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# Programme and Book of Abstracts

## TH 22
## Collembola assemblages under the invasive *Senecio inaequidens* and the native *S. jacobaea*

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In the present study we assessed the effects of the invasive *Senecio inaequidens* (Asteraceae), one the most invasive species in Europe, on the soil fauna. As a control we used the related native *S. jacobaea*. Both species can occur in the same open habitats and share quite similar life history traits (height, perennial habit,...). The invasive *S. inaequidens* is a perennial pioneer of dry habitats. The native *S. jacobaea* is a common biennial (to perennial) of various types of grassland. The aim of the study was to assess whether the invasive *S. inaequidens* alters the faunal composition of the Collembola communities. At the sample locality (Antwerpen, Belgium) three sample sites were selected: (1) dominated by *S. inaequidens*, (2) dominated by *S. jacobaea* and (3) both species equidominant. In each site, four pairs (one *S. inaequidens* and one *S. jacobaea*, maximum 1.5m apart) of plants were selected. The soil fauna was sampled in the rootzone of the plants in the autumn of 2006 with core samplers (5 cm deep, 8 cm Ø) and extracted with berlese-Tullgren. Overall, we collected 1423 specimen belonging to 20 taxa. 5 species were found in significantly higher numbers under the native *S. jacobaea* while 1 species had higher numbers under *S. inaequidens*.

## TH 23
## The currently known distribution of *Acizzia jamatonica* (Hemiptera: Psyllidae), a major pest of silk tree, in Europe

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Silk tree, *Albizia julibrissin* Durazzini, is a woody ornamental plant, which was introduced from Asia to Europe and then from Europe to North America in the mid-eighteenth century (Cothran, 2004). Due to its decorative appearance, it is planted in both public and private areas especially in the southern parts of Europe.

Acizzia jamatonica is a psyllid species native to East Asia. The primary damage of the pest is the weakening of different parts of silk tree caused by sucking, or, in the case of heavy infestations, the discolouration and desiccation of leaves. However, the excreted sticky honeydew may cause further problem and inconvenience by dropping onto and covering the surface of any objects (e.g. parked cars) under the infested silk trees.

The pest was recorded from Japan, Korea and China (Kuwayama 1908, Kwon 1983, Miyatake 1963). In Europe, it was first found in the northern part of Italy in 2001 (Alma et al. 2002) from where it might be supposed to start spreading to other parts of Europe. The psyllid was detected in Slovenia and Croatia (Seljak, 2003, 2006, Seljak et al., 2004, Šimala et al., 2006), France (EPPO, 2004), Switzerland (Wittenberg, 2005), Hungary (Pénzes et al., 2005, Rédei et Pénzes, 2006), Spain (Grimau, 2006, Sanchez et Burckhardt, 2009), Greece (Zartaloudis, 2007, Pásztor et al., 2010), Bulgaria (Vétek et Rédei, 2009) and Serbia (Vétek et al., 2009). The first report of the occurrence of A. jamatonica in North America was given by Ulyshen et Miller (2007).

Although neither the active nor the passive (with the help of wind) spread of the pest can be excluded, the role of effective control methods such as the use of healthy planting material has to be emphasised so that the further spread of *A. jamatonica* could be prevented as far as possible.

## TH 24
## Occurrence of the multicoloured Asian ladybird beetle, *Harmonia axyridis* (Pallas, 1773) (Coleoptera: Coccinellidae) in Hungarian habitats

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The multicoloured Asian ladybird beetle (*Harmonia axyridis* (Pallas, 1773)) was used for a long time as a successful biological control agent in the USA and Western Europe for reducing aphid, psyllid and scale populations in green houses, orchards and fields. However, it has been realized as an invasive alien species threatening the diversity of native aphidophagous insects through competition and direct praying. In addition, *H. axyridis* became a horticultural pest consuming various fruits and adversely affecting the wine production. Regarding its direct influence to humans, it is now a nuisance when occurring at high densities in buildings and contacting people and furnishings. Unfortunately, little attention has been paid to the expansion and spread of feral populations of *H. axyridis* in many European countries, thus it has been found in 2008 also in Hungary, and regarding its establishment and spread in other European countries, it will occupy presumably quickly our territory. *H. axyridis* must be a hazard for our native ladybird beetle species as well as for other aphidophagous arthropods. In the New World and also in some European countries it became one of the dominant coccinellid species competing and preying on native ladybirds. Present study shows the abundance and species composition of coccinellid assemblages in some Hungarian habitats in order to assess the pressure of *H. axyridis* on native coccinellids and to report on its dispersion in the north-eastern part of the country.

## TH 25
## Attack intensity of *Corythucha ciliata* (Hemiptera, Tingidae) on *Platanus spp.* in an urban area in Portugal: a comparison between pruned and unpruned trees

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*Corythucha ciliata* (Say, 1832), commonly known as sycamore lace bug (SLB), is an insect species native to North America. Since its accidental introduction in Europe (through Italy) in 1964, it has expanded across most European countries. The arrival of SLB in Portugal is uncertain but its distribution is wide. Sycamore (*Platanus spp.*), the only host of SLB, is one of the most widespread and important urban tree species in Portugal. It provides a wide range of environmental, social and economical benefits, which have been threatened by the invasion of this pest. SLB damages trees by feeding on the underside of the leaves causing discoloration and eventually premature senescence. While the long-term effect of SLB on the health of urban trees is yet to be fully assessed, there is compelling evidence that pruning further increases SLB damage. In this study we assessed the impact of pruning on the attack intensity of

SLB. To test the hypothesis that pruning promotes the invasion of SLB, we compared the intensity of attack of pruned trees with unpruned trees. We collected sycamore leaves from pruned and unpruned trees and then assessed the intensity of attack by scaling damage by visual rating. Our findings show that pruned trees exhibit significantly higher attack intensities than unpruned trees ($p < 0{,}001$, $\chi^2$ goodness of fit). Based on these findings we recommend that sycamore pruning should be performed with caution (or even ceased), especially in urban areas where SLB is present.

## TH 26-46: Xenobiotic effects and side-effects on arthropods

### TH 26
### Fumigant toxicity of Essential oil from Thymus kotschyanus on Callosobruchus maculatus and Ephestia kuehniella

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Imbalanced and extended uses of broad-spectrum pesticides have caused development of resistant strains of insects, huge obliteration of useful organisms, out break of secondary pests and unwanted environmental effects. In recent years, essential oils have received much interest as pests control agents because of their insecticidal, repellent and antifeedant properties. In this research, insecticidal activity of essential oil from *Thymus kotschyanus* Boiss and Hohen. was studied against *Callosobruchus maculatus* F. and *Ephestia kuehniella* Zeller. The dry leaves and flowers of plants were subjected to hydrodistillation using a Clevenger-type apparatus for 3 h. Detection has been done by GC_MS. Twenty three compounds of the oil were identified, the main one is Carvacrol (64.27 %). The experiment was conducted on 1-7 day old adults of insect at 26±1 and 65±5 R.H. in dark condition. The potency of fumigant effects of *T. kotschyanus* on *C. maculatus* and *E. kuehniella* were determind. $LC_{50}$ values of *C. maculatus* and *E. kuehniella* were 3.31 and 0.95 respectively. $LT_{50}$ values of *C. maculatus* and *E. kuehniella* were ranged from 1.85 to 1.02 h. and 3.14 to 1.16 h. respectively, For the highest dose (46.2 µL/L air). The half-life time of the *T. kotschyanus* oil at the 77 µL/L air on *C. maculatus* (73 days) was shorter than *E. kuehniella* (91 days).

*This study suggest the efficacy of T. kotschyanus oil for the management of stored product insects.*

### TH 27
### The lethal effects of Spinosad on *Chrsoperla carnea* larvae (Neu: Chrisopidae) via ingestion technique under laboratory conditions

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*Chrysoperla carnea* (Stephens) is a widespread polyphagous predator, used in biocontrol of aphids in greenhouses and very common in many agricultural systems. All rearing of *C. carnea* using methods described Malkashi *et al* (1385). Insect were reared at 25±1 $C^o$, 65±10% RH, and photoperiod of 15:8 h light: dark regime. Rearing dishes were plastic cylindrical in size 35×25×15 cm that for prevention of cannibalism and decrease of intervals vacuum using paper piece and mesh. The opening is covered with a piece of mesh. The eggs supply in rearing dishes. After hatching, Chrysopid larvae fed on eggs of *Ephestia cautella* Zeller. Some of the larvae used in experimentation and the other rearing for producing adult. To study Susceptibility this predator, we used a commercial formulation of biorational insecticide, Spinosad, Tracer$^R$ against several stages of larvae *Chrysoperla carnea* with two bioassay methods, contact and ingestion. To stabilize variances, proportion data were transformed [arcsin sqrt (x + 0.001)] before analysis. The $LT_{50}$ , $LT_{95}$ , $LC_{50}$, $LC_{95}$ and related statistics were estimated using SPP 10 .Spinosad commercial formulation was applied at doses of 250, 440, 800, 1400 and 2500 ppm for first instar. Concentration 2500 ppm in 72 h after exposure was the more mortality in first instar and a direct relationship between mortality rate and Spinosad concentration was detected. The $LC_{50}$ values in 24, 48, and 72 h of exposure were estimated 1076,516 and 341 ppm and the $LT_{50}$ was 16 h, too. For second and third instar larvae Spinosad commercial formulation was applied at doses of 500, 780, 1220, 1920 and 3000 ppm. The $LC_{50}$ values in 24, 48, and 72 h of exposure for second instar were estimated 1999, 3737 and 1682 ppm and for third instar were estimated 16139, 4717 and 2639 ppm. The $LT_{50}$ was 51 h for second instar and 61 h for third instar, too.

### TH 28
### Bioactivity of *Satureja hortensis* (Lamiaceae) and *Zingiber officinale* (Zingiberaceae) against the Mediterranean flour moth, *Ephestia kuehniella* (Lepidoptera: Pyralidae)

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Concerns over health and environmental problems associated with synthetic insecticides currently in use in agriculture, have led to an intensification of efforts to find safe, effective and viable alternatives; so in recent years, plant essential oils have received a great deal of attention as pest control agents. In this study the essential oils were extracted from Summer savory, *Satureja hortensis* leaves and Ginger, *Zingiber officinale* rhizomes through hydrodistillation. The essential oils evaluated for their repellent and toxic effects on the Mediterranean flour moth, *Ephestia kuehniella* (Zell.). Contact toxicity assayed by application of different concentration of oils on filter paper discs. The mortality of 14 day-old larvae of *E. kuehniella* was evaluated after 18 hour. Repellent activity against adult moths was evaluated after 1 hour at 0.8- 51.2 µl/l concentrations using connected glass vials bioassays. The results suggest that the Summer savory oil ($LC_{50}$= 0.27 µl/cm$^2$) was more toxic than Ginger oil (LC50= 0.61 µl/cm$^2$). Moreover, there was significant deference between the repellency of the oils. Repellent activity of Ginger oil reached maximum i.e. 71.67% at 51.2 µl/l concentration; while Summer savory oil didn't cause repellency more than 63.33% in all concentrations. All concentrations over 12.8 µl/l cause decrease in repellency of *S. hortensis* oil. In the best state, both of these essential oils showing the repellency of class IV activity.