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# Fauna of Zoophilic Insects and the Effect of Pyrethroid Cypermethrin on Them

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**Abstract:** The article presents the results of determining the fauna of zoophilous mosquitoes and studying the effect of Cypermethrin 25% (c.e.) on them.

**Keywords:** Zoophile, insect, drug, solution, concentrate, emulsion, insecticide, disinfection, pest control.

**Relevance of the topic.** Zoophilic insects (Insecta), belonging to the family of parasitic arthropods (Arthropoda), are widespread in almost all biocenoses of the earth in farm buildings close to humans, livestock buildings and ecotopes, and cause serious socio-economic damage as carriers of many parasitic diseases of farm animals and people. In zoobiocenoses, parasitic zoophilic insects parasitize humans and domestic animals and are the cause of the spread of many transmissible parasitic diseases. It is necessary to carry out disinfection and disinfestation measures against these especially harmful parasites without adversely affecting the environment and human health.

**Materials and research methods.** Studies on the seasonal migration of zoophilic insects in zoobiocenoses were carried out in the administrative building of the Research Institute of Veterinary Medicine (ecological corner), a new Belarusian insectoacaricidal drug cypermethrin 25%. In modern biomethodology and veterinary medicine, such **studies** as biological, ecological, entomological, zoological, biodiverse and others are accepted. "Guidelines for the fauna of the USSR" (edited by G.E. Bei-Bienko, G.S. Medvedeva, A.A. Shtakelberg, Z.V. Abramova, O.A. Beklemisheva Karlinskaya, M.E. Lobashev, D. E. Koryakova, I.F. Zhimulev) and other books and manuals were identified using tables and literary sources.

**Purpose of the study.** The purpose of scientific research was to study the seasonal migration of zoophilous insects living in zoobiocenoses and to identify effective pyrethroid preparations against these parasitic insects.

**Research results.** Experimental work was carried out in the ecological corner of the Research Institute of Veterinary Medicine, in order to determine the biodiversity of zoophilic and synanthropic insect species belonging to the Arthropoda type, Insecta class, Diptera family, the ecological corner was disinfected with a 0.025% aqueous emulsion of a new Belarusian insectoacaricide - cypermethrin 25% drug. In the laboratory of arachnoentomology, research work was carried out to study the dynamics of migration and the development cycle of parasitic insects on a scale of months during the year. Exophilic insects were collected daily with tweezers in test tubes. Each sample was labelled. On the label, a numerical sign (number), place, time, and type were determined. The label was written on white paper with a simple black pen or pencil.

Time, insect species, location, number of adults, sex, indoor air temperature and humidity, and outdoor air temperature and humidity were recorded in a workbook (or field book).

**Seasonal migration of exophilic synanthropic and zoophilic insects**
**Table 1**

| | Seasonal migration 2021 (months) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status of biodiversity | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII | Total |
| **A.DIPTERA**<br>**I. Muscidae**<br>1.S. calcitrans | | | | | | 1 | 3 | 2 | | 1 | | | 7 |
| 2.F.canicularis | | | | | 1 | 20 | 10 | 3 | | | 1 | | 35 |
| 3. F. scalaris | | | 1 | 2 | 3 | 30 | 50 | 4 | 5 | 1 | | | 96 |
| 4. F. incisurata | 3 | 2 | | | 2 | 25 | 30 | 4 | 4 | | | | 70 |
| 5. M. stabulans . | | | 3 | | 4 | 25 | 50 | 3 | 2 | 4 | | | 91 |
| 6.M. simplex | | | | | | 3 | | | | 3 | 1 | | 7 |
| 7. M. assimilis | | | | | | 2 | 1 | | | | | | 3 |
| 8. D.asiatica | | | 3 | | | 1 | 1 | | | | | | 5 |
| 9. L.irritans | | | | | | 1 | 1 | | | 1 | | | 3 |
| 10. F. leucosticta | | | | 1 | 1 | 25 | 10 | 1 | | | | | 38 |
| 11. L. titillans | | | | | | 2 | 1 | 1 | | | | | 4 |
| 12. M. domestica | | | 1 | 1 | 2 | 4 | 6 | 2 | 1 | 1 | 1 | | 20 |
| **II. Calliphoridae**<br>13. C. vicina | | 2 | 1 | 1 | 3 | 60 | 40 | 15 | 8 | 2 | 1 | | 133 |
| 14. P. rudis | | 1 | | | 2 | 4 | 3 | | | 2 | | . | 12 |
| 15. L. sericata | | | | | | 3 | 5 | 1 | 2 | | | | 11 |
| 16. P. regina Mg | | | | | | 1 | 2 | | | | | | 5 |
| 17. H.dentipes | | | | | | | 2 | 3 | 1 | | | | 6 |
| **III. Sarcophagidae**<br>18. R. striata | | | | | | | 2 | 4 | | | | | 6 |
| 19. B. maculata | | | | | | 4 | 10 | 3 | 1 | | | | 18 |
| 20.B.haemorrhoidalis | | | | | | 3 | 6 | 2 | | | | | 11 |
| **IV. Drosophilidae**<br>21. D. melonagaster | | | 1 | | | 1 | 1 | | | | | | 3 |
| 22. D. funebris | | | 1 | | | 1 | 1 | | | | | | 3 |
| **V. Chloropidae**<br>23. E. cornuta. Fll | | | | | | | 1 | | | | | | 1 |
| **VI. Piophilidae**<br>24. P.casie L | | | | | | 1 | | | | | | | 1 |
| **VII. Syrphidae**<br>25. E. tenax . | | | | | | 3 | 2 | | | | | | 5 |
| **VIII. Milichidae**<br>26. M. glabra | | | | | | | 2 | | | | | | 2 |
| **IX Simuliidae**<br>27. O. ornata. Mg | | | | | | 1 | | | | | | | 1 |
| TOTAL | | | | | | | | | | | | | 594 |

**We met throughout the year**

**Table 2**

| Dominant species | Subdominant species | Few quantitative species |
|---|---|---|
| F. scalaris | F. leucosticta | S. calcitrans |
| F. incisurata | F. canicularis | M. simplex |
| M. stabulans | P. rudis | L. irritans |
| C. vicina | L. sericata | E. cornuta. Fll |
| | B. haemorrhoidalis | H. dentipes |
| | M. domestica | M. assimilis |
| | B. maculata | D.asiatica |
| | | P. regina |
| | | R. striata |
| | | L. titillans |

| | | |
|---|---|---|
| | | D. funebris |
| | | P. casei |
| | | D. melonagaster |
| | | E. tenax |
| | | O. ornata. Mg |
| | | M. glabra |
| **4 types** | **7 types** | **16 types** |

**Distribution of zooparasitic insects in zoobiocenoses**

**Table 3**

| № | Family name | The total amount collected | Number of generations | Number of species | Degree of extensiveness in % |
|---|---|---|---|---|---|
| 1 | Muscidae | 379 | 6 | 12 | 63,80 |
| 2 | Calliphoridae | 167 | 5 | 5 | 28,11 |
| 3 | Sarcophagidae | 35 | 3 | 3 | 5,89 |
| 4 | Drosophilidae | 3 | 1 | 2 | 0,51 |
| 5 | Chloropidae | 1 | 1 | 1 | 0,17 |
| 6 | Piophilida**e** | 1 | 1 | 1 | 0,17 |
| 7 | Syrphidae | 5 | 1 | 1 | 0,84 |
| 8 | Milichidae | 2 | 1 | 1 | 0,34 |
| 9 | Simuliidae | 1 | 1 | 1 | 0,17 |
| | Total | 594 | 22 | 27 | 100 |

In the course of the research, it was found that zoophilic and synanthropic insects belonging to the Arthropoda type, the Insecta class, the Diptera family, 27 zoophilic insect species, such as C.vicina, F.scalaris, M.stabulans, are widespread in the ecological zone throughout the year. F.incisurata met especially a lot. In the observed ecosystem, 4 species of F.scalaris, F.Incisurata, M.stabulans, C.Vicina were identified as dominant veterinary and sanitary, 6 subdominant and 14 rare species of epizootological significance. Of these, 19 species turned out to be mechanical spreaders of infectious and parasitic diseases.

The activity of zoophilous insects in the ecological corner decreased in May due to the weather change. The maximum number of zoophilic insects was observed in June, July, August. It was found that in the remaining months it decreased.

**Conclusion**

In the ecological corner, 594 species were collected, 27 species of zoophiles, synanthropes, insects belonging to 9 Diptera families and 22 genera were identified.

At the same time, it was found that 63.80% of the total number of collected insects are representatives of the Muscidae family (species) and 28.11% are representatives of the Calliphoridae family and are more common in June and July.

A 0.025% concentration of cypermethrin 25% (a.e.) was found to be 100% insecticidal when used against bestial mosquitoes.

By determining the seasonal dynamics of zoophilic insects, it will be possible to determine measures to combat them.

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