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## INSECT PESTS OCCURRING ON THE DIFFERENT *IRIS* L. (IRIDACEAE) TAXA

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The experiment was carried out in years 2012–2013 in the Collection of Ornamental Plants of the Agricultural University in Cracow. Six *Iris* taxa – *Iris graminea* L. and hybrids from Sibiriceae section: I. 'Wisley White', 'Wiltrude Gissel', 'Violet Meer', 'White Swirl', I. 'Towanda Redflare' × *I. sibirica* hybrid (RF × I SK) were observed. Each taxon was represented by five clumps. In weekly intervals from May to August, the insects: *Mononychus punctumalbum* (Hbst.), *Phorbia servadei* (Seguy), *Oxythyrea funesta* (Poda.) and *Aphthona nonstriata* (Goeze) were collected from the selected plants. The differences in infestation of different *Iris* taxa by pests were noted. The most infested by pests was the hybrid from Sibiriceae section I. 'Wiltrude Gissel' whereas hardly attacked species was *Iris graminea*. *M. punctumalbum* and *P. servadei* were the most frequently occurring insects. The adults of *M. punctumalbum* were observed in the greatest numbers on 'Wiltrude Gissel', 'Violet Meer' and RF × I SK hybrid. *P. servadei* larvae were most abundant in the buds of 'Wiltrude Gissel' and 'Violet Meer'. *O. funesta* and *A. nonstriata* occurred in a small number whereas a common pest – *A. newtoni* – was not found.

**Keywords:** Iridaceae, pests, infestation

The plant genus *Iris* L. comprises approximately 300 species distributed across the northern temperate zones. Irises are perennial plants known since ancient times, initially cultivated for their medicinal and aromatic properties, now as ornamental plants (Komarnicki, 1993). Nowadays, not only species but also the varieties of irises are known and identified (Komarnicki, 1993; Kulig 2012). Due to the beauty of their flowers and diversity of their colours, the Latin name – *Iris* – is given to the genus in honor of Greek goddess of the rainbow (Lubowicka, 1977; Rejewski, 1996; Goldblatt and Manning, 2008).

Irises are attacked by a wide range of insect pests which weaken the plants and reduce their ornamental value. The most common ones are *Mononychus punctumalbum* (Hbst.), *Phorbia servadei* (Seguy), *Aphis newtoni* Theo., *Aphthona nonstriata* and *Oxythyrea funesta* (Poda.) (Perju et al., 1997; Remaudiere and Remaudiere, 1997; Blackman and Eastop, 2006; Popov et al., 2007; Gültekin and Korotyaev, 2012).

The adults of *M. punctumalbum* feed mainly on flowers of Iridaceae whereas larvae consume seeds in capsules (Gültekin and Korotyaev, 2012). Larvae of *P. servadei* live in flower buds and destroy them (Popov et al., 2007) whereas *A. newtoni* develop on leaves and weaken plants. On the honeydew, the fungi develop, reducing the ornamental value of Irises.

The literature lacks detailed data on the susceptibility of *Iris* taxa on the pests. Therefore, the research was undertaken to investigate this problem. The aim of this work was to determine the effect of different *Iris* taxa on the occurrence of insect pests.

### Material and methods

The experiment was carried out in years 2012–2013 in the Collection of Ornamental Plants of the Agricultural University in Krakow. The plants were planted in the native soil, with pH

approximate to neutral. The beds were mulched with bark, which was supplemented each year, whereas weeds were removed mechanically.

Native beardless (*Limniris*) *Iris* species: grassy-leaved *Iris* (*Iris graminea* L.) and hybrids from Sibiriceae section: I. 'Wisley White', 'Wiltrude Gissel', 'Violet Meer', 'White Swirl', I. 'Towanda Redflare' – *I. sibirica* hybrid (RF × I SK) were observed. Each taxon was represented by five clumps. In weekly intervals from May to August, the insects: *Mononychus punctumalbum* (Hbst.), *Phorbia servadei* (Seguy), *Oxythyrea funesta* (Poda.) and *Aphthona nonstriata* (Goeze) were collected from the selected plants.

### Results and discussion

The differences in infestation of different *Iris* taxa by pests were noted. In both years of observations, the most infested by pests was hybrid from Sibiriceae section I. 'Wiltrude Gissel' – the highest number of species and specimens were noted on it (*M. punctumalbum*, *P. servadei*, *O. funesta* and *A. nonstriata*). The next one in the order of mostly colonized ones by pests were 'Violet Meer' and RF × I SK. One species of irises was almost not attacked by pests, it was *Iris graminea* – in both years only *A. nonstriata* beetles feeding on leaves were found (Figure 1 and 2).

There are few reports in the literature on the occurrence of insect pests on different *Iris* taxa. Gültekin and Korotyaev (2012) presented observations on two species of the weevil genus *Mononychus* that feed on seeds of *Iris* in Turkey. The authors found out that *I. iberica* is the host plant of *M. schoenherrii* whereas *M. punctumalbum* develops on *I. spuria*.

*M. punctumalbum* and *P. servadei* were the most frequently occurring insects. Perju et al. (1997) found out that seed-feeding species *M. punctumalbum* is a seminiphagous pest which can

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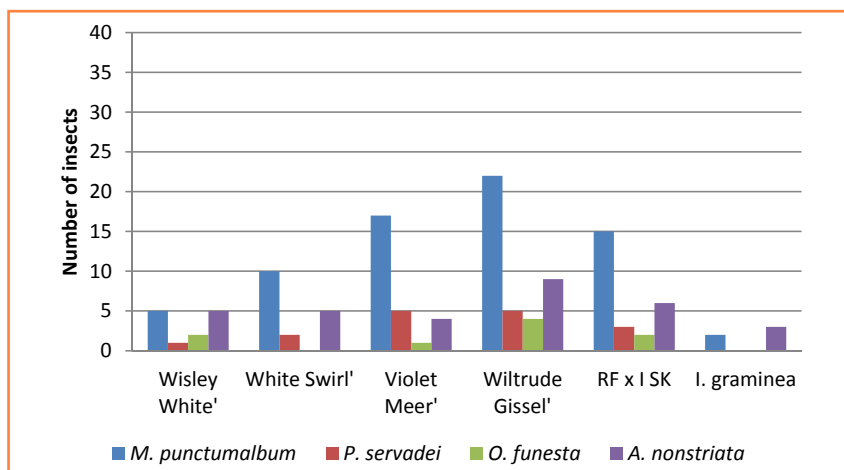


Figure 1 The occurrence of insect pests on the different Iridaceae taxa in 2012

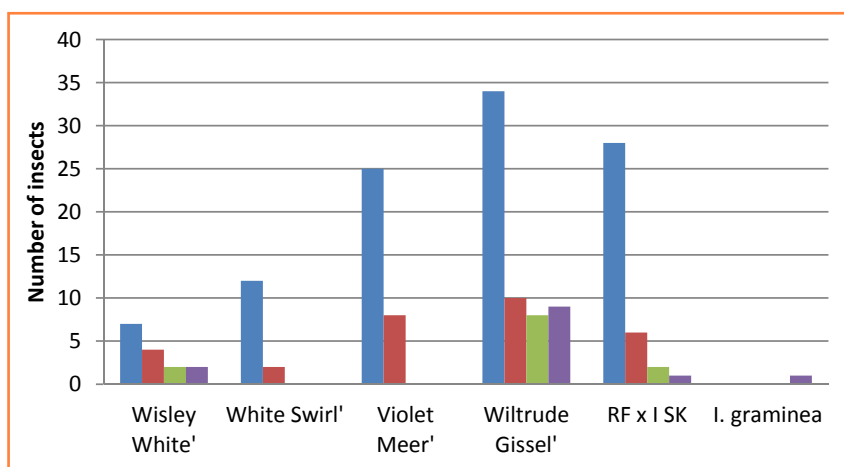


Figure 2 The occurrence of insect pests on the different Iridaceae taxa in 2013

reduce the substances produced by seed at Irises and can produce differences concerning the change of seed between different botanic gardens.

The adults of *M. punctumalbum* were observed in greatest numbers feeding on the flower petals and laying eggs in seeds capsules of 'Wiltrude Gissel', 'Violet Meer' and RF x I SK hybrid (Figure 1 and 2). It seems that violet coloured flowers were the most attractive ones for beetles. According to John and Fordham (1978) adults of *M. vulpeculus* and *M. punctumalbum* prefer blue and violet varieties of *I. sibirica*.

*P. servadei* larvae were the most abundant in buds of 'Wiltrude Gissel' and 'Violet Meer'. The least numbers of injured buds were noted on 'Wisley White' and 'White Swirl' whereas *I. graminea* was not attacked. Popov et al. (2007) working on the biology of *P. servadei* also confirms that larvae didn't developed in *I. graminea* buds.

*O. funesta* and *A. nonstriata* occurred on the observed Iris taxa in

small numbers. Vuts and Tóth (2007) found out that the adults of *O. funesta* cause damage to flowers of different plants. They destroy the petals, stamens and stigma thus rendering the flowers infertile.

It should be noted that the common pest – *A. newtoni* – observed by researches (Remaudiere and Remaudiere, 1997; Blackman and Eastop, 2006) on Iridaceae plants – was not found.

### Conclusion

1. The hybrid from Sibiriceae section I. 'Wiltrude Gissel' was the one most infected by pests, whereas *Iris graminea* was a species hardly attacked.
2. The most common pests were *M. punctumalbum* and *P. servadei*.
3. The adults of *M. punctumalbum* were observed in greatest numbers in 'Wiltrude Gissel', 'Violet Meer' and RF x I SK hybrid – violet coloured flowers were the most attractive for beetles.

4. *P. servadei* larvae were most abundant in buds of 'Wiltrude Gissel' and 'Violet Meer'.

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### References

- BLACKMAN, R. L. – EASTOP, V. F. 2006. Aphids on the World's Herbaceous Plants and Shrubs, 2 Volume Set. New Jersey : John Wiley and Sons. 1460 p. ISBN 978-0-471-48973-3.
- GOLDBLATT, P. – MANNING, J. C. 2008. The Iris family : Natural History and Classification. London: Timber Press. 336 p. ISBN 0881928976.
- GÜLTEKIN, L. – KOROTYAEV, B. A. 2012. Ecological description of two seed – feeding weevils of the genus *Mononychus* Germar (Coleoptera: Curculionidae) on *Iris iberica* Hoffmann and *Iris spuria* L. in Northeastern Turkey. In The Coleopterists Bulletin, vol. 66, no. 2, pp. 155–161. ISSN 1938-4394.
- JOHN, A. – FORDHAM, H. C. 1978. Insect Pests of Irises. The World of Irises. Wichita, Kansas : The American Iris Society.
- KOMARNICKI, L. 1993. Irysy. Warszawa : PWRiL. 212 p.
- KULIG, M. 2012. Characteristics of flowers of selected iris species and varieties from limniris section. In Electronic Journal of Polish Agricultural Universities [online], vol. 15, no. 1. ISSN 1505-0297. Available at: <http://www.ejpau.media.pl/volume15/issue1/art-04.html>.
- LUBOWICKA, H. 1977. Kosańce. Warszawa : PWRiL. 19 p.
- PERJU, T. – MOLDOVAN, I. – BUNESCU, H. 1997. The Iris seed weevil – *Mononychus punctumalbum* Hbst. (Curculionidae, Coleoptera) sin *Mononychus pseudacori* Fb. In Not. Bot. Agrobot. Cluj-Napoca, [online] vol. 27, no. 1, pp. 78–83. Available at: <http://www.notulaeobotanicae.ro/index.php/nbha/article/view/296>.
- POPOV, G. V. – LEZHENINA, P. – KHOLKHOYEVA, S. 2007. On the biology of *Acklandia servadeii* (Diptera: Antomyiidae), and *Iris hybrida* pests, and an accompanying species *Polyodaspis ruficornis* (Diptera: Chloropidae), in eastern Ukraine. In Kharkov Entomological Gazette, vol. 14, no. 1–2, pp. 182–188. ISSN 1726-8028.
- REJEWSKI, M. 1996. Pochodzenie łacińskich nazw roślin polskich. Warszawa: KiW. 172 p.
- REMAUDIERE, G. – REMAUDIERE, M. 1997. Catalogue of the world's Aphididae (Homoptera, Aphidoidea). Versailles : INRA. 478 p. ISSN 1210-5759.
- VUTS, J. – TÓTH, M. 2007. Flower scarab – *Oxythyrea funesta* Poda. <http://csalomontraps.com/4listbylatinname/pdf/fajonkentik/oxythyreafunestaang08.pdf>