

BIOLOGICAL STUDIES OF TWO LAND SNAIL SPECIES AT MINUFIYA GOVERNORATE

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ABSTRACT:

Some biological aspects of both *Monacha cartusiana* and *Eobania vermiculata* were studied under laboratory conditions, Life span of *M. cartusiana* was 580 ± 8.4 days compared with 921.4 ± 8.9 days for *E. vermiculata*. The incubation period lasted 19.3 ± 1.6 days and 12 days for *M. cartusiana* and *E. vermiculata*, respectively. Juvenile period of *M. cartusiana* prolonged for 112 ± 4.2 days, while this period prolonged 117.6 ± 4.5 days for *E. vermiculata*. Oviposition period was 91 ± 2 and 354.2 ± 6.04 days for *M. cartusiana* and *E. vermiculata* respectively. The effect of four temperature degrees on incubation period and hatchability of *M. cartusiana* and *E. vermiculata* were studied. The highest hatchability was recorded when snails reared on 20°C (95 and 80% for *M. cartusiana* and *E. vermiculata*). When three moisture levels were tested, the highest hatchability and the shortest incubation period recorded at 80% R.H. Rearing snails on 1 clay: 1 sand soil gave moderate incubation period (19 & 18 days) and the highest hatchability was 87.5 and 92.5% for *M. cartusiana* and *E. vermiculata*, respectively. When snails egg exposed to long light period (12 hours) no hatching was occurred, while six hours was the most suitable for hatchability (92.5 and 97.5%) and shorted the incubation period (14, 12 days) for *M. cartusiana* and *E. vermiculata*, respectively. The effect of five food types on *E. vermiculata* consumption was tested for seven days, data cleared that Lettuce leaves were the most preferable food type followed by Cabbage and Clover leaves.

Key words: : *Monacha cartusiana*, *Eobania vermiculata*, Biology, land snails.

***A FIELD EXPERIMENT ON THE CONTROL OF PHYTOPHAGUS MITES
INFESTED TWO ORANGE VARIETIES AT MINUFIYA GOVERNORATE***

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ABSTRACT:

The effect of three compounds (Agrin 6.5%, Micronized sulfur 70%Wp, K.Z. oil EC 95%) under field condition to determine the toxicity effect on *Brevipalpus obovatus* and *Tetranychus urticae*, infested Naval orange and Seefi orange trees. The reduction percentages of *Tetranychus urticae* infested leaves of Naval orange were recorded, Micronized sulfur gave 89.4% followed by KZ oil resulting 79.7%, and Agrin treatment which gave 76.9%. As for the grand mean of the reduction percentages of *Brevipalpus obovatus* population, the highest grand mean reduction was recorded with the treatment of Agrin giving 97.4% followed by Micronized sulfur resulting 93.4%, while KZ oil treatment gave 85.8%. To study the effect of these compounds on *Amblyseius swirski* results indicated that, the highest grand mean reduction was recorded with the treatment of Agrin giving 93.6% followed by Micronized sulfur resulting 93.1%, while KZ oil treatment gave 68.1%. *Tetranychus urticae* infested leaves of Seefi orange were lower, where the highest grand mean reduction was recorded with the treatment of Agrin giving 85%, followed by Micronized sulfur resulting (84.6%), while KZ oil treatment gave the least one, (76.4%). As for *Brevipalpus obovatus* infested leaves of Seefi orange, the reduction percentages were for 82.8% for Agrin followed by Micronized sulfur (71.5%) and KZ oil (71.44%) treatments. The reduction percentages of *Amblyseius swirski*, recorded the highest mean in the treatment of Agrin (92.5%) followed by Micronized sulfur (87.3%) and KZ oil (78.6%).

Key words: *Tetranychus urticae*, *Brevipalpus obovatus*, *Amblyseius swirski*, citrus varieties, mite control.

***TOXIC EFFECT OF FOUR PLANT EXTRACTS AGAINST MONACHA
OBSTRUCTA UNDER LABORATORY CONDITIONS***

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ABSTRACT:

Four plant extract leaves , Calotropis procera, Melia Adiantum capillus,azadirachta, Solanum nigrum were tested against the land snail Monacha obstructa under laboratory conditions, The concentration 30% was used after preliminary experiment of different concentrations. Four carrier materials for plant extracts were used : lettuce ; cabbage ; potatoes ; and wheat bran, leaf dipping technique was used in lettuce and cabbage while bait technique was used in potatoes and wheat bran . Plant extracts of four plants were tested on Monacha obstructa, these plants are Calotropis procera, Melia azadarach , Adiantum capillus and Solanum nigrum. Results cleared that after one week of Calotropis procera extract application, mortality percentages of Monacha obstructa ranged between 29: 35% raised to 100% mortality percentages after four weeks (when lettuce and potatoes used as carrier material) and five weeks (when cabbage and wheat used as carrier material). As for Melia azadarach extract application after one week of application, mortality percentages of Monacha obstructa ranged between 39: 41% raised to 100% mortality percentages after three weeks (in the case of using lettuce and potatoes) and four weeks (cabbage and wheat). Adiantum capillus gave mortality percentages ranged between 51:81% after one week of application, while the percentages of mortality increased to 100 % after three weeks (when potatoes and wheat used as carrier material) , and after four weeks for the lettuce and cabbage. Regarding to the effect of Solanum nigrum extract, one week after applications mortality percentages ranged between 36:45 % , while these percentages raised to 100 % mortality of the snail after three weeks of application at the treatments of lettuce, potatoes, and wheat , while after four weeks of application for cabbage . The obtained data revealed that all plant extracts gave satisfactory control after one month of application, but both Solanum nigrum and Adiantum capillus were more effective than Melia azadarach and the least toxic plant extract was Calotropis procera.

Key words: land snails- slugs - Monacha obstructa – plant extracts

***BIOLOGICAL CONTROL OF PLANT PARASITIC NEMATODES INFECTED
CUCUMBER PLANTS UNDER SHIELD PLANTATION CONDITIONS***

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ABSTRACT:

The main purpose of the experiments was to study the abundance of nematode genera in the soil of the commercial plastic houses cultivated with cucumber crop, under controlled conditions and to study the effect of 17 bioagents in the control of plant parasitic nematodes infecting cucumber plants variety (Medina) under plastic house conditions. Results indicated that the highest grand mean reduction percentages of nematodes were recorded with the treatments of Carbufuran (93.3 %); followed by powder of fish bones (92.1 %); and Poultry manure (91.0 %) without significant differences, while the treatments of Compost, 1 part farmyard manure + 2 part poultry manure; Potassium; Saccharomyces; and Streptomyces gave moderate reduction percentages without significant differences, as (85.4 %), (82.5 %), (80.3 %), (80.3 %), (80.1 %), respectively. The lowest grand mean reduction percentages of nematodes were recorded with the treatments of Sulfur, Bacillus thuringiensis, (Zn, Mn, Fe), Demssisa, Neem, resulting (44.6 %), (51.4 %), (51.4 %), (54.4 %), (54.5%), respectively. The highest weights in the cucumber fruit crops were recorded with the treatments of Farmyard manure (130.7 %) (17.3 kg), followed by the treatment of Poultry manure giving (113.3 %) (16.0 kg), Compost (105.3 %) (15.4 kg), powder of fish bones (100.0 %) (15.0 kg), while the least weights in the cucumber fruit crops were recorded with the treatments of Saccharomyces (32.5 %) (9.9 kg), followed by the treatment of Zn, Fe, Mn giving (58.7 %) (11.9 kg), Potassium, (69.3 %) (12.7 kg), Sulfur (70.7 %) (12.8 kg), Streptomyces (72.0 %), (12.9 kg), and finally Beauveria bassiana (78.7 %), (13.4 kg / 10 plants), in comparison with the control which harvested only (7.5 kg).

Key words: Biological control, bioagents, cucumber, organic manures, parasitic nematodes