



ACADEMY OF SCIENCES OF MOLDOVA
SECTION OF NATURAL AND EXACT SCIENCES
INSTITUTE OF ZOOLOGY



VIII-th International Conference of Zoologists

**ACTUAL PROBLEMS OF PROTECTION
AND SUSTAINABLE USE OF THE
ANIMAL WORLD DIVERSITY**



10-12 OCTOBER 2013

Book of Abstract



Chisinau – 2013





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The materials of VIII-th International Conference of Zoologists „**Actual problems of protection and sustainable use of animal world diversity**” organized by the Institute of Zoology of the Academy of Sciences of Moldova are a generalization of the latest scientific researches in the country and abroad concerning the diversity of aquatic and terrestrial animal communities, molecular-genetic methods in systematics, phylogeny, phylogeography and ecology of animals, taxonomy and evolution of animals, structure and dynamics of animal populations from natural and anthropized ecosystems, population functioning and animal role in ecological equilibrium maintenance, monitoring, evaluation of threats, and assessment of risks of aquatic ecosystems, biological control in regulation of pests number, invasive animal species, their ecological and socio-economic impact, protection of rare, endangered and vulnerable animal species under conditions of anthropogenic pressing intensification

The proceedings are destined for zoologists, ecologists, ethologists and for professionals in the field of protection and sustainable use of natural patrimony.

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Locality	№ of specimens	Researched <i>aphids</i> species and their host plants								
		I	II	III	IV	V	VI	VII	VIII	IX
Vinogradovca (Taraclia)	14	2	3	5	0	0	4	0	0	0
Total	93	13	3	18	17	17	14	1	10	0
Total in the country	520	355	59	27	24	18	20	1	10	6
%		68,2	11,3	5,2	4,6	3,4	3,8	0,2	1,9	1,1

Legend: **I** – *Chromaphis juglandicola*; **II** – *Aphis pomi*; **III** – *Hyalopterus pruni*; **IV** – *Myzus cerasi*; **V** – *Brachycaudus helichrysi*; **VI** – *Aphids* on wild plants; **VII** – *Aphids* on *Zea mays*; **VIII** – *Aphids* on *Quercus pubescens*; **IX** – Fruits of *Morus alba*, *M. nigra*.

STUDY CONTRIBUTIONS REGARDING FORMS OF *HARMONIA* *AXYRIDIS* IN THE REPUBLIC OF MOLDOVA

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The species *Harmonia axyridis* is an outstanding ladybug thanks to variations of body colours, spots size, and spots count of the elytra which divided this species in many forms. Therefore, in Russia and Ukraine this coccinellid beetle is called harlequin ladybird, changeable or with 19 points, etc. On the strength of the increased population density of the first generation in 2013, we decided to study the relation of these forms according host plant of the aphid which are trophic base of multicoloured Asian lady beetle.

From the results shown in Tab. 1 can be see that the species had developed enough (520 specimens) for to undertake research regarding forms and life stages: larvae – 77 specimens or 14,8%; pupa – 22 (4,2%); pupal exuvia – 133 (25,5%); imago – 288 (55,3%). These specimens were collected in different stages from different plants attacked by aphids or not (agricultural: 7 – walnut, apple, plum, cherry, sunflower, mulberry – fruit; forest: oak and *Ulmus* spp; on spontaneous grasses (*Onopordum acanthium*, *Artemisia absinthium*, *Cirsium serrulatum*, *Rosa canina*, *Verbascum thapsus*, *Achillea millefolium*, *Humulus lupulus*).

The most representative conclusions about forms of harlequin ladybird are based on nut and apple aphid where *H. axyridis* had developed: 216 specimens or 60,8 % on the walnut tree and 38 (64,4%) on the apple tree. Within multicolored Asian lady beetle collected on the nut tree prevailed the next forms: *H. axyridis* var. *novemdecimsignata* – 88 specimens (40,7%); *H. a.* var. *siccoma* – 55 (25,4%); *H. a.* var. *succinea* – 54 (25%); *H. a.* var. *spectabilis* – 14 (6,4%) and *H. a.* var. *conspicua* – 5 (2,3%). On the apple tree were recorded *H. a.* var. *siccoma* and *H. a.* var. *novemdecimsignata* by 13 specimens (34,2% for each),

H. a. var. succinea – 8 (21,0%), *H. a. var. spectabilis* – 3 (7,8%) and *H. a. var. conspicua* just one specimens (2,6%).

From general analysis of *H. axyridis* from researched plants prevailing next forms on the decrease: *H. a. var. novemdecemsignata* with 120 specimens respectively 41,6%; the next one is *H. a. var. succinea* – 79 (27,4%), *H. a. var. siccoma* – 75 (26%), *H. a. var. spectabilis* – 18 (6,2%) and *H. a. var. conspicua* – 6 (2,0%). Specimens of *H. a. var. novemdecemsignata* have two obvious colors: yellow and red (most spectacular) and size of spots (especially from the center of elytra) frequently presents like points, so it becomes more difficult to discern and to distinguish by the *H. a. var. succinea*.

The general conclusion is that one the dominant forms are *H. a. var. novemdecemsignata* and *H. a. var. succinea*, indifferent of host plants of aphid.

Tabelul 1.

The forms of Harmonia axyridis according to the trophic spectrum (Generation 1, 2013)

Aphid species and fruits / host plant	Specimens collected on the host plants	Recorded exemplars / %				<i>Harmonia axyridis</i> var. / %				
		Larvae	Pupae		imago	<i>siccoma</i>	<i>succinea</i>	<i>novem-decem-signata</i>	<i>spectabilis</i>	<i>conspicua</i>
			live	Exuvia						
<i>Chromaphis juglandicola</i> / <i>Juglans regia</i>	355	57	16	66	216	55	54	88	14	5
	%	16,0	4,5	18,5	60,8	25,4	25,0	40,7	6,4	2,3
<i>Aphis malus</i> / <i>Malus domestica</i>	59	14	0	7	38	13	8	13	3	1
	%	23,7	0	11,8	64,4	34,2	21,0	34,2	7,8	2,6
<i>Hyalopterus pruni</i> / <i>Prunus domestica</i> , <i>P. cerasifera</i>	27	0	0	19	8	2	2	3	1	0
	%	0	0	70,3	29,6	25,0	25,0	37,5	12,5	0
<i>Myzus cersai</i> / <i>Cerasus avium</i>	24	0	0	24	0	0	0	0	0	0
	%	0	0	100	0	0	0	0	0	0
Brachycaudus helichrzi / <i>Helianthus annuus</i>	18	5	4	5	4	0	0	4	0	0
	%	27,7	22,2	27,7	22,2	0	0	100	0	0
Aphids / <i>Zea mays</i>	1	0	0	0	1	0	0	1	0	0
	%	0	0	0	100	0	0	100	0	0
Aphids / <i>Quercus pubescens</i>	10	0	0	1	9	3	2	4	0	0
	%	0	0	10,0	90,0	33,3	22,2	44,4	0	0
Aphids / Wild plants	20	1	2	11	6	0	2	4	0	0
	%	5,0	10,0	55,0	30,0	0	33,3	66,6	0	0
Fruits / <i>Morus nigra</i> , <i>M. alba</i>	6	0	0	0	6	2	1	3	0	0
	%	0	0	0	100	33,3	16,6	50,0	0	0
Total specimens / %	520	77	22	133	288	75	79	120	18	6
	%	14,8	4,2	25,5	55,3	26,0	27,4	41,6	6,2	2,0

The invasive species *Harmonia axyridis* is investigated according to framework Project funded by NEF: 2/3056-4373 from 05.02.2013 «Identification of invasive animal species in Moldova and assess their impact on ecosystems».

ANTHELMINTIC TREATMENT STRATEGY AND PREVENTION OF CONTAMINATION WITH *TOXOCARA SSP* IN MOLDOVA

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Summary. There are two reasons for *Toxocara* control: one is to prevent human infection and another is to reduce the risk of infection to pets. *Toxocara* eggs are very resistant to adverse environmental conditions and remain infective for years. Since no practical methods exist for reducing environmental egg burdens, prevention of initial contamination of the environment is the most important tool. This can be achieved by taking measures such as eliminating patent infections in dogs and cats, preventing defecation by pets in public areas, hygiene, and education of the public.

Materials and methods. High degrees of environmental contamination can be expected in places where dogs and cats are concentrated, such as training schools, animal shelters and breeding kennels. No correlation could be established between pet ownership and the presence of *Toxocara* spp. eggs in suburban gardens. Household garden soil was found to be a potentially greater source of *Toxocara* infection than soil in public green areas.

A decrease in contamination can be achieved by methods including: restriction of uncontrolled dogs and cats, cleaning up faeces from soil and on pavements by dog owners, preventing access of dogs and cats to public places (especially children's playgrounds) and by use of strategic anthelmintic treatment of dogs and cats with emphasis on puppies, kittens, nursing bitches and queens. *Toxocara* eggs are not destroyed by composting and can survive sewage treatment.

A complicating factor in the prevention of environmental contamination is the presence of infected wild and stray canines and felines. In Europe the wild fox is nowadays more common in urban areas and stray cats are familiar in every neighborhood. In surveys in the Cahul, foxes and stray cats were found to be heavily infected with *Toxocara*

Results and discussion. The most serious and concentrated source of infection are dogs that eat litter, bitches that nurse and puppies aged between 3 weeks and 6 months. A major aim of long-term prophylactic treatment programmes is to suppress *Toxocara canis* egg-output throughout the whole of puppyhood using a multidose schedule. Anthelmintic treatment should be started before the age of 3 weeks. Because milk transmission occurs continuously for at least 5 weeks post partum, repeated treatments are necessary. Larvae that reach the intestine need

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