Приложение 13

РЕЗЮМЕТА НА ПУБЛИКАЦИИТЕ НА ГЛ.АС. Д-Р КАТЯ ГЕОРГИЕВА ТРЕНЧЕВА

За участие в конкурс за академична длъжност „Доцент“ към катедра „Растителна защита“, област на висшето образование 6. Аграрни науки и ветеринарна медицина; професионално направление 6.2 Растителна защита, научна специалност „Растителна защита /Ентомология/“, по дисциплината „Неприятели по културните растения”

I.РЕЗЮМЕТА НА ПУБЛИКАЦИИ СВЪРЗАНИ С ДИСЕРТАЦИОННИЯ ТРУД

1. **Trencheva, K.** (2004). Life history of *Pseudaulacaspis pentagona* (Targioni-Tozzetti) (Homoptera: Diaspididae) on *Prunus persica var. nectarina*. Proceedings of the X International symposium of scale insect studies: p. 249-255
White peach scale, *Pseudaulacaspis pentagona* (Targioni Tozzetti), occurs in the south–western parts of Bulgaria. In this region it develops successfully on species of *Morus*, *Prunus* and *Actinidia*. Damage is mainly on trunks and branches of the host plants. The biology of white peach scale was studied from February to November 2001 - 2003 on *Prunus persica* var. *nectarina*. White peach scale has three generations per year and overwinters as a fertile females. Ovipositing females from the overwintering generation were observed at the end of March (22.03.2001), at the beginning of April (7.04.2002) and at the end of April (28.04.2003). Oviposition occurred for about 60 days for the overwintering generation and for about 30 days for each of the summer generations. Crawlers appear about 20 days after oviposition for the overwinter generation and about 10 days after for the summer generations. Crawlers can be found for 40 days for the overwintering generation and nearly 20 days for the summer generations. Development of the first instar takes 20 to 30 days, depending on a complex of abiotic factors. The duration of development for the second instar is nearly the same as for the first instar. Adult females take three weeks to reach sexual maturity. The peak of flight period of males is about 10 days. **Key words:** white peach scale, life history, temperature

2. **Trencheva, K.,** G. Gerasimov (2013). Correlation between Size of Females of White Peach Scale *Pseudaulacaspis pentagona* (Targioni Tozzetti) (Hemiptera: Diaspididae) from overwintering generation and the quantity of generated oocytes in their egg tubes on *Prunus persica* var. *nectarina.* Plant sciece, 50, 107-114
Analysis of the results of mathematical processing of experimental data obtained shows that there is no clear correlation between size of females of *Pseudaulacaspis pentagona* from overwintering generation and the quantity of generated oocytes in their egg tubes. As a major argument in support of both foregoing statement outlining analytical results obtained for the Pearson correlation coefficient R_{xy} measurements as follows - 0,14; 0,09; 0,28. The obtained values for the Pearson correlation coefficient R_{xy} are extremely low according to both empirical standard scales. This shows that if correlation exists, it is slight and would rather random nature. **Key words:** *Pseudaulacspis pentagona,* Pearson correlation coefficient, correlation

II.МОНОГРАФИИ И ГЛАВИ ОТ КНИГИ

3. **Trencheva, K.,** G. Trenchev., R. Tomov, S. Ivanova, Wu San An (2011). The scale insects (Hemptera, Coccoidea) of Bulgaria. AS OOD - Sofia, 48 pp. **(монография)**
This monograph is the final output of a project entitled “Invasive scale insects on ornamental plants in Bulgaria and China”, funded by Ministry of Education and Science of the Republic of Bulgaria. It provides information on 145 scale insects belonging to 65 genera and host plants on which they were found. The list is based on the bibliographic sources and personal observation from the authors. Representatives from 10 families have been reported in Bulgaria, the most numerous of which are the Diaspididae (48), Pseudococcidae (33), Coccidae (33), Eriococcidae (13), Asterolecaniidae (6), Kermesidae (4), Orteziidae (3), Matsicocciade (2), Monophlebidae (1), Cerococcidae (1) and Putoidae (1). At present, 38 species of the total scale fauna in Bulgaria are with alien origin.

4. Томов, Р., К. Тренчева, Г. Тренчев (2010). Насекоми по лечебните растения в България. Издателство Авангард Принт, 399 стр. (монография)
Настоящата разработка е резултат от проект”Вредни и полезни насекоми по лечебните растения в България и Румъния”, финансиран от фонд’’Научни изследвания”, Министерство на образованието, младежта и науката на Република България. Разработката съдържа списък на насекомите, установени по лечебните растения в България. Имената на насекомите са актуализирани според европейската база данни’’ Фауна Еуропеа’’. Представени са използваните синоними на насекомите и растенията, както и библиографска справка на по-важните литературни източници.

5. Tomov, R., **K. Trencheva**, G. Trenchev, E. Cota, A. Ramadhi, B. Ivanov, S. Naceski, I. Papazova-Anakieva, M. Kenis (2009). Non-indigenous insects and their threat to biodiversity andeconomy in Albania, Bulgaria and Republic of Macedonia. Pensoft Publishers, Sofia-Moskow.112 pp. **(монография)**
Insects are among the most damaging of invasive alien species worldwide. They pose serious threats to the economy and the environment, as well as to human and animal health. A betterknowledge of the alien species present in a country and their impact on the economy and envi-ronment is an essential step towards the development of national strategies against invasive speciesand quarantine organisms. This report, produced under the SCOPES project “Non-indigenousinsects and their threat to biodiversity and economy in the Balkans”, lists 302 alien insects estab-lished in Albania, Bulgaria or the Republic of Macedonia. The list is dominated by Hemiptera (32%) and Coleoptera (29%). The pathway of introduction of alien insects and their economic andecological importance in the region are discussed. General recommendations for the managementof invasive alien species in the Balkans are proposed. The report also presents fact sheets for 29 alien insects that are either already causing damage in the region or are established elsewhere inEurope and are potentially invasive in the Balkans. The fact sheets provide information on the tax-onomy, description, biology and ecology, origin, introduction, distribution, impact and manage-ment of the alien species.

6. Drake, J. (eds) **……Trencheva, K.,** coauthor of chapter 11, (2009). List of species alien in Europe and to Europe. In: Drake J (eds) Handbook of Alien Species in Europe Series: Invading Nature– Springer Series in Invasion Ecology, Springer, Science + Business Media B.V, ISBN: 978 – 1-4020 – 8279-5, vol. 3, 400 pp. **(глава от книга)**
Biological invasions by alien (non-native) species are widely recognized as a significant component of human-caused global environmental change and the second most important cause of biodiversity decline. Alien species threaten many European ecosystems and have serious environmental, economic and health impacts. The DAISIE (Delivering Alien Invasive Species Inventories for Europe) project has now brought together all available information on alien species in Europe (terrestrial, aquatic and marine) and from all taxa (fungi, plants, animals). Thus for the first time, an overview and assessment of biological invasions in the Pan-European region is finally possible. The Handbook of Alien Species in Europe summarises the major findings of this groundbreaking research and addresses the invasion trends, pathways, and both economic as well as ecological impact for eight major taxonomic groups. Approximately 11.000 alien species recorded in Europe are listed, and fact sheets for 100 of the most invasive alien species are included, each with a distribution map and colour illustration.The book is complemented by a regularly updated internet database providing free additional information. With its highly interdisciplinary approach, DAISIE and its Handbook will be the basis for future scientific investigations as well as management and control of alien invasive species in Europe.

III. ПУБЛИКАЦИИ В НАУЧНИ СПИСАНИЯ - 32

3.1 Публикации в списания с импакт фактор - 6

7. **Trencheva, K.**, R. Tomov (2014). Checklist of scale insects in Bulgaria (Hemiptera, Coccoidea). Acta Zoologica Bulgarica. Supplementum 6, 65-72 **(IF 0.532)**
The scale insects of Bulgaria are a comparatively well-studied group. The most substantial contribution was made by Tsalev (1968), who listed 89 species belonging to 8 families, 55 new to Bulgaria. Using all literary sources, we have increased the number of species found in Bulgaria to 146 in 10 families and 65 genera. Thirty-eight of these are of alien origin. The number of species now known in each family is as follows: Diaspididae 49 species in 21 genera, Pseudococcidae 33 species in 16 genera, Coccidae 33 species in 18 genera,

Eriococcidae 13 species in 4 genera, Asterolecaniidae 6 species in 2 genera, Kermesidae 4 species in 1 genus, Ortheziidae 3 species in 3 genera, and Matsucoccidae 2 species in 1 genus. The Cerococcidae, Monophlebidae and Putoidae each have only 1 species in 1 genus. The previously unrecorded species listed here are taken from unreferenced text sources and so have not been included in ScaleNet. The paper provides information about outdoor and indoor species found in Bulgaria in last 75 years, since the first list of Coccoidea was published.

Key words: scale insects, checklist, Bulgaria

8. Hodgson, C., **K. Trencheva** (2014). Thirteenth International symposium on scale insect Studies: an overview Acta Zoologica Bulgarica. Supplementum 6, 3-6 **(IF 0.532)**

A brief overview of the XIIIth International Symposium on Scale Insect Studies (ISSIS) is presented. The extraordinary diversity of scale insects and their biology is briefly summarised, followed by a short summary of previous ISSIS meetings. The wide range of papers presented at the meeting is then summarised.In honour of their contribution to scale insect studies, three tributes were read for colleagues who had died recently and three colleagues were presented with plaques.

Key words: scale insects, ISSIS, Bulgaria

9. Georgiev, G., P. Mirchev, P. Boyadzhiev, **K. Trencheva** (2012). *Habrolepis montenegrina* (Hymenoptera: Encyrtidae) and *Epidiaspis gennadii* (Hemiptera: Diaspididae) – a New Parasitoid-host Relationship and New Species for Bulgarian Fauna. Acta zoologica Bulgarica., 64 (3), 327 - 328 **(IF 0.532)**

Habrolepis montenegrina and *Epidiaspis gennadii* are new species for Bulgarian fauna, and *E. gennadii* is the first known host of the parasitoid. In laboratory conditions, 3 female parasitoid specimens were reared from 8 host specimens collected in March 2010 on *Pistacia terebinthus* near the town of Ivaylovgrad in Eastern Rhodopes.

Key words: *Habrolepis montenegrina*, *Epidiaspis gennadii*, new host-parasitoid relationship, Bulgaria

10. **Trencheva K.,** S. Gounari, G. Trenchev, E. Kapaxidi (2009). The Coccoidea on Quercus (Fagaceae) in Bulgaria and Greece, with particular reference to their importance as honeydew-producing insects - Entomological news, Volume: 120, Issue: 2, 216-223 **(IF 0.324)**

A study of scale insects (Coccoidea) on oak trees (*Quercus* sp., Fagaceae) was undertaken betwee April and October in 2005 and 2006 in Bulgaria (B) and Greece (G), mainly in regions beekeeping interest, to determine the sources of honeydew utilized by the bees. A total of species of scale insects were collected: Coccidae: *Eulecanium tiliae* Linnaeus (B and G *Eulecanium ciliatum* Douglas (B) and *Parthenolecanium rufulum* Cockerell: (B and G Diaspididae: *Targionia vitis* Signoret (B and G), *Lepidosaphes ulmi* Linnaeus (B), *Diaspidiot wuenni* Lindinger (G), *Diaspidiotus zonatus* Frauenfeld (G) and *Diaspidiotus lenticular* Lindinger (G); Kermesidae: *Kermes roboris* Fourcroy (B) and *Kermes gibbosus* Signoret (B Eriococcidae: *Eriococcus* sp. (B and G), and Asterolecaniidae: *Asterodiaspis repugnans* Russell and G). Only 6 of these species are honeydew producing insects, and only 3 of them (*Eulecaniu tilliae*, *Parthenolecanium rufulum* and *Eriococcus* sp.) were found in both Bulgaria and Greece. *Parthenolecanium rufulum* is the most widespread species, is most likely to be the main source honeydew from Coccoidea. Among the species collected, the asterolecaniid *Asterodiasp repugnans* (Russel) is a new record for Bulgaria and the diaspidid *Diaspidiotus wuenni* (Lindinge is new record for Greece. Biological information, such as, host plant, developmental stag distribution and some phenological data are given.

Key words: scale insects, oak trees, beekeeping in forests, coccids.

11. Tomov, R**., K. Trencheva,** G. Trenchev, M. Kenis (2009). The Multicolored Invasive Asian Ladybird *Harmonia axyridis* (Pallas, 1773) (Coleoptera: Coccinellidae) New to the Fauna of Bulgaria. Acta zoologica bulgarica, 61 (3), 307-311 **(IF 0.532)**

Two adults of the Multicolored ladybird, *Harmonia axyridis* (PALLAS, 1773) (Coleoptera: Coccinellidae) were identified in 2009 during the examination of old samples collected in July 2008 at Sofia. In July 2009, larvae of *H. axyridis* were collected from Paliurus spina-christi Mill. infested by *Aphis* sp. at Kresna defile (near Blagoevgrad). Large reproductive populations of *H. axyridis* were found in Sofia on *Tilia cordata* Mill., *Quercus rubra* L. and *Acer pseudoplatanus* L., heavily infested respectively by *Eucallipterus tiliae* (L.), *Myzocallis walshii* (MONELL) and *Drepanosyphum* sp. Four colour forms have been recorded in Bulgaria f. succinea, f, spectabilis, f. conspicua and f. axyridis but the succinea phenotype was dominant in all samples. The invasion of *H. axyridis* in Bulgaria is still at an early stage and probably started

in summer 2009. By the end of August 2009, *H. axyridis* occurred in all regions of Sofia. Our results suggest that the infestation by *Eucallipterus tiliae* on *Tilia cordata* was the main reason for the spread of *H. axyridis* in Sofia. The first detection of the species in summer 2008 and the presence of large reproductive populations in Sofia in 2009 allow us to conclude that the species is established in Bulgaria.

Key words: Coccinellidae, *Harmonia*, invasive species, establishment, colour forms, Bulgaria

12. Hodgson, C., **K. Trencheva** (2008). A new species of Eriococcus (Hemiptera: Sternorrhyncha: Coccoidea: Eriococcidae) and redescriptions of *Eriococcus roboris* Goux and *E. thymelaeae* Newstead, with a key to the *Eriococcus* species on Quercus in the western Palaearctic - Zootaxa, 1959, 1- 38 **(IF 0.906)**

This paper describes a new species of felt scale, *Eriococcus melnikensis* Hodgson & Trencheva (Eriococcidae), from the western Palaearctic, off *Quercus pubescens* (Fagaceae) and *Myrtus communis* (Myrtaceae). It is close to *Eriococcus roboris* Goux In addition, this paper reviews the Eriococcidae currently known from oaks (*Quercus* spp) in the western Palaearctic and redescribes the adult females of *Eriococcus roboris* and *E. thymelaeae* Newstead. It also describes all other stages (apart from the prepupa) of *E. melnikensis* and various immature stages of *E. roboris, E. thymelia* and *E.aceris* (Signoret). A key is provided for the separation of the adult females of the five species of Eriococcidae now known off oaks from the western Palaearctic.

Key words: Bulgaria, Cyprus, France, Greece, Hungary, Italy, Turkey, frontal lobes, frontal tubercles, *Kotejacoccus turcicus*

13. Tomov, R., **K. Trencheva,** G. Trenchev, T. Manole, I. Ionescu, E. Petrescu and G. Margarit (2008). Pest and beneficial insects of medicinal plants in Bulgaria and Romania, Anales of the University of Craiova. Vol. XXXVIII/B, 461-464

Medicinal Plants (MeP) plants play a vital role in the maintenance of human health throughout the world. The sustainable use of MeP in the Balkans is threatened due to over-exploitation, destructive harvesting, habitat loss and alteration and decrease in genetic diversity. In the framework of bilateral project between Bulgara and Romania we are developing pest management strategy for cultivated and wild life commercially important MeP. The specific objectives of this study are: (1) To develop an inventory list of pest insects on MeP in Bulgaria and Romania; (2) To identify the pest management problems and needs

of producers and exporters of medicinal plants as well as needs of pharmacy business of new cultivated plants species; (3) To assess the species composition and economic impact of insect pests on top-ten most produced and used MAP in the targeted countries; (4) To study of species composition of beneficial insects of key pest of targeted plants; (5) To develop a digital database of insect pests on Medicinal plants in Bulgaria and Romania and (6) To analyze the data obtained and produce recommendations to authorities. The expected results are: (1) Assessment of available level of knowledge on pest insects on MeP in Bulgaria and Romania; (2) List on pests on MeP on the base of literature data published in English, Bulgarian and Romanian; (3) Identifying plants what need a development a technology for cultivation and pest management; (4) Identifying the key pests what need a development of an environmental friendly pest management strategy; (5) Better understanding of the actual economical importance of pests on the targeted plants; (6) Identifying of the key pests of targeted plants what will allow the development of specific pest control strategies in MeP in future cultivation of these plants and (6) Contacts between business, farmers and academia will be established what would be base for future innovative collaborative projects. In the paper we discuss the present state of art concerning the level of knowledge of pest management of MeP in both countries.

Key words: medicinal plants, Bulgaria, Romania, insect pests

14. **Trencheva, K.,** G. Trenchev, R. Tomov, Wu San-An, Shi Juan and Wang Shan Shan (2008). Invasive scale insects of ornamental plants in Bulgaria and China, Anales of the University of Craiova. Vol. XXXVIII/B, 465-468

In the framework of bilateral scientific and technological cooperation between China and Bulgaria, signed by the Ministry of Science and Technology of the People's Republic of China and the Ministry of Education and Science of the Republic of Bulgaria a two year project will be done. There has been increased interest in recent years in utilization of native and non-native ornamental plants in urban area, because of the beauty and diversity they lend to the landscape. The addition of new ornamental plants to the urban landscape often results in the introduction of new pest and disease problems. In attempting to deal with insects, one of the major pests that feed on ornamentals are scale insects. The objective of this project are as follows: 1) to develop a preliminary list of scale insect species of ornamental plants in Bulgaria and China based on literature source; 2) study of species composition and distribution of scale insects on ornamental plants in Bulgaria and China; 3) assessment on pest status for dominant species in both country; 4) evaluation the possibility of invasion for dominant scale insects via ornamental plants trade between China and Bulgaria. The realization of this project will revise the information concerning scale insect species of ornamental plants in Bulgaria and China. New data are expected to be added to the scale insect fauna of ornamental plants in Bulgaria and China. An annotated check list of scale insects of ornamental plants will be made for Bulgaria and China. This information will be useful for both Chinese and Bulgarian Plant Protection and Quarantine services. Predict which scale insect species are the most likely candidates for future invasions into the urban area in China and Bulgaria.

Key words: invasive scale insects, ornamental plants, Bulgaria, China

15. Trenchev, G., **K. Trencheva** (2009). *Prociphilus fraxinifolii* Riley (Hemiptera, Aphididae, Eriosomatinae) a species new to the Bulgarian fauna. Journal of Sustainable Forestry. Collection 59 – 60, ISSN 1821-1046, UDK 630, 79-82

Prociphilus fraxinifolii Riley (Hemiptera, Aphididae, Eriosomatinae) was observed for the first time in Bulgaria in 2007. This is the third record of the species in Europe. Probably the species was introduced in the country with plant material. It was collected from Sofia on leaves of *Fraxinus pennsylvanica* Marsh. Colonies of compact aphids were observed from May to the end of October. In the second half of September to the mid of October nymphs, apterae viviparae and winged viviparae females can be seen. Morphological description of species and damage is given.

Key words: Hemiptera, Aphididae, *Prociphilus fraxinifolii*, Bulgaria

16. Tomov, R., **K. Trencheva,** G. Trenchev and M. Kenis (2010). Occurrence of the harlequin ladybird *Harmonia axyridis* (Pallas, 1773) (Coleoptera: Coccinellidae) in Bulgaria. IOBC/WPRS Bulletin 58, 159-164

Surveys were carried out in Bulgaria in 2009 to monitor the presence of the invasive harlequin ladybird, *Harmonia axyridis* (Pallas, 1773) (Coleoptera: Coccinellidae). Ladybirds were collected by beating the branches of trees and shrubs and sweeping grasslands throughout the country. The species was found in 17 localities in Bulgaria: Ardino, Belogradchik, Bladoevgrad, Botevgrad, Dupnitsa, Elin Pelin, Gabrovo, Kresna defile, Montana, Pravets, Smolyan, Sofia, Varna, Veliko Turnovo, Velingrad, Vidin and Vratsa,. Except for the natural location Kresna defile, *H. axyridis* occurred mainly in urbanised landscapes. The species was more often found in Western part of the country. The species was found exclusively on broadleaved trees heavily infested by aphids: *Acer pseudoplatanus* L., *Cornus sanguinea* L., *Fraxinus excelsior* L., *Paliurus spina-christi* Mill., *Populus nigra* L., *Quercus rubra* L., *Quercus cerris* L., *Tilia cordata* Mill. and *Tilia tomentosa* Moench. The pathway of introduction of the ladybird in Bulgaria is not clearly known. Although releases of *H. axyridis* were carried out in Bulgaria and Greece in the 1990s, the present invasion is most probably due to populations coming from the West. The invasion of *H. axyridis* in Bulgaria is still at an early stage and despite the first observation of the species in 2008, it seems that it started to spread in summer 2009 from populations of Sofia.The infestation by *Eucallipterus tiliae* (L.) on *Tilia cordata* Mill. clearly facilitated the natural spread of *H. axyridis* in Bulgaria.

Key words: Coccinellidae, *Harmonia axyridis*, exotic species, biological invasions, establishment, Bulgaria

17. **Trencheva, K.,** G. Trenchev, R. Tomov and Wu San-an (2010). Non-indigenous scale insects on ornamental plants in Bulgaria and China: a survey. Entomologia Hellenica 20, 114-123

A preliminary list of non-indigenous scale insect species on ornamental plants in Bulgaria and China is presented. The sampling was done between April and November, 2009, in the framework of the project "Invasive scale insects on ornamental plants in Bulgaria and China". The insects were collected in nurseries, parks, gardens, botanical collections and greenhouses. Representatives from four families have been identified in Bulgaria, the most

numerous of which are the Diaspididae (eight species), Coccidae (four species), Pseudococcidae (two species) and Margarodidae (one species). Three species of non-indigenous scale insects associated with ornamental plants were collected in China, all belonging to the family Pseudococcidae. A list of alien scale insect species on ornamental plants is given, including the sampling sites, host plants on which they were found, origin and first report in both countries.

Key words: non-indigenous scale insects, Bulgaria, China, ornamental plants

3.2.2 Публикации в български реферирани списания -15

18. Popova, T., **K. Trencheva**, R. Tomov (2016). Investigation on the microflora of *Pseudococcus longispinus* (Targioni-Tozzetti) (Hemiptera: Pseudococcidae) in order to assess its importance as a carrier of pathogenic microorganisms. Bulgarian Journal of Agricultural Science, 22 (No 1), 103-107

Investigations on the microflora of the long-tailed mealybug *Pseudococcus longispinus* (Targioni-Tozzetti) (Hemiptera:Pseudococcidae) were performed. The following microorganisms were isolated: *Salmonella enterica, Serratia plymutica, Enterobacter agglomerans, Staphylococcus cohnii, Bacillus* spp., *Clostridium* spp., *Listeria* sp., *Candida krusei, Penicillium* sp., *Aspergillus fumigatus.*The results from the investigations show that the scale insect could be a reservoir and distributor of conditionally pathogenic for animals and human microorganisms such as bacteria mainly from the family Enterobacteriaceae, staphylococci, spore-forming as well as fungi from the genera *Candida* and *Aspergillus*. The presence of fungi of the genus *Penicillium* is a prerequisite for the development of poliresistance of the identified bacteria to β-lactams which are among the most widely used antibiotics. Such resistance of the microorganisms isolated from *P. longispinus* was found *in vitro* by us in this study through the agar-gel diffusion method of Bauer et al. (1966). The coexistence of bacteria and fungi in insects is proving to be a factor which induces development of resistance of bacteria to antibiotics emitted by fungi and probably is one of the reasons for the existence and spread of resistant strains. The carriage of *S. plymutica* can be assessed as a factor which regulates fungal microflora of the species and probably protects it from entomopathogenic fungi which were not identified in our research.

Key words: *Pseudococcus longispinus*, microflora, resistance to antibiotics

19. Georgiev, G., P. Mirchev, M. Georgieva, P. Boyadzhiev, **K. Trencheva** (2015). *Epidiaspis gennadii* (Hemiptera: Diaspididae) – a new host of *Zaomma lambinus* (Hymenoptera: Encyrtidae) Silva Balcanica, 16 (1), 105 -107

Epidiaspis gennadii was found as a host of *Zaomma lambinus* in Bulgaria. The samples (parts of *Pistacia terebinthus* branches) were collected on 7 April 2014 in the region of Madzharovo in Eastern Rhodopes. In laboratory conditions, one female specimen of *Z. lambinus* was reared on 13 May 2014 from seven studied specimens of *E. gennadii*. The established host-parasitoid relationship is new for science.

Key words: *Epidiaspis gennadii, Zaomma lambinus*, new host-parasitoid relationship, Bulgaria

20. Попова, Т., **К. Тренчева**, Н. Василева (2013). Изследване върху микрофлората на черничевата щитоносна въшка *Pseudaulacaspis pentagona* (Targioni-Tozzetti) (Hemiptera:Diaspididae) с оглед значението й като преносител на патогенни микроорганизми. Растениевъдни науки, vol.,l, 3:50, 98-106

Извършени са изследвания върху микрофлората на черничевата щитоносна въшка *Pseudaulacaspis pentagona* (Targioni-Tozzetti) върху *Morus alba* L. и *Prunus persica* (L.), с цел преценка на патогенния й потенциал. От въшките, развиващи се върху черница, са изолирани 16 вида микроорганизми. Преобладават Грам-отрицателните видове от сем. *Enterobacteriaceae*. От тях патогенна за растения е *Erwinia amylovora*, а за животни и хора патогенен потенциал имат *Proteus myxofaciens*, *Providencia rettgeri*, *Hafnia alvei, Serratia ficaria* и *Xanthomonas maltophilia*, както и Грам-положителните стафилококи, бацили и клостридии. Не се установява сходство между външната и вътрешната микрофлора. Не се изолират овални гъби, а нишковидните *Penicillium brevicompactum, Aspergillus fumigatus* (патогенни за бозайници и птици) и *Nectria auranticola* (патогенна за щитоносни въшки) са установени само в храносмилателния тракт. При въшките, развиващи се върху праскова, преобладават Грам-положителните видове – коки, бацили, клостридии, листерии и гъби. Изолираните Грам-отрицателни бактерии са условно патогенни за животни и хора. Най-голямо е разнообразието на представителите на сем. *Enterobacteriaceae*, следвани от *Pseudomonas diminuta*, *Flavimonas oryzihabitans* и *Acinetobacter* sp. Бактерии от родовете *Enterobacter, Citrobacter* и *Acinetobacter* се установяват само в храносмилателния тракт на изследваните въшки. *Hafnia alvei* се изолира също и от повърхността им, а *Klebsiella*

pneumoniae rhinoscleromatis е част само от повърхностната микрофлора. Наблюдава се голямо сходство при Грам-положителните видове с екзогенна и ендогенна локализация. Количествата на микроорганизмите, изолирани от вътрешността на насекомите, превишават тези на същите видове, установени по повърхността им, с изключение на *Hafnia alvei*. Установяват се същите нишковидни гъби, както при въшките от черница, допълнени от *Candida tropicalis, Candida krusei* и *Monilia* sp.

Ключови думи: *Pseudaulacaspis pentagona*, микрофлора

21. Томов, Р., **К. Тренчева** (2013). Анотиран списък на неприятелите (Insecta) по складираните продукти, установени в България до 2012 година. Растениевъдни науки, vol.,l, 3: 50, 115-126

Annotated list of pest insects associated with stored plant and animal products in Bulgaria is presented. The list compiles data published during the period 1891-2012. The valid names of insects according to Fauna Europaea data base, their synonyms used in Bulgarian literature, and bibliography of papers concerning their bio ecology and distribution in Bulgaria are presented. The total number of 149 insect species is reported as direct and indirect pests on stored products in Bulgaria. Most numerous are insects from order Coleoptera – 76,5 %, followed by Lepidoptera 15,4%. Non-indigenous for Bulgaria are 80 species, from which 39 species have cryptogenic origin.

Key words: insects, stored products, list, pests

22. Попова, Т., **К. Тренчева**, Р. Томов (2011). Изследване върху микрофлората на щитоносните въшки *Aspidiotus nerii* Bouché, 1833, *Chrysomphalus aonidum* (Linnaeus, 1758) и *Icerya purchasi* Maskell, 1879 с цел оценка на ролята им като преносители на патогенни микроорганизми. Растениевъдни науки 48, 484-490

Извършени са изследвания върху микрофлората на щитоносните въшки *Aspidiotus nerii* Bouché, 1833, *Chrysomphalus aonidum* (Linnaeus, 1758) и *Icerya purchasi* Maskell, 1879 с цел оценка на ролята им като преносители на патогенни микроорганизми. От *A. nerii* и *C. aonidum* са изолирани: *Bacillus spp., Clostridium spp., Candida tropicalis* и *Aspergillus sp.* Освен тях при *A. nerii* са установени *Enterobacter agglomerans*, а при *C. aonidum* - *Pseudomonas cichorii* и *Listeria innocua*. Изолирани са също ентомопатогенни гъби: *Nectria aurantiicola* Berk.&Br. *(Fusarium larvarum* Fuckel) от *A. nerii* и *Podonectria coccicola* (Ell. & Ev.) Petch от *C. aonidum*.Изолираните от *I. purchasi* микроорганизми се отнасят към следните групи: семейството на чревните бактерии (*E. coli, Enterobacter*

agglomerans, Erwinia amylovora) и родовете *Pseudomonas* (*P. diminuta*), *Listeria* и *Clostridium*. Установените гъби са от родовете *Candida* и *Aspergillus*. Резултатите от изследванията показват, че тези щитоносни въшки могат да бъдат носители и разпространители на причинители на опасни инфекции по растения (*E. amylovora*, *P. cichorii*), на микози по други насекоми (от родовете *Nectria* и *Podonectria*), но също и на *E. coli* и микроорганизми от родовете *Enterobacter, Candida* и *Aspergillus* с патогенни свойства за животните и хората. Установена е симбиоза на вида *I. purchasi* с бактерията *Pseudomonas diminuta*, който разгражда органофосфатни инсектициди, което прави въшката устойчива към препарати за химически контрол.

Ключови думи*: Aspidiotus nerii, Chrysomphalus aonidum, Icerya purchasi,* микрофлора

23. Попова, Т., **К. Тренчева**, Р. Томов (2010). Изследване върху микрофлората на бразилската хлебарка *Blaberus giganteus* (Blattodea: Blaberidae) с оглед оценка на епизоотологичното й значение. Екология и бъдеще 3, 30-33

Извършени са изследвания върху микрофлората на бразилската хлебарка *Blaberus giganteus* L. Изолираните микроорганизми се отнасят главно към следните групи: семейството на чревните бактерии (*Salmonella enterica, Enterobacter aerogenes, Serratia liquefaciens, Hafnia alvei)* и родовете *Pseudomonas* (*P. solanacearum, P. aeruginosa*), *Staphylococcus* (*S. xylosus, S. haemolyticus, S. hominis*), *Enterococcus, Bacillus, Clostridium* и *Listeria*. Установените гъби са от родовете *Fusarium, Aspergillus* и *Candida* (*C. albicans*).Резултатите от изследванията показват, че хлебарките от този вид могат да бъдат резервоар и разпространител на причинители на инфекции не само по животните и хората, но и по растенията.

Ключови думи: *Blaberus giganteus,* микрофлора

24. Попова, Т., **К. Тренчева,** Р. Томов, Г. Тренчев (2010). Изследване върху микрофлората на картофения молец *Phthorimaea operculella* Zeller (Lepidoptera: Gelechiidae) с оглед оценка на значението му като преносител на патогенни организми. Растениевъдни науки 47, 317-320

Извършени са изследвания върху микрофлората на картофения молец (*Phthorimaea operculella* Zell.) с цел преценка на патогенния й потенциал за бозайници.

Изолираните микроорганизми се отнасят главно към следните групи: семейството на

чревните бактерии (*Salmonella enterica, Enterobacter aerogenes, Serratia liquefaciens, Serratia odorifera)* и родовете *Pseudomonas* (*P. solanacearum*), *Aeromonas (A. sorbia), Staphylococcus* (*S. intermedius*), *Enterococcus, Bacillus* и *Clostridium*. Установените гъби са от род *Aspergillus*. Резултатите от изследванията показват, че картофеният молец може да бъде резервоар и разпространител на причинители на инфекции не само по растенията, но и по животните и хората.

Ключови думи: *Phthorimaea operculella,* микрофлора

25. Томов, Р., **К. Тренчева**, Г. Тренчев (2010). Чуждоземните насекоми като проблем за устойчивото развитие на България. Управление и устойчиво развитие 1, 382-389

Единадесет вида чуждоземни насекоми се смятат за икономически важни неприятели по земеделските култури в България: *Leptinotarsa decemlineata* (Say), *Trialeurodes vaporariorum* (Westwood), *Myzus persicae* Sulzer, *Diaspidiotus perniciosus* (Comstock), *Pseudaulacaspis pentagona* (Targioni, Tozzeti), *Viteus vitifoliae* (Fitch), *Hyphantria cunea* (Drury), *Phthorimaea operculella* (Zeller), *Helicoverpa armigera* (Hübner), *Grapholita molesta* (Busck) и *Frankliniella occidentalis* (Pergande). У нас не са установени чуждоземни видове бръмбари корояди и дървесинояди по горската и декоративна дървесна растителност. Заплаха за биоразнообразието на България представляват видовете *Harmonia axyridis* (Pallas), *Nezara viridula* (L.) и *Cameraria ohridella* Deshka et Dimic, които са широко разпространени у нас. Видовете *Linepithema humile* (Mayr), *Bemisia tabaci* (Gennadius) и *Chrysomya albiceps* (Wiedemann) имат ограничено разпространение и тяхното въздействие върху биоразнообразието не е проучено.

България е особено застрашена от проникване на чуждоземни видове, поради географското й разположение и нарастващия транспорт през последните години. Търговията с растения и особено с декоративни растения за засаждане и рязан цвят, крие най-голям риск за внасяне на чуждоземни насекоми у нас. С оглед устойчивото развитие на България е необходимо да бъде разработена национална стратегия за инвазивните видове.

Ключови думи: чуждоземни видове, насекоми, устойчиво развитие, България

26. **Trencheva, K.,** G. Trenchev, R. Tomov, Wu San-an (2010). First report of *Aulacaspis yasumatsui* Takagi, 1977 (Hemiptera: Diaspididae) in Bulgaria. Plant science, 47, 206-209

Aulacaspis yasumatsui Takagi, 1977 (Hemiptera: Diaspididae) was detected in Bulgaria during a survey in the framework of the project "Invasive scale insects on ornamental plants in Bulgaria and China". The species was recorded in July 2009, on an imported Cycas revoluta Thunb., in a garden center near to the town Tsarevo (Black sea). The armored scale was identified using key and illustrations by Miller and Davidson (2005). To date it is the only record of this species in Bulgaria and the sixth finding in Europe. In Bulgaria *A. yasumatsui* may be a risk for cycads grown under glass and in botanical and private collections.

Key words: invasive scale insects, ornamental plants, Bulgaria, China

27. Томов, Р., **К. Тренчева,** Г. Тренчев, М. Кенис (2009). Чуждоземните насекоми и заплахата от тях за биоразнообразието на България. Лесовъдска мисъл, 1, 242-247

В рамките на проект АТАРТИБ, е направена оценка на нивото на проученост на чуждоземните насекоми и тяхното значение за околната среда на България. Направеният литературен преглед показа, че публикуваната информация е разпръсната в множество публикации, много от които много стари и липсващи в библиотеките.

Не бяха намерени данни за негативен ефект на чуждоземните насекоми върху околната среда, но бяха установени следните пропуски в нашите познания: (1) За повечето видове съществуват само фаунистични данни; (2) За някои видове съществуват само единични съобщения без информация за състоянието на техните популации; (3) Някои видове са представени в европейската база данни Fauna Europea, но публикациите са трудно достъпни, тъй като най - вероятно са съобщени от чужди ентомолози; (4) Включването на такива видове в предварителните анализи е под въпрос, тъй като не е ясно дали са еднократно улавяни или са трайно разпространени в България; (5) Проучвани са само видовете с икономическо значение и тези, които са под фитосанитарен контрол. (6) Правените анализи касаят видовете с чуждоземен произход и интродуцирани в България само чрез човешката дейност. За да бъде разработена система за мониторинг и контрол на чуждоземните членестоноги, е необходимо да бъдат извършени следните проучвания: (1) Прецизна инвентаризация на чуждоземните членестоноги в България, която ще попълни установените пропуски в наличната информация; (2) Проучване на екологичното въздействие на подбрани

видове и механизми на въздействие: (3) Оценка ролята на естествените врагове в инвазионния процес на чуждоземните членестоноги; (4) Оценка ролята на ектопаразитните чуждоземни членестоноги по бозайници и птици като преносители на болести.

Ключови думи: чуждоземни насекоми, биоразнообразие, България, екология

28. **Trencheva, К.** and G. Trenchev (2008). *Asterodiaspis repugnans* (Russeell,1941) (Hemiptera, Asterolecaniidae) – a species new for the fauna of Bulgaria. Forest science 1, 71-74

Видът *Asterodiaspis repugnans* (Russell, 1941) е щитоносна въшка, която принадлежи към семейство *Asterolecaniidae*. В света то е представено от 223 вида (Miller, 2005). Според Kosztarab, Kozar (1988) в централна Европа от сем. *Asterolecaniidae* са известни 6 вида. В България Kozar et al., (1979), Цалев (1968) съобщават пет вида от това семейство – *Aserodiaspis bella* (Russell), *Asterodiaspis quercicola* (Bouche), *Asterodiaspis roboris* (Russel), *Planchonia arabidis* (Signoret), *Asterodiaspis variolosa* (Ratzeburg). Видът *Asterodiaspis repugnans* е установен за първи път във Франция през 1941 г. по *Quercus ilex* (Russel, 1941). Трофично *A. repugnans* е свързан само с представители на род *Quercus: Quercus ilex* L., (Russell, 1941; Pellizzari, Camporese, 1991), *Quercus lanuginosa* Lam., (Russell, 1941) и *Quercus pubescens* Willd., (P e l l i z z a r i,C a m p o r e s e, 1991). Видът е разпространен във Франция (R u s s e l l**,**1941), Гърция, Украйна (B o r c h s e n i u s, 1960), Италия (P e l l i z z a r i, C a m p o r e se ,1991; B a r b a g a l l o et al.,1995).

29. Tomov, R., **K**. **Trencheva,** G. Trenchev, M. Kenis (2007). A review of the non-indigenous insects of Bulgaria. Plant Science , vol. XLIV, N 3, 199-204

In the framework of the SCOPES project ,,Non-indigenous insects and their threat to biodiversity and economy in the Balkans" and the EL) fp6 Project DAlSlE, a first analysis of alien insects of Bulgaria was prepared. This preliminary review compiles data from published information up to 2005. The total number of insects considered by us as non-indigenous for Bulgaria is 190 (0.91% of total number of insect species found in Bulgaria). Most numerous are insects from order Hemiptera - 34.74%, followed by Coleoptera 33.68%. Only 6 species (3,16%) have been intentionally introduced as biocontrol agents. Thirty one species (16.31% of all alien species) had been under phytosanitary regulations have already

been introduced in Bulgaria. Most species are introduced from Asia (31.59%) followed by those from the Americas (31.05%) and Africa (16.82%). Species with unclear origin due to contradictions in literature and their cosmopolitan distribution represent 16.32%. There is an increasing number of reports about alien insects during last 30 years in Bulgaria. About 48 species (25.26% of total non-indigenous) are considered as economically important Bulgarian biodiversity and economy are threatened by the introduction of alien invasive insects because of active transport from Asia. Global warming could be reason for establishment of some Mediterranean species in Bulgaria. There is no national legislation on invasive alien species (IAS). The impact of invasive insects on biodiversity is largely underestimated. Species without economic impact are out of any control. In order to create a national strategy against invasive organisms several actions should be conducted: collaboration between alt specialists dealing with non-indigenous species; revision of Bulgarian list of quarantine insects; development of monitoring system for alien species including those intercepted at the borders; evaluation of the pest status of alien insects potentially invasive in Bulgaria.

Key words: non-indigenous species, quarantine, insects, biodiversity, Bulgaria

30. Trenchev, G., I. Ivanova, P. Nicolov and **K. Trencheva** (2007). *Metcalfa pruinosa* (Say, 1830) (Homoptera, Flatidae) a species new to the Bulgarian fauna. Plant Science , vol. XLIV, N 3, 195-198

Metcalfa pruinosa (Say, 1830) is reported as a new to the fauna of Bulgaria. It was found in the region of Plovdiv (2004) on *Tuja oxidentalis* (L.). Morphological description of species is given. Data concerning biology of *Metcalfa pruinosa* are according Arsone, Arno (1989).

Key words: *Metcalfa pruinosa*, description

31. Tomov, R., G. Trenchev, **K. Trencheva** (2000). *Cameraria ohridella* Deschka et Dimic, 1986 – неприятел по конския кестен в България. Състояние на проблема и моменти за борба. Наука за гората 2/3, 55-61

Представени са резултатите от шестгодишни наблюдения върху разпространението и значението като неприятел на *Cameraria ohridella* Deschka et Dimic, 1986 в България. Понастоящем видът е разпространен предимно в Северна България, Черноморието и в района около София, но постоянно разширява своя ареал от север на юг и от изток на запад. Силно нападение от неприятеля има и в резервата “Дервиша”, където през

последните години дърветата се обезлистват преждевременно. В южна и югоизточна България все още има райони, в които неприятелят не се среща. През 2000 година се наблюдава рязко снижаване плътността на неприятеля в райони, силно нападнати през миналите години. Вероятна причина за това са необичайно високите температури през лятото на 2000 г. Представени са кратки данни за жизнения цикъл, продължителността на живот, плодовитостта, половия индекс, динамиката на имагиниране и яйцеснасяне и др. на *C. ohridella.* За успешна борба с неприятеля е необходимо унищожаването на зимуващия запас в опадалите листа и прилагане на инсектициди в началото на летежа на зимуващото и първото лятно поколение.

Ключови думи: *Cameraria ohridella, Aesculus hippocastanum*, България, разпространение, биология

32. Tomov, R., **K. Trencheva** (1999). Bioecology of *Cameraria ohridella* Deschka et Dimic, 1986 (Lepidoptera: Gracillariidae), a pest on *Aesculus hippocastanum* L. Acta Entomologica Bulgarica, 2,3,4, 76-81

През периода 1997-1999 в района на София е проведено проучване върху биологичните особености на Cameraria ohridela Deschka et Dimic, 1986, сериозен неприятел по конския кестен Aesculus hippocastanum L. в България. Описани са начинът на живот и картината на повреда на вида. Проучени са динамиката на излитане, продължителността на живот, съотношението на половете, плодовитостта и динамиката на снасяне на зимуващото поколение. Началото на летеж е в края на месец Април, един два дни преди цъфтежа на конския кестен. Летежът продължава 15 - 20 дни като е най-масов през 4-6 ден от началото на летежа (в началото на май). В лабораторни условия женските живеят 6-7 дни, а мъжките 5-6 дни. В начлото на излитането преобладават мъжките екземпляри. Женските имагинират с 23-27 развити яйца и 30-40 неразвити. В лабораторни условия плодовитостта е 31-49 бр яйца. 90% от яйчната си продукция снасят през първите три дни след имагиниране.

3.3 Публикации в сборници от научни форуми - 6

3.3.1 Публикации в сборници от международни научни форуми – 6

- В чужбина - 5

33. Tomov, R., **K. Trencheva** (2014). A review of pest status of recently recorded alien insects in Bulgaria - Proceedings: 4th Esenias Workshop: International Workshop on IAS in Agricultural and Non-Agricultural, areas in ESENIAS Region, 108-115

Bulgarian biodiversity and economy are threatened by the introduction of alien insects because of increasing transport and the global warming.The alien terrestrial insects recorded so far in Bulgaria account for 300 species and 108 of them have been detected during the last 20 years. The highest number belongs to Hemiptera (101) and Coleoptera (88), followed by Lepidoptera (34), Hymenoptera (23), Phthiraptera (16), Diptera (15),Thysanoptera (8), Orthoptera (6), Blattodea (3), Psocoptera (3), Zygentoma(1), Siphonaptera (1),and Dermaptera (1). Most of them originate from Asia, followed by Americas, Africa, etc. The species with cosmopolitan distribution and considered as cryptogenic are 82. The trade with plant material and in particular ornamental plants is considered as a main pathway for the introduction of the alien species. A list of 20 species recorded during the last five years in Bulgaria is presented. The pest status of the alien insects *Cameraria ohridella* Deschka et Dimic, *Phthorimaea operculella* Zeller, Harmonia axyridis (Pallas), *Metcalfa pruinosa* Say, *Tuta absoluta* (Povolny), *Nezara viridula* (Linnaeus), *Pseudococcus calceolariae* (Maskell), *Aphis spiraecola* Patch and *Acizzia jamatonica* (Kuwayama) that recently increased rapidly their population density and range of distribution in Bulgaria is discussed.

Keywords: alien insects, pest status, pathway, Bulgaria.

34. **Trencheva, K**., S. Gounari, G. Trenchev, E. Kapaxidi (2009). Scale insects on oak trees (Quercus spp.) in Bulgaria and Greece. Proceedings of the XI International Symposium on Scale Insect Studies, 137-141

In a comparatively study of honeydew producing insects of oak trees an extensive sampling was done in Bulgaria and Greece, mainly from regions with beekeeping interest. Nine species of scale insect associated with the genera Quercus spp. have been collected as a result of the survey in Bulgaria. They belong to five families, the most numerous of which are the Coccidae (three species), Diaspididae (two species), Kermesidae (two species), Eriococcidae (one species), Asterolecaniidae (one species). Representatives from four families have been determined during the survey in Greece. Four species from family Diaspididae, two species from family Coccidae, one species from family Asterolecaniida*e* and one species from family Eriococcidae. Among them *Diaspidiotus wuenni* (Lindinger), Diaspididae is first announced

for Greek scale insect fauna and *Asterodiaspis repugnans* (Russell), Asterolecaniidae is a species new to the Bulgarian scale insect fauna. The sampling was done between April and October 2005 – 2006. List of scale insect species, including place, plant material, date of sampling, development stage, first report in Bulgaria and Greece, host plant, distribution and some phenological data are given.

Key words: scale insects, oak tree, faunal survey

35. **Trencheva, K.** (2007). Honeydew producing scale insects on oak tree (Quercus spp.) in Bulgaria. Plant Protection, vol. 18, N 18, 72-73

Five scale insect species producing honeydew on oak trees as a host plant have been collected as a result of the survey. Three species from the family Coccidae and two species from the family Kermesidae have been determined during the study. The coccoid samples were collected between April and October 2005 – 2006, mainly in regions of beekeeping intersest at the following sampling sites: The Rhodopes mountains (Panichkovo), Strandja mountains (Izgrev, Fazanovo, Velika), Stara planina mountains (Preslav), Pirin mountains (Predela, Melnik) and Vitosha mountain. A list of honeydew producing scale insect species, including place, plant material, date of sampling, development stage, description of postreproductive females, first report in Bulgaria, host plant, distribution, phenological data is given here.

Key words: honeydew, scale insects, oak tree

36. Trenchev, G., **K. Trencheva** (2007). *Pseudodendrothrips mori* (Niwa, 1908) (Thysanoptera, Thripidae) a species new to the Bulgarian fauna. Plant Protection, vol. 18, N 18, 69-71

Mulberry thrips was observed for the first time in Bulgaria in 2006. It was collected from the northwest region of Bulgaria (Butan) on *Morus alba*. Probably the species was introduced in the country with mulberry plant material. Adult and pre-adult forms were observed in mid to late summer. Almost all of the damage leaves were with necrosis. The thrips infestation affects the qualitative and quantitative characters of mulberry leaves and can cause serious damage in all sericulture regions in Bulgaria. Description of the female species is given according to Stannard (1968), Mound and Kibby (1998).

Key words: *Pseudodendrothrips mori,* mulberry, Bulgaria

37. Tomov, R., G. Trenchev, **K. Trencheva** (2000). Occurrence of *Cameraria ohridella* Deschka et Dimic (Lepidoptera: Gracillariidae) in Bulgaria, Yearbook for Plant Protection, Skopje, vol. XI, 72-74
The occurrence of *Cameraria ohridella* Deschka et Dimic in Bulgaria till 1999 is presented. *C. ohridella* was first observed in Bulgaria in the period 1988-1989, but it was reported as a new to the fauna of Bulgaria in 1993. Then there were a several damed trees in the region of Plant protection Institute –Kostinbrod (near Sofia). Around this place there was no dameged trees. Since 1993 the pest has been spreading rapidly in Bulgaria. At present days almost all hourse chestnut trees in north Bulgaria, Black sea cost and region of Sofia are heavy infested and are defoliated in August. In west Bulgaria there is not *Cameraria ohridella* wwhat makes as supose that bulgarian population does not have Masedonian origin. In our opinion the specimens, found in Kostinbrod in 1993 have been brought from East Bulgaria to Kostinbrod. The origin of Bulgarina population of the pest is disjunctive area of autochton Aesculus hippocastanum situated in the east part of Bulgaria. The pest is spreding from north to south. Key words: *Cameraria ohridella,* occurance, Bulgaria

В България - 1

38. Томов, Р., **К. Тренчева,** Г. Тренчев (2009). Многоцветната азиатска калинка *Harmonia axiridis* (Pallas, 1773) (Coleoptera: Coccinellidae) като потенциален неприятел по овошките и лозата в България. Сборник доклади от международна научна конференция „Добри практики за устойчиво земеделско производство", Лесотехнически университет, 12-13 ноември, София, 307-311
Многоцветната азиатска калинка *Harmonia axiridis* (Pallas, 1773) (Coleoptera: Coccinellidae) е широко използван биоагент за контол на листни и щитоносни въшки по целия свят. През последните години видът се превърна в инвазивен вид в много части на света. В много случай, в края на лятото видът е наблюдаван да се натрупва на групи по плодовете на ябълката, малината и особено по гроздовете на лозата, хранейки се с наранени плодове. Видът е установен в България през 2009 г. и все още у нас не са наблюдавани повреди по плодовете. Изключително бързото разпространение на вида, наблюдавано през 2009 година, дава основание да се очаква, че за няколко години, видът ще се разпространи я цялата страна. Имайки предвид неговите екологични особености може да се очаква той да се намножи масово предимно в северна и западна

България. Видът е потециален неприятел по някои овощни култури, но най-вече представлява заплаха за винопроизводството у нас, замърсявайки гроздовете и понижавайки качеството на виното.
Ключови думи: *Harmonia*, неприятел, винопроизводство, лоза, България