IMPROVEMENT OF HONEYBEE VENOM PRODUCTIVITY IN COMMERCIAL APIARIES

By

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B.Sc. Agric. Sci. (Agric. Production), Fac. Agric., Alex. Univ., 1998
M.Sc. Agric. Sci. (Economic Entomology), Fac. Agric., Cairo Univ., 2008

THESIS

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APPROVAL SHEET

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Title of Thesis: Improvement of Honeybee Venom Productivity in Commercial Apiaries

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ABSTRACT

This study was conducted to: 1. assess of some technical processes during collecting bee venom on the amount of extracted venom; a. Effect of collecting venom time, best time was before sunset. b. best periods time between venom collections; was 14 days. c. best position inside the colony to collect venom from; was from upper frames and the best hybrid bee for venom production was Carniolan hybrid. d. Effect of frequencies number of electric shocks on the same colony during day time on the amount of dried venom was 4 shocks which target 55.2±5.440 mg. e. Effect of frequencies number of honeybee colonies for the same collecting plate on venom quantity produced: 1. Effect of using the same electric collecting plate between different numbers of colonies on the quantity of dried venom was from four colonies; 2. Amounts of dried venom collected from Inter-colonies was the biggest amount with significant difference from Intra-colony. f. Studying effect of supplemental feeding (sugar and protein) on colonies to determine its quantity effect on bee venom production, soybean+yeast gave the highest amount of venom 69.6±4.846 mg./colony from other supplements used. 2. Determination of bee venom quantity produced from different strength colonies in commercial apiaries all offer the year: a. Nuclei; contain 3 brood combs (25 colonies); General mean of venom amount was 11.8±0.574 mg. /colony, b. Week colonies; contain 3-5 brood combs (120 colonies) gave 16.0±0.811 mg. /colony, c. Semi strong colonies; contain 5-8 brood combs (250 colonies) gave 33.3±6.153 mg. /colony**,** d. Strong colonies; contain 9-10 brood combs (80 colonies) gave 95.1±20.964 mg. /colony.

3. Determine productivity efficiency for colony through the year and its Relation with beekeeper income, there was a significant difference between amount of venom collected by hybrid carniolan and hybrid Italian collected all over the year 2015, it's mean was 31.6± 4.5 and 17.1±2.1 mg. /colony respectively with general mean 24.4±3.2 mg. /colony, regarding seasons spring was the highest in collected venom amount then summer, autumn and winter with means±se 36.7±11.650, 30.0±10.572, 18.6±4.342 and 12.1±2.439 respectively.

4. Productivity efficiency effect on different activities of the colony the general mean was: a. Activity of colonies in rearing total worker brood, was with means±se 671.4±42.0 ($inch^2$), b. Activity of colonies in rearing drone brood was 16.4±1.518 ($inch^2$), c. Activity of colonies in constructing queen cells with means±se was 1.5±0.741, d. Activity of colonies in constructing queen cups with means±se was 4.3±0.468, e. Activity of colonies in collecting, and storing pollen with means±se was 58.4±13.261 ($inch^2$), f. Honey stored areas with means±se was 343.1±34.106 ($inch^2$), g. Amount of honey weight mean was 3994.8 (mg.).

Key words: honeybee, bee venom, strength colony, Carniolan and Italian hybrid bee's, supplemental feeding

DEDICATION

I dedicate this work to whom my heart felt thanks; to my mother: ***AAMAAL EL-FEEL*** *and my brother's* ***MOHAMAD, AHMAD*** *for their patience and help, my father* ***GOD REST HIS SOUL****, my sister,* ***SAMAR ANTAR ELFEEL, GOD REST HER SOUL****.*

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