

***Micromus angulatus* (Neuroptera: Hemerobiidae)**

Listed in: *PM 6/3 Biological control agents safely used in the EPPO region* (2022): Appendix 1 – commercially used biological control agents.

Further details are given for each BCA, including its preferred scientific name, common synonyms, taxonomic classification, the pests against which it is mostly targeted, its origin and the date of first use as a commercial agent. In cases where information is not known a (?) is detailed. Countries where it is or has been used in the EPPO region are also listed on the basis of information provided by the companies and by some EPPO countries. This information may not have been available from all EPPO countries and may therefore be incomplete. Each agent has been used commercially at some time in the countries listed, but in some cases may no longer be commercially available or used there. Information is also given, when available, on the natural distribution of the agent in the EPPO region, whether it is used in the field and/or under protected conditions. Additional remarks are included when necessary

**Detailed information** (from *PM 6/3 Biological control agents safely used in the EPPO region*)***Micromus angulatus***

Synonyms	<i>Eumicromus angulatus</i> , <i>Hemerobius angulatus</i> , <i>Hemerobius hopii</i>
Family	Hemerobiidae
Main target pests	Aphididae etc.
Original distribution	Cosmopolitan
Distribution in EPPO	Widespread (Holarctic)
Date of first use	2021
EPPO countries where used	Belgium, Germany, Russian Federation, UK
Use	Indoors/outdoors

**Criteria used for adding *Micromus angulatus* to PM 6/3 PM 6/3 Biological control agents safely used in the EPPO region**

**1. Criteria used for addition to the List\***

A biological control agent which is (or has been) commercially available or officially used	<input checked="" type="checkbox"/>
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**AND either**

Has been used for at least 5 years in at least 5 EPPO countries (exceptionally fewer, if relevant crops, target pests or plants are present in <5 countries), or	<input type="checkbox"/>
Is indigenous and widespread in part of, or the whole of EPPO region, or	<input checked="" type="checkbox"/>
Is established and widespread in part of, or the whole of the EPPO region	<input type="checkbox"/>

**AND**

There are no previous reports of adverse effects	<input checked="" type="checkbox"/>
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Criteria	Summary information (for EPPO region*)	References
BCA has been used for at least 5 years in at least 5 EPPO countries (exceptionally fewer, if relevant crops, target pests or plants are present in less than 5 countries)		
Is indigenous and widespread in part of, or the whole of EPPO region	Holarctic species. Europe from Macaronesia (Azores, Madeira) to the Urals, Africa (Morocco), Asia: Turkey, Israel, Kazakhstan, Russia	(Aspöck <i>et al.</i> , 1996, Kovanci <i>et al.</i> , 2014, Yang <i>et al.</i> , 2018; Dobosz <i>et al.</i> , 2019)
Is established and widespread in part of, or the whole of the EPPO region		

**References**

Aspöck, H. & Hölzel, H. (1996). The Neuropteroidea of North Africa, Mediterranean Asia and of Europe: a comparative review (Insecta). *Pure and Applied Research in Neuropterology*, 31-86.

Dobosz, R., Makarkin, V. N. & Sergeyev, M. E. (2019). Contributions to the knowledge of the entomofauna of the Sikhote-Alin Biosphere Reserve. I. Neuropteroid insects: alderflies (Megaloptera: Sialidae), snake-

flies (Raphidioptera) and lacewings (Neuroptera). *Annals of the Upper Silesian Museum in Bytom Entomology*, 28, 1-30.

Kovanci, O. B., Canbulat, S. & Kovanci, B. (2014). The brown lacewings (Neuroptera Hemerobiidae) of northwestern Turkey with new records, their spatio-temporal distribution and harbouring plants. *Revista Brasileira de Entomologia*, 58 (2), 147-156. (Annex 9)