

## SUMMARY

Cereals represent the group of plants with the largest spreading area in all crop areas worldwide, implicitly also in Romania. Cereals are one of the oldest plants grown in the Mediterranean basin, Central Asia, etc., about ten thousand years old.

Wheat grains are used mainly for the production of bread intended for bread making - staple food for a large number of people (according to some statistics, 35-40% of the world's population). Also, wheat grains are used for the manufacture of flour pastes, as well as raw material for other very different industries.

Straws (straws) left after harvesting have multiple uses: raw material for the manufacture of cellulose, bedding for animals, coarse fodder, organic fertilizer, incorporated as such into the soil, immediately after harvesting, or after being subjected to a composting process.

Branches - residues from the milling industry - are a highly valuable concentrated feed, rich in protein, lipids and mineral salts.

Wheat grains can also be a highly valued concentrated feed, superior to corn in terms of nutritional value, price and even productivity. The use of wheat grains as feed is less widespread in us, but is practiced in most large wheat producing countries.

The purpose of the research that was carried out was to determine with as much precision as possible the pests that affect or can affect the wheat crops in Vaslui county, the measures of prevention and control, as well as the knowledge of the useful and harmful fauna and the possibilities of its protection.

Also, a new concept has emerged, namely integrated control, which can be defined as a form of applied ecology, of dividing the populations of pests, on the one hand, and of the populations of predators and parasites on the other, within the framework of agrobiocenoses.

PhD thesis "**Researches regarding the presence of the pests in wheat crops, chemical treatments applied and existing entomofauna**" sponsors the study of the culture of wheat according to the weeping; knowledge of the current state of research on useful fauna from wheat crops in Vaslui county; identification of useful fauna from wheat crops; the mode of feeding of useful fauna from wheat crops and the chemical treatments applied.

The work will be extended to 176 pages and the course will be completed and will be completed in two parts and anonymously: the first part is "The stage is the day and the day you know it is the day and the day is ,,

including 25 of the pages, 8 tables and 10 figures and part of them all „The research center”, which comprises 125 pages, 66 tables and 25 figures.

The "state of the art and the know-how" includes two sections in which they are succinctly presented informally in the field of speciation with a degree in the field and what is the ultimate tool for interpreting it and how it is done in part of the world the "church was prepared" and he described that he had been appointed to the county of Vaslui, in which he had been presented with presents, and had been confined to the ground.

The chapter presents the purpose and the course, the course, and the course of study. Propose objects were:

1. To know the current state of research on harmful fauna from wheat crops in Vaslui County.
2. To know the current state of research on useful fauna from wheat crops in Vaslui County.
3. Identification of harmful fauna from wheat crops.
4. Identification of useful fauna from wheat crops.
5. Comparative study of useful and harmful fauna from wheat crops, depending on the pre-plant.
6. The mode of feeding of useful fauna from wheat crops and the chemical treatments applied.
7. Statistical calculation of ecological parameters such as: abundance (A), constancy (C), dominance (D) and ecological significance index (W).

To achieve the proposed objectives, several activities will be carried out, namely:

- the bibliographic study of the literature in the field, both on a global level and with us in the country;
- drawing up the working schemes in the field, as well as the surfaces of each working variant;
  - installation in the experimental field of soil traps;
  - observations made directly on the plants in the field;
  - collection of biological material by different methods: using Barber soil traps and entomological fillet;
  - taking samples and carrying out specific analyzes for quantifying some indicators, such as: frequency of attack, intensity, degree of damage, etc.
  - preparing the material in order to identify the species of harmful and useful insects collected;
  - analysis of biological material collected, species determination and calculation of ecological indices of pest populations and useful fauna.
  - calculating the main ecological indicators: abundance (A), dominance (D), constancy (C), ecological significance index (W), etc.
  - tracking the evolution of the entomofauna biodiversity for each experimental variant;

- adaptation of current forecasting and warning methods for the protection of plant crops of wheat against pests, considering the protection of useful fauna.

The chapter IV "Result and Discussion" presents the study of its structure, of its existence and of some of its areas of study and of its study. For the performance of the cereal, and for the cultivation of the wheat, or for the use of the sun in the month of April, in the month of April, Monday.

For the purpose of research, or for the three purposes:

- variant 1, wheat after wheat;
- variant 2, wheat after sunflower;
- variant 3, wheat after corn.

In 2016, three warnings were issued on 06.04., 27.04. and 31.05, by the Vaslui Phytosanitary Office, regarding the control of leaf diseases and pests in wheat culture and 3 chemical treatments were applied:

- Treatment 1, on 10.04., In the phenophase end of wheat germination, to control pathogens using Zizan products 0.1 l / ha, Nuance 0.02 kg / ha, Mycoguard 1 l / ha and Silwet 0.3 l / Ha.

- Treatment 2, from 01.05, was applied at the end of the elongation of the wheat straw, in order to combat the cereal buns (Eurygaster integriceps), using Cyperguard 0.06 l / ha.

- Treatment 3, from 02.06, was applied when 50% of the inflorescences are visible, for the control of the pests of cereal (Eurygaster integriceps) using Vantex 0.08 l / ha, and for the control of the pathogens were used Propico 0 products , 5 l / ha and Zizan 0.25 l / ha.

In 2017, three warnings were issued to the wheat crop and 4 chemical treatments were applied:

- Treatment 1, from 23.03s, was applied at the end of the wheat twinning, to control the pathogens using the products Dafne 0.6 l / ha and Cosavet 2 kg / ha.

- Treatment 2, from 07.04 was applied at the beginning of the elongation of the wheat straw

- Treatment 3, from 12.05 was applied at the end of the wheat straw elongation, to control the pathogens using the products Makler 0.9 l / ha and Ambrossio 0.4 l / ha.

- Treatment 4, as of 14.06, was applied when 50% of the inflorescences are visible, for the control of cereal bite (Eurygaster integriceps) using the product Delcaps 0.1 l / ha, and for the control of the pathogens were used the Makler 0 products, 9 l / ha and Ambrossio 0.4 l / ha.

The structure, dynamics and abundance of the entomofauna collected from wheat crops using Barber soil traps in 2016 at V 1, wheat after wheat, were made a number of 5 collections of the entomological material, 649 specimens of beetles belonging to 53 were collected. of species.

From the analysis of the dynamics of the entomofauna of collected beetles, there is a large variation in the number of copies from one collection to another. The largest number of specimens, 252 beetles, was collected in April, at harvesting I a, and the fewest copies, in number 60, were collected in June at harvesting IVa.

Abundance (A), Constance (C), Dominance (D) and Ecological Significance Index (W) were calculated for these species.

- the highest abundance was 21 species, of which we can notice: *Drasterius bimaculatus* (115 specimens), *Opatrum sabulosum* (65 specimens), *Epicometis hirta* (58 specimens), *Formicomus pedestris* (38 specimens), *Pentodom idiota* (34 specimens), *Dermestes laniarius* (28 specimens), *Pedinus femoralis* (23 specimens), *Tanymecus dillaticolis* (23 specimens) and *Anthicus humeralis* (19 specimens).

- the consistency of the collected beetle species had values between 53.33 and 3.33, and the species with the highest values were: *Pentodom idiota* (53.33), *Opatrum sabulosum* (50.00), *Drasterius bimaculatus* (46, 66), *Formicomus pedestris* (33.33), *Dermestes laniarius* (33.33) and *Tanymecus dillaticolis* (30.00). The lowest values of constancy (3.33) had 11 species.

- the dominance had the highest values in the species: *Drasterius bimaculatus* (18.46), *Opatrum sabulosum* (10.43), *Epicometis hirta* (9.31), *Formicomus pedestris* (6.09), *Pentodom idiota* (5.45) and *Dermestes laniarius* (4.49).

- the ecological significance index (W) recorded values between 8.6134 and 0.0053. Values greater than 1.00 were recorded in 6 species: *Drasterius bimaculatus*, *Opatrum sabulosum*, *Formicomus pedestris*, *Pentodom idiota*, *Epicometis hirta* and *Dermestes laniarius*.

In variant 2, wheat after sunflower bloom, a number of 5 collections of the material were made, with a total of 770 specimens of beetles belonging to 62 species.

From the analysis of the dynamics of the entomofauna of collected beetles, it can be seen that the largest number, 360 beetles, was collected in April, at the harvesting of Ia, and the fewest, 33 samples, were collected in June at the harvesting of aVa.

As regards the values of the ecological indices it follows that:

- The most abundant species were *Phyllotreta nemorum* (115 specimens), *Epicometis hirta* (111 specimens), *Opatrum sabulosum* (70 specimens), *Anthicus antherinus* (57 specimens), *Pentodom idiota* (40 specimens), *Drasterius bimaculatus* (29 specimens), *Coladera nigrita* (28 specimens) and *Formicomus pedestris* (22 specimens).

- the consistency of the collected beetle species had values between 56.66 (Pentodom idiot) and 3.33 (13 species).

- the dominance had the highest values in 6 species: *Phyllotreta nemorum* (17.80), *Epicometis hirta* (17.18), *Opatrum sabulosum* (10.83), *Anthicus antherinus* (8.82), *Pentodom idiota* (6.19) and *Dermestes laniarius* (4.49).

- the ecological significance index (W) recorded values between 9.4927 and 0.0049, the highest being in the species: *Phyllotreta nemorum*, *Epicometis hirta*, *Opatrum sabulosum*, *Anthicus antherinus*, *Pentodom idiota*, *Colodera nigrita* and *Formicomus pedestris*.

In variant 3, wheat after maize, a number of 5 collections of the entomological material were made, being collected 770 specimens of beetles belonging to 62 species.

From the analysis of the dynamics of the entomofauna of collected beetles, there is a large variation in the number of species and individuals from one collection to another. The largest number of specimens, 315 beetles, was collected in May, at the second harvest, while the fewest copies, in number 39, were collected in June at the IVa harvest.

As regards the values of the ecological indices it follows that:

- The most abundant species were: *Conosoma bipunctatus* (264 specimens), *Pteryngium crenatum* (62 specimens), *Dermestes laniarius* (57 specimens), *Anthicus floralis* (31 specimens), *Formicomus pedestris* (31 specimens), *Pterostichus koyi* ssp. *marginalis* (29 copies), *Opatrum sabulosum* (21 copies) and *Epicometis hirta* (18 copies).

- the consistency of the collected beetle species had values between 56.77 and 3.33, and the species with the highest values were: *Conosoma bipunctatus* (56.77), *Pterostichus koyi* ssp. *marginalis* (50.00), *Pentodom idiota* (40.00), *Pteryngium crenatum* (40.00), *Anthicus floralis* (30.00) and *Formicomus pedestris* (30.00). The lowest values of the constancy (3.33) had a number of 19 species.

- the dominance had the highest values in the species: *Conosoma bipunctatus* (34.6), *Pteryngium crenatum* (8.13), *Dermestes laniarius* (7.47), *Anthicus floralis* (4.06), *Formicomus pedestris* (4.06) and *Pterostichus koyi* ssp. *marginalis* (3.80).

- the ecological significance index (W) recorded values between 19.6078 and 0.0043, the largest being in 5 species: *Conosoma bipunctatus*, *Pteryngium crenatum*, *Anthicus floralis*, *Pterostichus koyi* ssp. *marginalis*, *Formicomus pedestris*.

The observations regarding the structure, dynamics and abundance of the entomofauna collected in the 3 experimental variants in 2016 highlight the following aspects:

- 2066 specimens were collected of which: 649 specimens in V1 belonging to 53 species, 647 specimens in V2 belonging to 45 species and 770 specimens in V3 belonging to 62 species.

- looking at the 3 variants of pre-herbal plants as a whole, it is observed that the number of specimens collected in the case of variant V1 represents 31.4% of the total species, 31.3% in the case of variant V2 and the rest of 37.3% belongs to variant V 3.

- from the analysis of the dynamics of the entomofauna of collected beetles, there is not a large variation in the number of species and individuals from one variant to another.

In 2017, in variant 1, wheat after wheat, a number of 7 collections of the entomological material were made, being collected 920 specimens of beetles belonging to 56 species. From the analysis of the dynamics of the entomofauna of collected beetles, there is a large variation in the number of copies from one collection to another. The largest number of specimens, 232 beetles, was collected in May, at the first harvest, and the fewest, in number 50, were collected in August at the seventh harvest.

Regarding the values of the ecological indices it follows that:

- the most abundant species were: *Opatrum sabulosum* (237 specimens), *Dermestes laniarius* (213 specimens), *Otiorrhynchus pinastri* (93 specimens), *Formicomus pedestris* (88 specimens), *Anthicus humilis* (45 specimens), *Anthicus floralis* (34 specimens) specimens), *Pteryngium crenatum* (24 specimens) and *Coccinella 7 punctata* (20 specimens).

- the consistency of the coleopter species collected had values between 73.81 (*Opatrum sabulosum*) and 2.38 (23 species).

- the dominance had the highest values in the species: *Opatrum sabulosum* (26.54), *Dermestes laniarius* (25.87), *Otiorrhynchus pinastri* (10.41), *Formicomus pedestris* (9.85), *Anthicus humilis* (5.04) and *Anthicus floralis* (3.81).

- The ecological significance index (W) recorded values between 19.5891 and 0.0026, the highest being in the species: *Opatrum sabulosum*, *Dermestes laniarius*, *Otiorrhynchus pinastri*, *Formicomus pedestris*, *Anthicus humilis* and *Anthicus floralis*.

In variant 2, wheat after sunflower flowering, a number of 7 collections of the material were made, with a total of 635 specimens of beetles belonging to 51 species. , 186 beetles, was collected at the beginning of the month, at the IIIa harvest, and the fewest, 31 copies, were collected in August at the VII harvest.

As regards the values of the ecological indices it follows that:

- The most abundant species were: *Dermestes laniarius* (187 specimens), *Opatrum sabulosum* (104 specimens), *Otiorrhynchus pinastri* (87 specimens), *Formicomus pedestris* (57 specimens), *Anthicus humilis* (20 specimens), *Anthicus floralis* (18 specimens) specimens), *Conosoma bipunctata* (16 specimens) and *Coccinella 7 punctata* (16 specimens).

- the consistency of the coleopter species collected had values between 71.43 (*Opatrum sabulosum*) and 2.38 (18 species).
- the dominance had the highest values in the species: *Dermestes laniarius* (29.73), *Opatrum sabulosum* (16.53), *Otiorrhynchus pinastri* (13.83), *Formicomus pedestris* (9.06), *Anthicus humilis* (3.18).
- The ecological significance index (W) recorded values between 19,1134 and 0.0038, the highest being in the species: *Dermestes laniarius*, *Opatrum sabulosum*, *Otiorrhynchus pinastri*, *Formicomus pedestris*, *Anthicus humilis* and *Anthicus floralis*.

In variant 3, wheat after maize, a number of 7 collections of the entomological material were made, being collected 775 specimens of beetles belonging to 64 species. of individuals from one collection to another. The largest number of specimens, 166 beetles, was collected in May, at the harvesting of Ia, and the fewest copies, in number of 23, were collected in August at the harvesting of the aVII a.

As regards the values of the ecological indices it follows that:

- the most abundant species were *Opatrum sabulosum* (152 specimens), *Otiorrhynchus pinastri* (125 specimens), *Dermestes laniarius* (112 specimens), *Idiochroma dorsalis* (63 specimens), etc.
- the consistency of the species of coleopterans collected had values between 83.33 (*Otiorrhynchus pinastri*) and 2.38 (29 species).
- the dominance had the highest values in the species: *Opatrum sabulosum* (19.95), *Otiorrhynchus pinastri* (16.40), *Dermestes laniarius* (14.70), *Idiochroma dorsalis* (8.27), *Formicomus pedestris* (8.27) .
- The ecological significance index (W) recorded values between 14.2502 and 0.0030, the highest being in the species: *Opatrum sabulosum*, *Otiorrhynchus pinastri*, *Dermestes laniarius*, *Idiochroma dorsalis*, *Formicomus pedestris*, *Pterygium crenatum*.

The observations regarding the structure, dynamics and abundance of the entomofauna collected at the 3 experimental variants in 2017 highlight the following aspects:

- 2330 copies were collected of which: 920 copies in V1 belonging to 56 species, 635 copies in V2 belonging to 51 species and 775 copies in V3 belonging to 64 species.
- looking at the 3 variants of pre-herbal plants as a whole, it is observed that the number of specimens collected in the case of V1 variant represents 39.5% of the total species, 33.3% belongs to the V 3 variant, and the rest of 27.2% to the V2 variant.
- from the analysis of the dynamics of the entomofauna of collected beetles, it is found that V 1 had the highest number of collected specimens and V 3 the largest number of collected species.

The structure, dynamics and abundance of the entomofauna collected from the wheat crops in 2016 by the threading method were determined by analyzing a number of 5 threads in the three experimental variants, being collected 147 specimens, the most abundant species being:

- at V1, wheat after wheat, *Coccinella 7 punctata* (20 copies), *Epicometis hirta* (8 copies), *Anthicus antherinus* (6 copies), *Anthicus floralis* (4 copies), *Tanymechus dilaticollis* (3 copies).

- at V2, wheat after sunflower, *Coccinella 7 punctata* (16 specimens), *Epicometis hirta* (8 specimens), *Spermophagus sericeus* (4 specimens), *Anthicus floralis* (3 specimens), *Otiorhynchus laevigatus* (3 specimens).

- at V3, wheat after corn, *Coccinella 7 punctata* (27 copies), *Anthicus humeralis* (9 copies), *Cantharis cryptica* (9 copies), *Dermestes laniarius* (3 copies), *Tanymechus dilaticollis* (3 copies).

In 2017, through the threading method, 7 threads were applied to the three experimental variants, 310 copies were collected, the most abundant species being:

- at V1, wheat after wheat, *Aelia spp.* (27 copies), *Coccinella 7 punctata* (20 copies), *Eurygaster spp.* (20 copies), *Cantharis cryptica* (12 copies), *Anthicus humilis* (9 copies), *Apion apricans* (7 copies).

- at V2, wheat after sunflower, *Eurygaster spp.* (23 specimens), *Coccinella 7 punctata* (19 specimens), *Aelia spp.* (11 specimens), *Bruchus affinis* (10 specimens), *Cantharis cryptica* (7 specimens).

- at V3, wheat after maize, *Eurygaster spp.* (21 specimens), *Coccinella 7 punctata* (20 specimens), *Cantharis cryptica* (13 specimens), *Aelia spp.* (9 specimens), *Pteringyum crenatum* (9 specimens), *Metabletus truncatulus* (7 copies).

Depending on the food they consume, the beetle species have been grouped into 3 categories:

- useful species that are predatory, feeding on insects or other invertebrates;

- species cited in the specialized literature as harmful to some cultivated plants;

- species of beetles that do not cause damage to the cultivated plants, but which have a phytophagous diet.

In 2016, by analyzing the collected material, it follows that:

- 29 species were collected, totaling 850 specimens of beetles are cited in the specialized literature as harmful, representing 37.03%.

- The useful species of collected beetles were 28, with a total of 698 copies, representing 30.41% of the total. (53 copies), *Coccinella 7 punctata* (18 copies).

- 38 species totaling 747 beetle specimens are cited in the literature as not harmful and represent 32.54%

In 2017, from the analysis of the collected material, in relation to the food spectrum, the situation is as follows:

- a number of 32 species totaling 970 beetle specimens are cited in the specialized literature as harmful and represent 42.50%.

- the useful species of collected beetles were 28, with a total of 289 copies, representing 12.66% of the total.

- a number of 34 species totaling 1022 beetle specimens are cited in the literature as not harmful, representing 44.79%.