

SWALLOW-WORT BIOLOGICAL CONTROL



Swallow-wort at the edge of a pasture in RI.



V. NIGRUM
FLOWERS



V. NIGRUM
SEED PODS



V. ROSSICUM
FLOWERS

What Are Swallow-worts?

Black and pale swallow-wort (*Vincetoxicum nigrum/ rossicum*) are two invasive species of climbing vine. *Vincetoxicum nigrum* originated from the Mediterranean regions of France, Italy, Portugal and Spain, and *V. rossicum* originated from Ukraine and southeastern Russia. Both species were introduced to North America as horticultural plants during the late 1800s. They are both now widely distributed along the Atlantic coast of the United States and in Ontario and Quebec in Canada. The plants thrive in forested areas, pastures,

and urban areas. Swallow-worts pose a real threat to ecological stability by changing soil chemistry and displacing native plants. Grazing animals avoid eating swallow-worts due to their toxicity.

Efforts to control these plants using conventional control methods such as mowing, hand pulling, and applying herbicides have been largely unsuccessful. This led URI researchers to initiate a biological control program for swallow-worts.

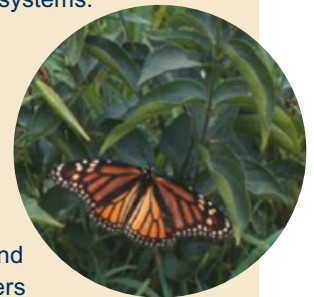
Biocontrol Project Program Status

In 2013, Canada made the first releases of *Hypena opulenta* in North America. In August of 2017 the USDA approved release of this biological control agent in the United States. The first US releases were made in Massachusetts and Rhode Island in 2017. URI is monitoring these releases and will work with other states and agencies to make additional releases.

SWALLOW-WORT IDENTIFICATION

These perennial vining plants have dark green leaves, belong to the milkweed family (Apocynaceae) and have strong root systems.

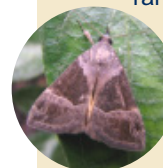
They produce slim, light green seed-pods with seeds similar to milkweeds. *Vincetoxicum nigrum* flowers are dark violet, and *V. rossicum* flowers are pale pink.



Monarch butterfly laying eggs on a swallow-wort, jeopardizing the survival of the resulting caterpillar, as these plants are unsuitable hosts.

URI'S BIOLOGICAL CONTROL PROGRAM

Classical biological control is the use of a natural enemy of an invasive species from its native range. Surveys in Europe and Ukraine found the *Hypena opulenta* moth, was determined to be a good candidate, as successful larval development only occurs on swallow-worts, it has multiple generations a year, and the potential to cause significant larval impact.



Hypena opulenta
moth

LIFE STAGES OF THE MOTH

L to R: 1) Mating adults; 2) Eggs on lower surface of leaves; 3) Caterpillar that feeds on leaves, stems, and pods; and 4) Pupae.

