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Data Article

Complete host specificity test plant list and associated data to assess host specificity of *Archanara geminipuncta* and *Archanara neurica*, two potential biocontrol agents for invasive *Phragmites australis* in North America

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ABSTRACT

Introduced European genotypes of *Phragmites australis* are invasive and widespread in North America. Decades of management using herbicide and other means have failed to control the species and its range and populations continue to expand. Allowing continued invasion threatens native wetland biota and an endemic North American subspecies *Phragmites australis americanus*. The lack of conventional management to control introduced *P. australis* triggered research to assess host specificity of two European noctuid moths, *Archanara geminipuncta* and *Archanara neurica*. These two species are considered particularly promising potential biocontrol agents for introduced *P. australis*. Here we provide the complete and approved list of test plants used to assess host specificity of *A. geminipuncta* and *A. neurica*. This includes data on neonate larval acceptance and survival under no-choice conditions, and oviposition tests for all plant species tested, including for different *Phragmites* subspecies currently occurring in North America. We further provide temperature profiles of select cities in the temperate native European distribution of the two noctuids and those

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in southern US climates. We used these long-term temperature records to assess whether overwintering eggs of *A. geminipuncta* and *A. neurica* can survive under climate conditions typical for the Gulf Coast region in North America. This data article refers to "Host specificity and risk assessment of *Archanara geminipuncta* and *Archanara neurica*, two potential biocontrol agents for invasive *Phragmites australis* in North America Biol. Control (2018)".

Specifications Table

Subject area	*Biology, plant insect interactions*
More specific subject area	*Invasive plants, biological weed control*
Type of data	*Tables of test plants, results of oviposition and larval development tests, and temperature profiles*
How data was acquired	*Reference literature on plant taxonomy, USDA Plants Database* [1] and city data available on the web: http://www.usclimatedata.com https://www.timeanddate.com
Data format	*Raw*
Experimental factors	*None*
Experimental features	*We used selected plant species to test acceptance or suitability for larval development or oviposition by two noctuid moths.* *We use temperature profiles of select locations to program incubators to resemble local climate conditions to test for winter survival of noctuid eggs.*
Data source location	[1] http://www.usclimatedata.com https://www.timeanddate.com
Data accessibility	*With this article*

Value of the data

- We provide a comprehensive list and results for all test plant species used to assess host specificity (oviposition and larval development) for *Archanara geminipuncta* and *Archanara neurica*. We provide data on larval survival, which provides a full overview of the selectivity of these moth species, and hence the safety of other wetland plants.
- We provide data on temperature profiles we used to assess the possibility of winter survival under different climate conditions for select locations in Europe and North America. This allows an assessment of the ability of *A. geminipuncta* and *A. neurica* to colonize regions with different climate conditions in North America based on their current distribution in Europe.

1. Data

The approval of specialized herbivores as biological weed control agents in North America requires extensive host specificity testing and federal (US and Canada) review [2]. Procedures to select appropriate test plant species are largely standardized and our host-plant selection was based on plant phylogeny, species of conservation or agricultural concerns, plants that are attacked by