ABSTRACT

Keywords: entomofauna, potato, carabide.

Potato occupies a primary place in Suceava county agriculture , occupying about 20-25 % of the cultivated area of the county. One of the basic conditions for increased production of tubers per hectare is the protection of plants against pests and disease complex.

The purpose of the investigations is to determine more precisely how pests which affect or may affect potato crops in the area of the Moldovan measures to be taken to prevent and combat identification and knowledge useful fune potato crops , opportunities protecting it.

The thesis is structured in two parts, the first part contains the introduction and three chapters and the second three chapters and a bibliography.

Chapter I, entitled ***"Current knowledge on entomofauna potato culture"*** comprises two chapters contain an extensive description of the research on entomofauna potato crops by chemical treatment against pests, both globally and nationally.

Starting from the fact that pests, in some years, producing significant damage, there have been numerous studies on the prevalence, description, biology, how damaging, prevention and pest of potato crops.

Chapter II, entitled ***"Description of the importance of potato culture"*** contains importance, origin and extent of spread of potato cultivation , biological peculiarities of culture and technology of cultivation of potato.

Chapter III, ***"The main pests in crops of potato"*** contains the presentation of the main features of carabidelor , life cycle and development.

Chapter IV, entitled ***"Purpose, objectives, material and methods of work"*** aims to make a significant contribution to scientific knowledge in the course of their research on potato entomofauna culture of the area under study, depending on the chemical treatment against pests.

To achieve the proposed objectives will be:

•preparation of schemes of work in the field and work surfaces each variant ;

•installation in the experimental field soil traps;

•making direct observations in the field;

•Collection of biological material by various methods:

•using soil traps Barber;

• shake method;

•sampling and analyzes specific quantification of indicators such as:

•attack frequency;

•intensity;

•the degree of pest etc.;

•preparing the material in order to identify useful species of beetles;

•analysis of biological material collected species determination and calculation of ecological indexes of pest populations and useful fauna;

•Establish specific structure, abundance, dynamics and the role of species of beetles useful potato crops;

•the calculation of the main ecological indicators:

•abundance (A), dominance (D), constant (C), the index of ecological significance (W), and so on.

•monitoring the evolution of fauna biodiversity useful for each experimental variant;

•adapting current metodicilor forecasting and warning potato crop plant protection, taking into account both useful fauna protection.

Like the original elements that bring in this research are expected as follows:

- Knowledge useful fauna of potato crops by crop technology and chemical treatment applied against pests;

- The role of each of the species useful in keeping pest below the economic damage threshold;

- Pest dynamics , moments applying chemical treatments against pests so as to achieve the best possible protection of fauna, etc. useful.

The research was carried out during the years 2011 - 2013 in ARDS Suceava and S. A. Astra Trifesti, Iasi County.

Chapter V. ***"Characterization of the natural and climatic conditions"*** provide information on the description of the natural and climatic conditions of the areas where they were carried out. Also in this chapter the data on climatic conditions and Trifesti Suceava, Iasi County, from Research 2010 – 2013.

Chapter VI, entitled " Entomofauna results collected on potato crops " presents data on the structure , dynamics and abundance entomofauna collected from potato crops in all three years of experience in the area of research.

Research conducted during 2011 - 2013 on the structure, dynamics and abundance entomofauna of potato crops , analysis of ecological parameters of insect species collected in the

area under study , the efficacy of treatments applied to control pests of potato and influence of these treatments on production.

- Untreated variant was collected in 2514 species, of which 1285 species belonged harmful entomofauna useful entomofauna 1229 species

- Variant 2 (with vegetation treatments) were collected 810 specimens , of which 407 specimens belonging to 403 species belong harmful entomofauna useful entomofauna

By using ground traps Barber, has collected a large number of untreated variant species (407 species) compared with treated variant V2 = 403 species.

- The control variant was collected a total of 1569 species, of which 817 specimens belonging to 752 species belong harmful entomofauna useful entomofauna

- Variant 2 (with vegetation treatments) was collected a number of 506 species, of which 260 species and 246 species belong harmful entomofauna useful entomofauna

- By using the shaking method revealed a large number of specimens collected from untreated variant (260 species) compared with treated variant (V2 = 246 species)

- The methods used to collect the most accurate method proved collection of barber-type traps.

- untreated variant were collected eight species abundance values between 282 species (*Anisodactylus signatus* L.) And 30 species (*Zabrus tenebrioides* Goeze.). Dominance values were classified into three classes collected species dominance (D3-3 subdominant species, D4 - one dominant species, D5 - 4 species eudominant). Constance ranged between 7.55% (*Pterostichus niger L.*.) And 35.85% (*Pterostichus cupreus L.*). By calculating ecological significance index 8 species were classified into two categories: 4 species and 4 species characteristic accessories.

- Variant 2 (with vegetation treatments) were collected 6 species abundance ranging from 93 species (*Anisodactylus signatus L* and 3 species (*Harpalus tardus Panz.*). Dominance values were classified into 3 classes collected species dominance (D2-1 species recedent D4 - one dominant species, D5 - 4 species eudominant). Consistently ranged between 1.85% (*Harpalus tardus Panz.*) and 27.78% (*Pterostichus cupreus L.*). Through ecological significance index calculation we classified 6 species into three categories: 1 accidental species, three species and two species characteristic accessories: *Anisodactylus signatus L.*, and *Aphtona euphorbiae Schr.*

- Untreated variant were collected 6 species abundance ranging from 3548 species (*Anisodactylus signatus L*) and 30 species (*Pseudoophonus rufipes Degeer.*). Dominance values were classified into 4 classes collected species dominance (D1 - 1 species subrecedent, D2 - 4

species recedente, D3 - 3 species subdominant and D5 - 1 species eudominant) species are species eudominant *Anisodactylus signatus L*. Constance ranged between 42.22% (100.00% *Harpalus distinguendus Duft.*. Through calculating ecological significance index 9 species were classified into two categories: 8 species and 1 species characteristic accessories: *Anisodactylus signatus L.*

- Variant 2 (with vegetation treatments) were collected 6 species abundance values between 537 species (*Anisodactylus signatus L*) and 17 species (*Aphton euphorbiae*). Dominance values were classified into 5 classes collected species dominance, species the species eudominant *Anisodactylus signatus L*. Constance ranged between 31.11% (*Aphtona euphorbiae Schr*.) and 100.00% (*Anisodactylus signatus L* .. The ecological significance index calculation we classified the six species in two categories: four species and two species characteristic accessories: *Anisodactylus signatus L* F ., and *Aphtona euphorbiae Schr*..

- Greatest abundance highlighted in untreated variant, the species *Anisodactylus signatus L* the two collection methods.

- Insect species collected from of potatoes culture were placed in all 5 classes of dominance: D1 - subrecedente species, D2 - recedente species, D3 - subdominant species, D4 - dominant species, D5 - eudominant species, all methods collection

- Constancy most emphasized in untreated variant, the species *Anisodactylus signatus L* the two collection methods.

- The highest ecological significance index highlighted the untreated variant, the species *Anisodactylus signatus L*., All collection methods.

- untreated variant were collected eight species whose abundance ranged from 291 species (*Staphylinus caesareus F.* and 1 copy Dominance values were classified into 5 classes collected species dominance (D1 - two species subrecedente, D2 - two species recedente, D3-3 subdominant species, D4 - one dominant species, D5 - one species eudominant). Constance ranged between 1.85% (*Pterostichus niger L.* F.) and 100.00% (*Anisodactylus signatus L* the ecological significance index calculation of the 21 species were classified into three categories: 8 species incidental accessories 9 species and 4 species.

- The variant 2 (without seed treatment, but three treatments vegetation) were collected 21 species abundance ranging from 157 species (*Anisodactylus signatus L.*) And 3 species (two species). Dominance values were classified into 5 classes collected species dominance (D1 - 7 species subrecedente, D2 - 5 species recedente, D3-5 subdominant species, D4 - one dominant species, D5 - 3 species eudominant). Constance ranged between 5.56% (2 species) and 77.78% (*Anisodactylus signatus L* By calculating ecological significance index of the 21 species were

classified into three categories: 6 species incidental, 12 species and 3 species characteristic accessories: *Anisodactylus signatus L., Longitarsus anchusae, Pterostichus cupreus L.*

- In 2011, the highest efficiency of 57.20% was recorded in fighting *Staphylinus caesareus F.* species., variant 2 (with vegetation treatments).

- Highest effectiveness, in 2012, joined the fight *Anisodactylus signatus L* species., variant 2 (with vegetation treatments) in combating species *Pterostichus niger L.* in value of 58.50%.

- In 2013, the highest efficiency was recorded in variant 2 (with vegetation treatments) in combating species *Anisodactylus signatus L* and had a value of 59.82%.

- Research during 2011 - 2013, the highest recorded efficiency in combating species *Aphtona euphorbiae Schr.*, variant 2 (with vegetation treatments) and had a value of 92.75%.

- All species, differences in the degree of attack variant treatments were highly significant negative, which indicates the importance of treatments against pests in potato

- The production achieved in 2011, the variant with chemical treatment vegetation was 13418 kg /ha to 11200kg/ha as obtained from untreated control.

- By 2012, the alternative production by chemical treatment of the vegetation was 13900 kg / ha compared with the control of variance that was 11270 kg / ha.

- The production achieved in 2013, the variant with chemical treatment vegetation was 13450 kg / ha compared de10230 kg / ha as obtained from untreated control.

- During the research, 2011 - 2013, average yields ranged from 10230kg/ha (untreated variant) and 13800 kg/ha (with vegetation treatments) between treated and untreated control variant were recorded very significant production differences.

Observed that the variants research chemical, production was higher than in the control, cee reveals the importance of chemical treatments against pests of potato.

CHAPTER VII contains the main **conclusions and recommendations** resulting from the study conducted.