studyies on the role of preadator mite in controlling some insects and mites pests

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Biological control are important for controlling mite and some insect pests.Many trials in the different parts in the world are carried out to reduce the population densities of mites. Biology of Euseius scutalis A.-H. are studied in the laboratory at different food kinds and types (mites and insects), on eggs and immature stages of Tetranychus urticae Koch, Bemisia tabaci Genn., Chrysomphalus ficus Riley, Aonidiella aurantii (Mask.), Lepidosaphes beckii (Newm.), and Icerya purchasi (Mask.) to measure the food range and fecundity. The study conducted in an incubator at 25°C as the following :1- The female and male of Euseius scutalis passed through two nymphal stages in addition to the larval one before reaching adulthood.•Egg stages of Tetranychus urticae highly accelerated the predator than did immature stages, on the contrary prey eggs of Bernisia tabaci highly elongated the predator development than did immature stages.•Eggs and immatures of Chrysomphalus ficus induced subequal periods of E. scutalis immature stages and male longevity. Prey immatures of C. ficus elongated the female longevity, than did prey eggs of C. ficus.•The longest longevity was obtained when the predators fed on T. urticae immatures which the female longevity averaged 35.970.39, 14.37+0.25, 13.63+1.17, 13.200.62, 7.1+0.96 and 3.3+0.46 days on immature stages of 7’. urticae, B. tabaci, C. ficus, A. aurantii, L. beckii, and I. purchasi, respectively.•The female lived for a longer period than of the male.•The predator efficiency increased during the predator developmental stages. Each of protonymph and deutonymph fed on more than 3 or 5 times as much as that destroyed by the larvae.•The predator tended to fed on greater number of prey eggs than immatures, except in case of C. ficus which presented the greatest number of prey immatures.•The female of E. scutalis consumed 573.3, 199.5, 244.73, 8.1 and 8.8 eggs of T. urticae, B. tabaci, C. ficus, L. beckii, and I. purchasi., respectively; and the numbers of deposited eggs were 23.6, 12.5, 15.6, 3.3, and 1.7 eggs for the above preys during oviposition period.•Also, the female of E. scutalis consumed 510.1, 228.3, 487.1, 263.9, 11.0 and 8.5 immatures of T. urticae, B. tabaci, C. ficus, A. aurantii, L. beckii and I. purchasi, respectively; and the numbers of deposited eggs were 31.1, 19.0, 23.6, 11.8, 6.2 and 1.2 eggs.•The adult female of the predatory mite E. scutalis attacked higher numbers of acarine than those of preys insects.•Each of L. beckii and I. purchasi did not suitable preys to the predator longevity and fecundity which induced a very low numbers of deposited eggs.•Prey immature stages specially those of T. urticae highly stimulated the predator

fecundity than did prey eggs.•The male immature and adult stages fed on less numbers of preys than the female.2- Also, biological studies on Phytoseiulus persimilis A.-H. showed that the female lived for a longer period than that of the male The female and male longevity averaged 14.72 and H.5 days, respectively.•The predator efficiency to consumed immature stages of Tetranychus urticae Koch, increased during the predator developmental stages which adult fed on greater number than deutonymph more than protonymph, and the adult female proved to be more efficient than the male which the former fed on more than three times as much as the latter, adult female and male consumed 77.4 and 27.5 immatures of 7'. urticae, respectively.•Adult female consumed 62.6 immatures of T urticae and deposited 178.0 eggs during oviposition period.•At cold storage of Phytoseiulus persimilis eggs at 10 and 5°C from one to four weeks, egg hatchability percentages at 10°C reached to 100 %, 87.5 %, 70 % and zero %; and at 5°C reached to 84.9 %, 10 %, 2.5 % and zero %; for one, two, three and four weeks, respectively when the stored eggs transferred at 25°C. One week successfully in cold storage because it produced 100 % and 84.9 % of hatchability at 10 and 5°C.•Egg hatchability percentage decrease as cold storage period increased and storage temperature decrease.•The biological aspects of the predator P. persimilis after cooling storage of its eggs at 5°C for one week and transferred at 25°C were studied and compared with the biological aspects of P. persimilis at 25°C indicated that the female longevity period decreased in cooling which gave 8.9±1.74 days and 14.5±1.5 days in control.•The fecundity of the female reduced in cooling treatment which the number of deposited eggs per female reduced to 19.36±6.6 eggs and it was 45.4±4.99 eggs per female in control.•We must not make this storage except in obligated case when their are a high number of predatory egg stages will be damaged only.3- To evaluate the side effect of some acaricides, fungicides, organophosphorus, herbicides, mineral oils, and Insect growth regulators against the eggs and adult females of the predatory mite, Phytoseiulus persimilis A.-H. under laboratory conditions. The results obtainedrevealed the following :•The three recommended acaricides (Fenpyroximate) Ortus 5 % EC, (Abamectin) Vertimec 1.8 % EC, and (Bromoprophylate) Neoron 50 % EC were harmless to eggs stages of the predator P. persimilis. But on adult females, Ortus and Neoron were harmful produced 100 % and 93.75 % mortality percent, while Vertimec was harmless caused 46.4% mortality.•The toxic effect of recommended fungicides (Captan) Captan 50 % WP, (Benomyl) Benlate 50 % WP, (Propiconazole) Tilet-100 10 % EC, (Triforine) Saprol 19 % EC, (Fenarimol) Rubigan 12 % EC, (Bupirimate) Nimrod 25 % EC, (Mancozeb 52 + Copper oxychloride 7.5 %), Mancoper 75 % DG, (Fosetylal + Folpet) Mikal 75 WP, (Mancozeb) Tridex 75 DG, (Procymidone) Sumisclex 50 % WP, (Dromoconazole) Vectra 40 % FL, (Tridimefon) Byleton 25 % WP, (Chlorothalonil) Bravo 50 % FL, all of them exhibited good effect on the hatchability percentage of the eggs stage of the P. persimilis. (Tridemorph) Calixin 75 % WP and (Sulphur) Thiovit 70 % WP caused slightly effect on the percent of eggs unhatchability were 14.3 % and 5.5 %, respectively. The toxic effect on adult stages of P. persimilis was evaluated as Captan 50 % EC, Benlate 50 WP, Tilet-100 10 %EC, Saprol 19 % EC, Calixin 75 WP, Vectra 40 % FL, Bravo 50 % FL, Rubigan 12 % EC, Sumisclex 50 % WP, Thiovit 70 % WP and Mikal 75 % WP produced no bad effect in

adult females of the predatory mite P. persimilis. While Nimrod 25 % EC, Mancoper 75 % DG, Tridex 75 % WP and Byleton 25 % WP exhibit mortality percent 33.3, 34.78, 34.6 and 60.00 %, respectively.•The toxicity effect of recommended organophosphorus on egg stages (S-fenvalerate) Sumi-Gold 20 % EC, and (Fenpropathrin) Meothrin 20 % EC caused harmless effect to the unhatchability of P. persimilis, (Malathion) Malathion 57 % EC, and (Pirimiphos-methyl) Actellic 50 % EC were moderately harmful. (Triazophos) Hostathion 40 % EC, (Phenthioate) Cidial 50 % EC were harmful and percentages unhatchability 84.16 % and 100 %. The toxic effect of the above mentioned compounds induce 100 % mortality of the adult females of the predatory mite P. persimilis.•The recommended concentration of herbicides (Oxyfluorfen) Goal 24 % EC, (Glyphosate) Round-up 36 % EC gave 0.0 % of eggs unhatchability, while Goal 24 % EC was harmless to adult stages of the predatory mite P. persimilis. Round-up 36 % EC was slightly hamiful which gave 33.3 %.•To evaluate the ovicidal and adulticidal action of some mineral oils on the predator P. persimilis (Shokrona) Shokrona oil 95 % EC, (KZ oil) KZ oil 95 % EC, (Natur'l) Natur'l oil 93 % EC, and (Paraffinic) Paraffinic oil were harmless, while (Shokrona) Shokrona Super 95 % EC, (Nathional) Nathional oil 75 % EC, and (Kemisol) Kemisol oil 95 % EC induced 3.5, 48.14 and 3.7 % unhatchability. The toxic effect ofShokrona 95 % EC, Natur'l oil 93 % EC, Paraffinic oil 95 % EC and Kemisol 95 % EC were harmless, while Shokrona Super 95 % EC, was slightly harmful and Nathional 75 % EC and KZ oil 95 % EC were moderately harmful against adult females of the predator mite P. persimilis.• Insect growth regulators compound (Lufenuron) Match 5 % EC, (Triflumuron) Al-Systin 48 % SC, (Hexaflumuron) Consult 10 % EC, (Tebufenzoide) Memic 2-F 5 % EC, (Pyriproxyfen) Admiral 10 % EC, (Flucycloxuron) Andalin 25 % EC, and (Flufenoxuron) Cascade 10 % EC were harmless against eggs stage and adult females of P. persimilis. But Cascade 10 EC was slightly harmful on adult females which the percentage mortality was 27.3 %.