EFFECT OF SOME NANO TECHNOLOGICAL PESTICIDES ON SOME MEDICINAL PLANTS PESTS

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LIST OF CONTENTS

List Tables

List Figures

ABSTRACT

This work is an attempt to obtain basic information of Silica offer expanded possibilities for use in horticultural crops. However, many crop pests are found on the leaf underside and this is especially challenging when using silica because the substance must have direct contact with the insect to be effective. In this study we used two forms traditional and Nano, Silicon dioxide SiO_2 and the same technique for imidacloprid to evaluate their insecticidal efficacies against two different pests, *Bemisia tabaci* and *Aphis gossybii*. Lethal concentration (LC_S) at 24h, 48h, 72h, and 96h., were measured, on the *Mentha pulegium* and *Thymus vulgaris*. Residues of SiO_2 and imidacloprid in *M. pulegium* and *T. vulgaris* its Nano particles of the tested pesticide after application, were also studied. Our results indicated that, a cumulative mortality of *Bemisia tabaci* and *Aphis gossybsii* were increased as the insecticide concentration with laps of time. The highest mortality value of *Bemisia tabaci* and *Aphis gossybsii* was recorded at 96h with two compounds after application. As for, SNPs which was surpasse on *A. gossyii* after 24hr. After treated with 2.50 µg/ml, whereas the compound able to achieve the same result on *B. tabaci* but after 48hr of treatment with the same dose concerning the effect of imidacloprid in the two forms, data revealed on elevation drastically in the activity of Nano portion than the traditional picture. The great control of Nano particle lead to 20 folds more than the normal individual in the each of the two pests. On the other, hand, *A. gossypii* had shown an appreciable rate of susceptibility than *B. tabaci*. Fortunality, the same effect and behavior was marked also with Silicon dioxide. Residues of imidacloprid and its Nano particles in mint and thyme leaves, stems and soil in addition to processing drying and boiling techniques in the removal ratios of the tested pesticide after application

with mint and thyme lead to evaporation of the surface residue which is dependent on temperature condition, biological dilution which is dependent on the increase mass of plants, chemical or biochemical decomposition, metabolism and photolysis. Our results indicated that cumulative mortality of *Bemisia tabaci* and *Aphis gossybsii* were increased as the insecticide concentration and /or the time increased. Also, data achieved imidacloprid and its Nano form INPs, can make a valuable contribution to integrated pest management and will be most efficacious when directed against *B.tabaci* and *A. gossypii*.

In general, it concluded that *A. gossypii* was interesting with more susceptibility to the four compounds, while the *B. tabaci* forthrightly, selection pressure have rekindled the Nano forms than the traditional on he two pests. Our results ought to considered for further use in conjunction towards the two pests.