

NEW DATA ABOUT THE GALLS FROM TINCA AREA (BIHOR COUNTY, ROMANIA)

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Abstract

The study presented the species which induce galls, identified in Tinca area during 2003-2017. These species (93) belongs to different taxonomic groups: insects, acari, fungus. The biggest percentage is held by insects - 76 species, followed by Acari - 11 species and Fungus - 6 species. The most represented family is Cynipidae - 36 species. The distribution of the orders of gall inducing insects is the next - Diptera-39 species, Hymenoptera - 30 species, Homoptera - 6 species, Coleoptera - 1 species. Within the fungi, the distribution is the following: Ascomycetae - 1 species, Erysiphaceae - 1 species, Peronosporaceae - 2 species, Hypocreaceae - 1 species, Pucciniaceae - 1 species.

Keywords: galls, Tinca area, gall-inducting species.

1. INTRODUCTION

Tinca area is located in the South Western part of Bihor County, belonging to the historical province of Crișana, with a surface of 454 km², at the confluence of the Miersigului Plain and the Holodului Depression. The middle altitude is 130 m, the climate is temperate - continental moderate and the drainage is represented by Crișul Negru River.

Galls are considered those abnormal outgrowths of plant tissues caused or induced by various vegetal or animal parasite sources.

Galls are developed in a certain organ of the plant and in a certain period of time, representing a defence reaction of the attacked plant.

One part from the attacked plants belongs to the agricultural cultures or woody essences, so in certain periods of vegetation can produce important economic damages.

2. MATERIALS AND METHODS

The collecting of galls was recorded during 2003-2017, in the period April - October, in different ecosystems from Tinca area: oak forest, beech forest, forest mixture of different deciduous forests, pastures with Gramineae (Poaceae) and other plants, the waterside of Crișul Negru River.

The galls were collected into plastic bags, together with one part from the attacked organ the plant. After the identification of the gall-inducting species, of the host plant and of the attacked organ and the collecting data were written down. The determinations were realized after the galls and / or gall-inducting, insect species, using different guides (Darlington, 1968; Neacșu, 2006). Notes about the galls from Tinca area are found in the works of Ilie and Marinescu (2011), Ilie (2012, 2013, 2014).

3. RESULTS AND DISCUSSIONS

Following the researches recorded in Tinca area in the analyzed period, a number of 93 gall-inducting species was identified. The distribution and systematic framing are presented in Table 1:

Table 1. The distribution and the systematic frame of gall-inductors from Tinca area (original)

Gall-inductors	Orders, Classes, Families
Acari	<i>Eriophyidae</i>
Insects	<i>Homoptera (Aphididae, Pemphigidae, Schizoneuridae)</i> <i>Hymenoptera (Cynipidae, Tenthredinidae)</i> <i>Coleoptera (Curculionidae)</i> <i>Diptera (Cecidomyiidae, Tephritidae)</i>
Fungus	<i>Ascomycetae, Erysiphaceae, Peronosporaceae, Hypocreaceae, Pucciniaceae</i>

The list of the galigene species from Tinca area:

- Aceria macrochela* Nalepa, 1851 (*Eriophyidae*) - on the lamina of *Acer* Linnaeus, 1758
- Dasyneura tympani* Kieffer, 1909 (*Cecidomyiidae*) - on the lamina of *Acer campestre* Linnaeus, 1763
- Dasyneura acercrispans* var. *rubella* (*Cecidomyiidae*) - the young lamina of *Acer* Linnaeus, 1758
- Rhopalomyia ptarmicae* Vallot, 1849 (*Cecidomyiidae*) - on the inflorescences of *Achillea* Linnaeus, 1763
- Aceria (Eriophyes) brevitarsa* Fockeu, 1890 (*Eryophyidae*) - on the lamina of *Alnus* Miller, 1823
- Dasineura alni* Low 1877 (*Cecidomyiidae*) - on the lamina of *Alnus* Miller, 1823
- Stefaniella ceconii* Kieffer, 1909 (*Cecidomyiidae*) - on the inflorescences of *Atriplex patula* Linnaeus, 1763.
- Eriophyes canestrinii* Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Buxus sempervirens* Linnaeus, 1783
- Monarthropalus buxi* Geoffroy, 1950 (*Cecidomyiidae*) - on the lamina of *Buxus sempervirens* Linnaeus, 1783
- Dasyneura ruebsaameni* Kieffer, 1909 (*Cecidomyiidae*) - on the lamina of *Carpinus betulus* Linnaeus, 1763
- Euribia (Tephritis) cardui* Linnaeus, 1758 (*Tephritidae*) - on the stem of *Cirsium* Miller, 1823
- Craneiobia corni* Giraud (*Cecidomyiidae*) - on the lamina of *Cornus* Linnaeus, 1763
- Contarinia corylina* Low, 1787 (*Cecidomyiidae*) - on the amentum of *Corylus* Linnaeus, 1746
- Dasyneura crataegi* Winn, 1853 (*Cecidomyiidae*) - on the leafs of copse of *Crataegus* Linnaeus, 1746
- Hartigiola annulipes* Hartig, 1839 (*Cecidomyiidae*) - on the lamina of *Fagus sylvatica* Linnaeus, 1758
- Mikiola fagi* Hartig, 1839 (*Cecidomyiidae*) - on the lamina of *Fagus sylvatica* Linnaeus, 1758.
- Dasyneura glechomae* Kieffer, 1909 (*Cecidomyiidae*) - on the leafs of copse of *Glechoma hederacea* Linnaeus, 1763
- Rondaniola bursaria* Bremi, 1847 (*Cecidomyiidae*) - on the lamina of *Glechoma hederacea* Linnaeus, 1763
- Pseudoperonospora humuli* Wilson, 1914 (*Peronosporaceae*) - on the lamina of *Humulus lupulus* Linnaeus, 1758

Aceria (Eriophyes tristriata) erinea Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Juglans regia* Linnaeus, 1758

Dasyneura mali Kieffer, 1909 (*Cecidomyiidae*) - the lamina of *Malus Miller*, 1823

Contarinia medicaginis Kieffer, 1909 (*Cecidomyiidae*) - on the floral bud of *Medicago sativa*, Linnaeus, 1758

Ascomyces aureus Monter & Desmond, 1863 (*Ascomycetes*) - on the lamina of *Populus* Linnaeus, 1763

Pemphigus bursarius Linnaeus, 1758 (*Pemphigidae*) - on the petiole of *Populus* Linnaeus, 1763

Pemphigus filaginis Fonseca, 1857 (*Pemphigidae*) - on the petiole of *Populus* Linnaeus, 1763

Pemphigus spirothecae Passerini, 1860 (*Pemphigidae*) - on the petiole of *Populus* Linnaeus, 1763

Albugo portulacae Kuntze, 1853 (*Peronosporaceae*) - on the lamina and the stems of *Portulaca* Linnaeus, 1763

Macrolabis rüebsaameni Hedicke, 1938 (*Cecidomyiidae*) - on the inflorescences of *Prunella* Linnaeus, 1758

Roepkea marchali Borner, 1931 (*Homoptera*) - on the leafs of copse of *Prunus cerasifera* Erherbert, 1897

Polystigma rubrum Person, 1815 (*Hypocreaceae*) - on the lamina of *Prunus domestica* Linnaeus, 1758

Andricus caputmedusae Hartig, 1843 (*Cynipidae*) - on the copse of *Quercus* Linnaeus, 1763.

Andricus foecundatrix Hartig, 1843 (*Cynipidae*) - at the base of petiole of *Quercus* Linnaeus, 1763

Andricus gallaeinctoriae Olivier, 1791 (*Cynipidae*) - at the base of petiole of *Quercus* Linnaeus, 1763

Andricus hungaricus Hartig, 1843 (*Cynipidae*) - on the buds of *Querqus* Linnaeus, 1763

Andricus kollari Hartig, 1843 (*Cynipidae*) - on the buds of *Querqus* Linnaeus, 1763

Biorhiza pallida Olivier, 1791 (*Cynipidae*) - at the extremity of the branch of *Querqus* Linnaeus, 1763

Cynips divisa Hartig, 1843 (*Cynipidae*) - the nervures of the ventral part of the lamina of *Querqus* Linnaeus, 1763

Cynips querqus Fourcroy, 1785 (*Cynipidae*) - the nervures of the ventral part of the lamina of *Querqus* Linnaeus, 1763.

Cynips querqusfolii Linnaeus, 1758 (*Cynipidae*) - the nervures of the ventral part of the lamina of *Querqus* Linnaeus, 1763.

Neuroterus numismalis Olivier, 1791 (*Cynipidae*) - on the ventral part of lamina of *Querqus* Linnaeus, 1763

Neuroterus querqusbaccarum Linnaeus, 1758 (*Cynipidae*) - on the ventral part of lamina of *Querqus* Linnaeus, 1763

Synophrus politus Hartig, 1843 (*Cynipidae*) - on the branches of *Querqus cerris* Linnaeus, 1758

Macrodiplosis dryobia Low, 1878 (*Cecidomyiidae*) - on the lamina of *Querqus* Linnaeus, 1763

Sphaerotheca pannosa var. *rosae* Worel, 1876 (*Erysiphaceae*) - on the lamina of *Rosa* Linnaeus, 1763

Blenoncampa pusilla Klug, 1816 (*Tenthredinidae*) - on the lamina of *Rosa* Linnaeus, 1763

Diplolepis eglantariae Hartig, 1763 (*Cynipidae*) - on the lamina of *Rosa* Linnaeus, 1763

Diplolepis rosae Linnaeus, 1758 (*Cynipidae*) - on the branches, lamina and fruits of *Rosa* Linnaeus, 1763

Wachtliella rosarum Hardy, 1850 (*Cecidomyiidae*) - on the lamina of *Rosa* Linnaeus, 1763

Dasyneura plicatrix Low, 1878 (*Cecidomyiidae*) - on the lamina of *Rubus* Linnaeus, 1763

- Lasyoptera rubi* Schrank, 1803 (*Cecidomyiidae*) - on the stems of *Rubus* Linnaeus, 1763
- Pontania proxima* Serville, 1823 (*Tenthredinidae*) - on the lamina of *Salix* Linnaeus, 1763
- Pontania vesicator* Bremi, 1849 (*Tenthredinidae*) - the lamina of *Salix* Linnaeus, 1763
- Dorytomus taeniatus* Fabricius, 1781 (*Curculionidae*) - the inflorescence of *Salix* Linnaeus, 1763
- Iteomyia capreae* Winnertz, 1853 (*Cecidomyiidae*) - the lamina of *Salix* Linnaeus, 1763
- Rhabdophaga (Helicomyia) saliciperda* Dufour, 1841 (*Cecidomyiidae*) - on the branches of *Salix* Linnaeus, 1763
- Rhabdophaga terminalis* Low, 1878 (*Cecidomyiidae*) - on the lamina of *Salix* Linnaeus, 1763
- Cystiphora sonchi* Low, 1878 (*Cecidomyiidae*) - on the lamina of *Sonchus* Linnaeus, 1763
- Eriophyes exilis* Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Tilia* Linnaeus, 1763
- Eriophyes lateannulatus* Schulze, 1918 (*Eriophyidae*) - on the lamina of *Tilia* Linnaeus, 1763
- Eriophyes leiosoma* Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Tilia* Linnaeus, 1763
- Didydomya reaumuriana* Low, 1878 (*Eriophyidae*) - on the lamina of *Tilia* Linnaeus, 1763
- Dasyneura trifolii* Low, 1878 (*Eriophyidae*) - on the lamina of *Trifolium* Linnaeus, 1758
- Byrsocrypta (Tetraneura) ulmi* Linnaeus, 1758 (*Aphididae*) - on the lamina of *Ulmus* Linnaeus 1763
- Janetiella lemei* Kieffer, 1909 (*Cecidomyiidae*) - on the principal nervure of the lamina of *Ulmus* Linnaeus, 1763
- Dasyneura urticae* Perris, 1840 (*Cecidomyiidae*) - on the leafs, stems and flowers of *Urtica dioica* Linnaeus, 1758
- Japiella veronicae* Vallot, 1827 (*Cecidomyiidae*) - on the lamina of *Veronica chamaedrys*, Linnaeus, 1758
- Dasyneura viciae* Kieffer, 1909 (*Cecidomyiidae*) - on the leafs of the branches top of *Vicia* Linnaeus, 1758
- Dasyneura affinis* Kieffer, 1909 (*Cecidomyiidae*) - the lamina of young leafs of *Viola odorata* Linnaeus, 1758
- Eriophyes vitis* Pagen Stecher, 1857 (*Eriophyidae*) - on the lamina of *Vitis* Linnaeus, 1758.
- Cryptomyzus ribis* Linnaeus, 1758 (*Aphididae*) - on the lamina of *Ribes rubrum* Linnaeus, 1758
- Rhabdophaga heterobia* Low, 1878 (*Cecidomyidae*) - on the lamina or the female amentum of *Salix* Linnaeus, 1763
- Andricus coriarius* Hartig, 1843 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Andricus coronatus* Giraud, 1859 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763.
- Andricus glutinosus* Giraud, 1859 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Andricus lucidus* Hartig, 1843 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Andricus lignicola* Hartig, 1843 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Aphelonyx cerricola* Giraud, 1859 (*Cynipidae*) - on the branches of *Quercus* Linnaeus, 1763
- Chilospis nitida* Giraud, 1859 (*Cynipidae*) - on the branches of *Quercus* Linnaeus, 1763
- Dryomyia circinnans* Giraud, 1858 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Neuroterus anthracinus* Curtis, 1838 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Neuroterus lanuginosus* Giraud, 1859 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Neuroterus petioliventris* Hartig, 1843 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Trigonaspis megaptera* Panser, 1801 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Gymnosporangium sabinae* Dicks, 1830 (*Basidiomycetae*) - on the lamina of *Pyrus* Linnaeus, 1758
- Eriophyes padi prunianus* Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Prunus spinosa* Linnaeus, 1758

Schizoneura (Eriosona) lanuginosa Harting, 1843 (*Schizoneuridae*) – at the branctop of *Ulmus* Linnaeus, 1763

Lipostenes glechomae Linnaeus, 1758 – on the lamina of *Glechoma hederacea* Linnaeus, 1758

Diastrophus rubi Bouche, 1860 – on the stem of *Rubus idaeus* Linnaeus, 1758

Rhabdophaga rosaria Low, 1850 (*Cecidonyidae*) – on the terminal leaves of *Salix* Linnaeus, 1763

Obolodiplosis robiniae Haldeman, 1847 (*Cecidomyidae*) – on the leaves of *Robinia pseudoacacia* Linnaeus, 1758.

Aceria tetranothrix Nalepa, 1891 (*Eriophyidae*) – on the lamina of *Salix* Linnaeus, 1763

Euribia cardui Linnaeus, 1758 (*Tephritidae*) – on the stem of *Cirsium arvense* Linnaeus, 1758

Gymnosporangium sabinae Oerst, 1863 (*Pucciniaceae*) – on the lamina of *Pyrus communis* Linnaeus, 1758

Aceria tristiata Nalepa, 1891 (*Eriophyidae*) – on the lamina of *Juglans regia* Linnaeus, 1758

From the total of the 93 gall-inducting species, the family *Cecidomyidae* is prevalent from the specific character point of view (36 species – 38.70%), followed by *Cynipidae* (27 species – 29.03%), *Eriophyidae* (11 species – 11.82%), *Pemphigidae* (3 species – 3.22%), *Tenthredinidae* (3 species – 3.22%), *Peronosporaceae* (2 species – 2.15%), *Aphididae* (2 species – 2.15%), *Tephritidae* (2 species – 2.15%), *Ascomycetes* (1 species – 1.07%), *Hypocreaceae* (1 species – 1.07%), *Erysiphaceae* (1 species – 1.07%), *Schizoneuridae* (1 species – 1.07%), *Pucciniaceae* (1 species – 1.07%) and *Curculionidae* (1 species – 1.07%).

The percentage ratio of the groups of gall-inducting organisms is the next: Insects – 76 species (81.72%), Acari – 11 species (11.82%) and Fungus – 6 species (6.45%).

The percentage distribution of the orders of gall-inducting insects is the next: *Diptera* – 39 species (51.31%), *Hymenoptera* – 30 species (39.47%), *Homoptera* – 6 species (7.89%) and *Coleoptera* – 1 species (1.31%).

Within the Fungi the percentage ratio is: *Ascomycetae* – 1 species (16.6%), *Erysiphaceae* – 1 species (16.66%), *Peronosporaceae* – 2 species (33.33%), *Hypocreaceae* – 1 species (16.66%), *Pucciniaceae* – 1 species (16.66%).

4. CONCLUSIONS

In the analyzed period, in Tinca area, 93 gall-inducting species were identified, the biggest percentage being held by insects.

The gall-inducting species belongs to three groups of organisms: insects, acari, fungus.

5. REFERENCES

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