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First Occurrence of *Hippodamia Variiegata* (Goeze) (Coleoptera:
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FIRST OCCURRENCE OF *HIPPODAMIA VARIEGATA* (GOEZE) (COLEOPTERA: COCCINELLIDAE) IN OHIO

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Ladybird beetles, or coccinellids (Coleoptera: Coccinellidae), are significant arthropod predators in a variety of terrestrial ecosystems. Numerous classical biological control projects undertaken over the last 120 years in North America have involved importation of exotic ladybird beetle species for the control of invasive insect species in annual and perennial agricultural production systems. Some examples of coccinellid species imported into North America in the last 40-50 years include the seven-spotted ladybird, *Coccinella septempunctata* L., the variegated ladybird, *Hippodamia variegata* (Goeze), and the multi-colored Asian ladybird, *Harmonia axyridis* (Pallas). Some of these imported coccinellids have established quite successfully in many habitats of the continent, and in at least certain situations, have demonstrated significant prey population regulation capacity.

As part of a study conducted in 2006 and 2007 to document arthropod predator communities in edge habitats associated with soybean agroecosystems, we were interested in determining if the nonnative coccinellid, *H. variegata*, was present in Ohio soybean agroecosystems. Much effort has been directed at documenting predatory coccinellids associated with soybean agroecosystems since the invasion and establishment of the soybean aphid, *Aphis glycines* Matsumura (Hemiptera: Aphididae), in North America. This alien aphid has become a major pest of soybeans in the North Central Region since being first observed in 2000 in Wisconsin (Alleman et al. 2002). Gardiner and Parsons (2005) detected *H. variegata* in Michigan in 2005, so we wished to know if this coccinellid had moved into Ohio.

Nonnative and native coccinellid species captured by sweep net are listed in Tables 1 and 2, respectively. In both years, *H. axyridis* was a dominant species in the collections. Larger numbers of coccinellids were collected in 2007 than in 2006, and a greater number of coccinellid species was collected in 2007 than in 2006. Interestingly, *H. variegata* was not collected in soybean fields in 2006, but was the second most common coccinellid species sampled in 2007. This represents the first published record for *H. variegata* in Ohio. It appears that *H. variegata* is spreading eastward from its original point of detection in Montreal in 1984 (Gordon 1987).

Table 1. Nonnative Coccinellid Species Associated with Soybean Agroecosystems.

Year	<i>Coccinella septempunctata</i>	<i>Hippodamia variegata</i>	<i>Harmonia axyridis</i>
2006	4	none collected	20
2007	30	26	21

Table 2. Native Coccinellid Species Associated with Soybean Agroecosystems.

Year	<i>Hippodamia parenthesis</i>	<i>Cycloneda munda</i>	<i>Coleomegilla maculata lengi</i>	<i>Brachiacantha ursina</i>	<i>Hippodamia convergens</i>
2006	none collected	1	2	none collected	none collected
2007	6	6	4	4	2

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