to control the population of insect pest, *Bemisia tabaci* as there is a reduction in the population of insect pest in the treated plot. Imidacloprid showed that it is more significant than Dinotefuran in controlling the population number of whitefly on chilly crop, provided the application must not be continuous. It have to be alternated with other pesticides with different mode of action, or else the whitefly may built resistant toward Imidacloprid. Dinotefuran in the other hand are able to control the pest population in long term, however, as chilly usually grown as annual crop, Dinotefuran are not affective enough to control the pest population in limited time interval.

Key Words: *Bemisia Tabaci*, Imidacloprid, Dinotefuran, population number