

інфекції або при впливі абіотичних факторів, експресуються системно і завжди присутні в рослинах в певній кількості. Вони беруть участь в регуляції широкого спектру фізіологічних процесів протягом усього циклу життя рослин завдяки великій кількості ізоформ і множинності реакцій, що каталізуються ними.

Отже, пероксидази – індукцйбельні ферменти, що беруть участь в ростових процесах, азотному обміні, регуляції росту і розвитку, при оцінці чутливості та стійкості до стресу, підвищують комплексну стійкість рослин.

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OPTIMIZATION OF REPRODUCTION OF PREDATORY PENTATOMIDAE – A PATH TO RATIONAL NATURE MANAGEMENT AND CONSERVATION OF BIOLOGICAL RESOURCES

Most species of the Pentatomidae family are predatory insects. Ecological plasticity and the possibility of industrial breeding allows the use of Pentatomidae to limit the development of phytophages by the method of seasonal colonization. In Ukraine, the efficacy of Pentatomidae has been studied on the entomophagous *Podisus maculiventris* Say. and *Perillus bioculatus* Fabr. It is known that the potential victims of *Podisus maculiventris* Say. are more than 90 species of phytophages, mainly eggs and larvae of the Colorado potato beetle and Lepidoptera. *Podisus maculiventris* Say. is fed by different types of insects, but in mixed feed the survival rate of entomophage larvae increases and development accelerates.

The use of *Podisys maculiventris* Say. in Ukraine is promising, due to the wide polyphagia and significant adaptation to various a biotic factors. The disadvantage is that in the natural environment of Ukraine *Podisys maculiventris* Say. does not overwinter. Therefore, there is a need for artificial reproduction of *Podisys maculiventris* Say. and mass release in agroecosystems. For larvae and imago *Podisus maculiventris* Say. is characterized by a higher insipidity than for the corresponding stages of *Perillus bioculatus* Fabr. In Ukraine, *Perillus bioculatus* Fabr. is proposed as an effective entomophage of the Colorado potato beetle at all stages of development. Long-term studies have found that modification of qualitative and quantitative indicators of a diet leads to changes in the technological process, affects the biology of predators, their competition in biocenosis.

Research aim – to learn efficiency of the optimized diet for cultivation of predatory stinkbugs from family of Pentatomidae.

For the achievement of the put aim such tasks were solved:

- to create the optimized diet for cultivation of predatory stinkbugs;
- to learn the features of biology of predatory stinkbugs for the use of the optimized diet;
- to estimate potential possibilities of the predatory stinkbugs grown on the offered diet as biological agents of limitation of harmfulness of aboriginal phytophages.

It has been established that the best indicators of survival rate of individuals of the Pentatomidae population are provided for the cultivation of predatory bedbugs of the first – second age on the larvae of *Calliphora erythrocephala* Mg., third – fourth – larvae of *Ephestia kuehniella* Zell., fifth – larvae of *Tenebrio molitor* L. but bringing in a diet from a calculation for 10 larvae of predatory stinkbugs of 2ml of aquatic solution of nano aqua citrates beginning from: first to the end of the second age – nano aqua citrate molybdenum 0,0001%% concentrations, third – to the nano aqua citrate cobalt – 0,0002%% concentrations, fourth and fifth – to nano aqua citrate zinc – 0,00015%% concentrations.

It is established that for cultivation of predatory stinkbugs of the first-second age on the larvae of *Calliphora erythrocephala* Mg., third-fourth – larvae of *Ephestia kuehniella* Zell., fifth – larvae of *Tenebrio molitor* L. and bringing in a diet from a calculation for 10 larvae of predatory stinkbugs of 2ml of aquatic solution of nano aqua citrate beginning from: first to the end of the second age – nano aqua citrate molybdenum 0,0001%% concentrations, third – to the nano aqua citrate cobalt – 0,0002%% concentrations, fourth and fifth – to nano aqua citrate zinc – 0,00015%% concentrations provided the best indexes in relation to elimination of larvae of harmful phytophages for twenty-four hours. With the use in the diet of optimal concentrations of nano aqua citrate molybdenum, cobalt, zinc results in the increase of survivability of larvae of predatory stinkbugs.

Mixed feed of entomophages by the larvae of *Calliphora erythrocephala* Mg., *Ephestia kuehniella* Zell. but *Tenebrio molitor* L. and the use in the diet of nano aqua citrates assists the increase of exit of larvae and imago of predatory stinkbugs from family of Pentatomidae.

Offered diet, optimizes development, assists the increase of indexes of the productivity of imago, promotes efficiency of the use of predatory stinkbugs from family of Pentatomidae as biological agents of limitation of harmfulness of aboriginal phytophages.

The changes of quality and quantitative indexes of feed, that influenced on biology of predatory stinkbugs from family of Pentatomidae, took place due to the modified technological process, their competition in biogenesis.