Studies on bee venom in honey bee colony

Khaled Abdel-mordy El-said AfefyEl-ashhab

Honeybee (Apis mellifera L.) colonies produce six apitherapy substances (honey , wax , pollen , royal jelly , proplis as well as bee venom ”Apitoxin”) as food, health and beauty substances.Bee venom was chosen in this study to find the beast and economic way of its collect from alive honeybee worker by using slight new electrical shock device. These collector devices are made from local and cheaper material at the National Project for Honeybee Pests Control, Faculty of Agriculture, Moshtohor, Zagazig University. The results of these studies are summarized as follows: (I) Types of bee venom electrical devices used forextraction of Apitoxin from honeybee worker:1-Effect of using electrical transformer 220 V. to 3 V. at 0.4 A. on amount of bee venom collection from three bee races colonies was studied, the amount of bee venom collected was average 0.255 g./colony/30min./day.2-The amount of bee venom collection from the honeybee hive using electrical device 220 to 6 V. with 1 A.: it is apparent that, the amount of bee venom secreted from F2 Carniolan bee races was an average of 0.275, in the same case the amount of bee venom secreted from F2 Italian bee races was an average of 0.27, while the amount of bee venom secreted from F2 Manzala bee races was an averageof 0.31.3-Amount of B. V. collected at three days interval from the three races of honeybee by using electrical transformer 220 V. to 12 V. at 1 A., it is apparent that, the amount of bee venom secreted from F2 Carniolan bee races was an average of 0.25, in the same case the amount of bee venom secreted from F2 Italian bee races was an average of 0.272, while the amount of bee venom secreted from F2 Manzala bee races was an average of 0.303.4-Amount of B.V. collected daily from the three races of honeybee by using electrical transformer 220 V. to 12 V. at 1 A, it is apparent that, the amount of bee venom secreted from F2 Carniolan bee races was an average of 0.195, in the same case the amount of bee venom secreted from F2 Italian bee races was an average of 0.246, while the amount of bee venom secreted from F2 Manzala bee races was an average of 0.290.5-Amount of bee venom from the three bee races F2 using electrical transformer 220 V. to 14 V. at 3 A. during 30 min. used the device every 10 dyas, it is apparent that, the amount of bee venom secreted from F2 Carniolan bee races was an average of 0.302, in the same case the amount of bee venom secreted from F, Italian bee races was an average of 0.338, while the amount of bee venom secreted from F2 Manzala bee races was an average of 0.368.6-Effect of using wetbattery 12 V with 16 A. on amount of B.V. collection in the three bee race F2. used the device every 10 dyas, it is apparent that, the amount of bee venom secreted from F2 Carniolan bee races was an average of 0.346, in the same case the amount of bee venom secreted from F2Italian bee races was an average of 0.37, while the amount of bee venom secreted from F2 Manzala bee races was anaverage of 0.41.(II)Effect of different seasons on bee venom collectionThe amount of bee venom collected on June run with an average of 0.33, however on October was an average of 0.313, while on December was an average of 0.243;.(III)Effect of using bee venom electrical collector device on Varroa jacobsoni controle :1-The relationship between bee venom collection and Varroa mites caught by using electrical transformer 220 V. to 3 V. at 0.4 A. on the three bee races F1. during 30 min. The result indicated that, the using of the different devices for collecting bee venom were more effective on Varroa fall onto the plates of devices. The numbers of Varroa fallen during 30min. of treatment was an average 13.3 mites/colony, this results can be used for indicator to starting Varroa control.2-The relationship between bee venom collection and Varroa mites caught using electrical transformer 220 V. to 12 V. at 1 A., recorded at the 3-day intervals in the three bee races F2 during 30 mm. on F2 Carniolan bee

races varroa mites was 183 with an average of 8.31 Varroa mites. While on F2 Italian bee races was 201 with an average of 9.13 . However, F2 Manzala bee races was 102, with anaverage of 4.63.3-While using electrical transformer 220 V. to 14 V. at 3 A. on bee F2 bee races every 10 days the amount if Varroa on the plate was 167, with an average of 18.5Varroa mites.(IV) Effect of using bee venom device on the dead honeybee workers::1-Effect of using electrical transformer 220 V. to 12 V. at 1 A. on the amount of bee venom collection during 27/6/98 to 30/8/98 recorded at 3-run intervals in the three bee race F2 (A) during 30 min . The result showed that; the number of workers dead during the experiment period (30min./treatment) on F2 Carniolan bee races was 776, with an average of 35.27 worker, during (30min/treatment). While on F2 Italian bee races was 572, with an average of 26 worker, during (30min/treatment). Whatever on F2 Mazlala bee races was 380 with an average 30.9.2-Effect of using electrical transformer 220 V to 14 V. with 3 A. on amount of B.V. collection in the three bee races F2. , leaving the device to 30 min. after cut off the electric current. The number of dead bee on F2 Carniolan bee races was 160, with an average of 17.7 dead bee, while on F2 Italian bee races was 95, with an average of 10.5. while on F2 Manzala bee races was 212, with an average of 23.5 dead bee.(V) Effect of using bee venom device on the temperature & R.H. in the hive of honeybee colonies :SUMMARY AND CONCLUSION = 118-The results indicated that the increase of temperature and relative humidity was noticed during the treatments of honeybee colonies by bee venom collector device, the temperature increase from 31 °C to 38.1°C, while R.H. increased from 50% to 75% .(VI)Effect of honeybee races and its generation on the amount of bee venom secreted :The results showed that Manzala bees race produced 0.393g. , Italian bees race produced 0.353g. and Carniolan be race produced 0.340g. during 30minitreatment/colony, respectively . the generations of the above races produced the amount of bee venom as follows; El-Manzala F2 produced 0.402g. , Manzala F1 produced 0.380g. , El-Italian F2 produced 0.364g. , Carniolan F2 0.352g. , Italian F1 0.342g. and in the case of Carniolan F1 came the last one which produced 0.328g./30min./treatment, respectively.(VII)Comparison selective between types of electrical bee venom collector device :The final results medicated that, the battery device at 12 V. was the best one (average 0.478g.) while the others devices were 0.446g. in case the device (14 V. at 3 A.), 0.439g. in case (12 V. at 1 A.) ; 0.426g. in case of (3 V. at 0.4 A.) and the electrical transformer 220 V. to 6 V. at 1 A. came the last one which produced 0.420g./30min./treatment during the experiment.