

Entomophages of diamond back moth

Aim. To investigate influence of parasites of superficial layer of soil on the decline of quantity of wreckers vegetable. **Methods.** For the account of quantity of wreckers used methodologies of V.A. Tryapitsina, V.A. Shapiro, V.A. Shchepetelynova. The types of insects, both harmful and useful, determined Волкова after the determinants of M.M. Volkova, G.E. Osmolovsky. **Results.** In separate years the parasites of moles are able to destroy to 90% caterpillars and pupas of wrecker. Caterpillars and pupas is struck by mushroom illnesses from the sort of Entomofora. Epizootics caused by them appear after the protracted rains. **Conclusions.** In the decline of quantity of wreckers vegetable, not only scale-winged but also other groups from the row of hardwoods (larvae of blacksmiths, blackberries, cabbage weevils), from a row there is двокрили (cabbage flies, murmured, carrot fly and some sprout flies and mosquitoes), the parasites of superficial layer of soil influence substantially.

Keywords: cabbage moth of clothes, parasites, wreckers of vegetable, useful and harmful insects, епізоотії.

Cabbage moth of clothes — *Plutella maculipennis* of Curt. (family is a sickle snout of мори — Plutellidae, row scale-winged — Lepidoptera). Caterpillar get teeth into puff plates and gnaw through the curves of mine for them. Growing up, they climb up on the surface of sheets, gnaw out for them from a downside small areas, not damaging overhead fabric, as a result on sheets the windows covered from an upside by thin tape appear as though, that as far as the height of sheets is torn. Caterpillar often climb into the young sheets of cabbage of headache head does not appear and then. After a summer develops 4-10 generations.

Over 40 types of parasites of moths are known. B separate years they are able to destroy to 90% moths and pupas of wrecker. Basic kinds are *Nitobia fenestralis* of Holmgr, *Nitobia armillata* of B., *Diadromus subtilicornis* of Gran., *Diadromus ustulatus* of Holmgr., *Apanteles futiginosus* of Wesm., *Apanteles vestalis* of Hal. The types of sort of *Trichogramma* parasitize in eggs. Caterpillar and pupas is struck by mushroom illnesses from the sort of Entomofora. Epizootii caused by them appear after the protracted rains.

Aim of researches — to investigate influence of parasites of superficial layer of soil on the decline of quantity of wreckers vegetable.

Methods of researches. Researches were executed during 1999-2013 by Object of researches there was a zoocenosis on such vegetable cultures, as a cabbage is white-haired, a cabbage is coloured. Watching biocenotic copulas in the agrocoenosis of vegetable cultures and stationary researches from development of test and introduction of the system of defence conducted in the economies of the Kyiv area. The studies of specific composition of wreckers of vegetable cultures conducted through the inspection of the fields during all vegetation period, using materials of Government service of defence of plants of department of Phytosanitary diagnostics and prognosis. For the account of quantity of wreckers used methodologies of V.A. Tryapitsina, V.A. Shapiro, V.A. Shchepetelynova (1965). Counted up the common amount of wreckers and parasites on 100 plants for 10 in 10 places one time on a ten-day period during the vegetation period of all vegetable cultures that were certain the program of researches. The types of insects, both harmful and useful, determined (1955) after the determinants of M. M., G.E. Osmolovsky (1983). The rightness of authentication of the separate kinds discovered at accounts is confirmed by Institute of zoology of NASU.

Results of researches. The quantity of cabbage moths is regulated by activity of parasites — vermin of гусениць and by moribific mushrooms and bacteria that strike and pupas. Among vermin is a diadem and апантелес of cabbage moths. Larvae them are.

Harmfulness of different generations of moths is different. Especially not numerous first, but at the increased temperature in May — at the beginning of June the quantity of the second and third generations that inflict large harm to the plants increases sharply. In next generations the quantity of Moths diminishes, and had harmfulness perceptible as a result of activity of natural enemies (parasites).

It follows marks also, that the quantity of Moths at the years sharply hesitates and to forecast realization of chemical treatments without the account of influence of natural factors it is impossible as yet. Therefore we were study the infection and pupas by vermin, beginning from May and to the end of vegetation.

Among the vermin of cabbage moths it is discovered, such as diadem (orogenesis) of *Diadegma fenestralis* of Hoiqm — *Apanteles* of plutellac, and also and pupas moribific mushrooms and bacteria struck.

Rice. 1. A common amount of individuals of cabbage moths is on the investigated territory

Infection of гусениць of Moths by vermin in May (rice. 1) not exceeded 18-22%, in June rose to 29-32%, but in a middle a summer — at the beginning of July, when the maximal settling of cabbage was by a wrecker, increased and infection of by vermin, sometimes she arrived at 60%. The sharp increase of quantity of vermin resulted in diminishing to the quantity of Moths. In vegetable biocenosis, beginning from the second half of summer, vermin regulate reproduction of Moths, as a result, beginning from the end of July, to apply chemical treatments against this wrecker beside the purpose.

Thus, a cabbage moth of clothes is the main wrecker of cabbage in many areas of Ukraine and foremost on a south and in central to Forest-steppe.

She develops from 2-3 generations in Northlands to 5-6 — in south districts. A critical period of damage of cabbage of Moths is on the period of appearance 2 — or 3-ї generations. Parasites and moribific mushrooms and bacteria that on the average can infect to 60% pupas of Moths (rice. 2) have a large value in limitation of reproduction of wreckers.

Rice. 2. A common amount of the individuals of cabbage Moths infected by vermin is on the investigated territory

Rice. 3. Percent correlation of the infected individuals of cabbage moths is on the investigated territory

In the conditions of the specialized agriculture the factors of self-regulation in a biocenosis are considerably weak. The supervisions conducted by us during 5 (rice. 3) showed that death as a result of action of parasites on the large productive arrays of of cabbage had arrived at 8-11,9%, while on small areas in 2,5-3 times anymore (20-35,7%). However these areas were contained near the fields with a clover and melilot.

Conclusions

In the decline of quantity of wreckers vegetable, not only scale-winged but also other groups from the row (larvae, cabbage weevils), from a row there is (cabbage flies, murmured, carrot fly and some sprout flies and mosquitoes), the parasites of superficial layer of soil influence substantially. Among predators on the fields with vegetable such types of carabuss happen: *Broscus* of *semistriatus* of Dej., *Sephaotus* Web., *Fachysbistriatus* Duft., *Calatus* of *ambignum* of Fay K., *Harpalus* of *pigmeus* of Dey., *Carabus* of

scarbiusculus of Ol., Calosoma of auropunctatum of Hrbst., Bembidion of lampos of Hrbst., B. quadripustulatus of Serv., B. quadrimaculatum of L., B. properans.

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