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Extension FactSheet

Horticulture and Crop Science, 2001 Fyffe Court, Columbus, OH 43210-1096

Apple of Peru: A New Invasive Weed in Ohio

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Background

- Apple of Peru (*Nicandra physalodes* L. Gaertn.), also known as Shoofly, was identified in Ohio in summer 2002.
- Apple of Peru is an annual weed in the tomato family, reproducing only by seed.
- Apple of Peru germinates continuously (spring, summer, and fall) in agricultural fields if moisture is available.
- Herbicides used by farmers to control other weeds in vegetable crops do not control apple of Peru adequately. Control in field crops is variable.
- Poor control results in heavy infestations as in Figure 1.
- Apple of Peru is a confirmed alternative host for cucumber mosaic virus.
- Apple of Peru is a serious weed problem in Asia, Australia, East and Southern Africa, and South America. It is one of the worst weeds in soybean growing areas in Brazil.
- Agricultural land in North Central Ohio has become infested with apple of Peru recently, in the last 5–7 years. These infestations are clustered in Seneca and Sandusky counties.

Figure 1. Apple of Peru in bell peppers in Ohio.

Figure 2. Apple of Peru was identified in Ohio soybean fields during 2003.

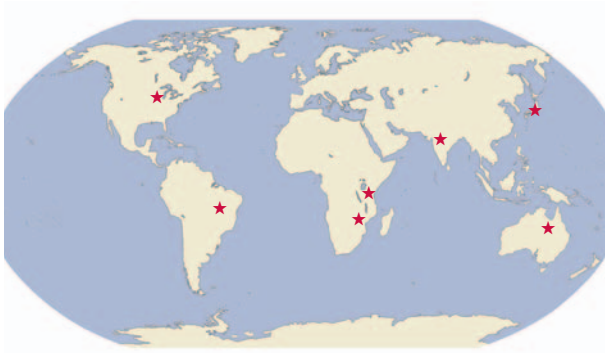

Figure 3. Regions where apple of Peru is an important weed of food crops.

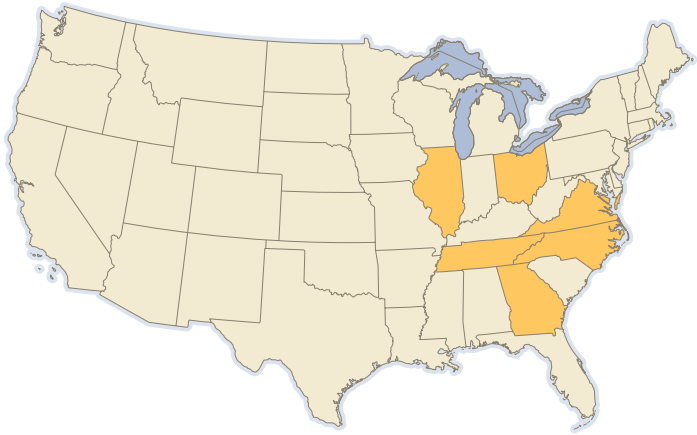

Figure 4. Recently emerging agricultural infestations have been detected in NC, VA, TN, IL, OH, and GA.

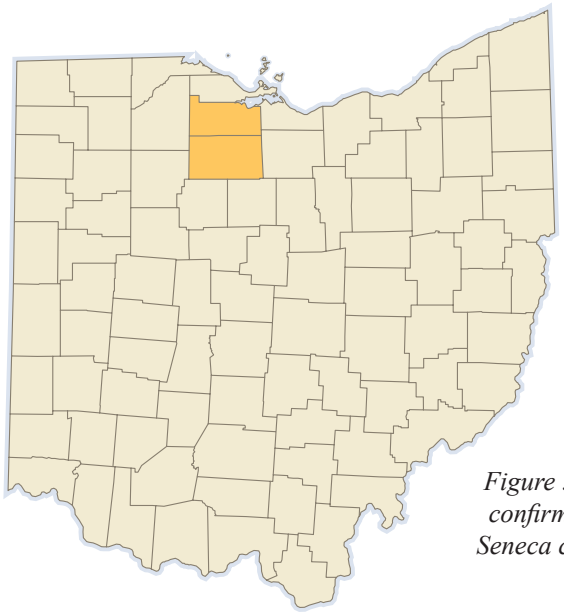

Figure 5. Surveys conducted during late summer 2003 confirmed apple of Peru infestations in Sandusky and Seneca counties, Ohio. Infested fields were in soybeans, corn, bell peppers, and tomatoes.

Confirmed Infestations in Ohio

Seneca and Sandusky counties were surveyed and mapped using a Global Positioning System by Ohio State University personnel in 2003 and 2004. Twenty-one field infestations were detected, totaling about 2,500 acres.

Facts about Apple of Peru

- Apple of Peru is a prolific seed producer. Large, persistent seedbanks quickly accumulate in the soil due to seed dormancy.
- Apple of Peru is very competitive with soybean and vegetable crops.
- Apple of Peru has low sensitivity to most commonly used herbicides (Table 1).

Table 1. Apple of Peru response to herbicides.

GROUP	RESPONSE*
PPO Inhibitors	Sensitive
Chloroacetamides	Poor–Moderate
ALS Inhibitors	Poor
Triazines	Sensitive
Bleaching	Poor–Sensitive

*Poor=0–30% control; Moderate=30–65% control; Sensitive=65–99% control

Figure 6. Apple of Peru leaf.

Figure 7. Apple of Peru has trumpet-shaped purple flowers that develop into papery, bladder-like structures encasing a single berry.

Figure 8. Apple of Peru fruit resembles that of groundcherry.

Figure 9. Infestations in Ohio during late summer 2003 varied from farm to farm, ranging from scattered individual plants to tens of thousands of plants per acre.

Figure 10. A single plant is capable of producing thousands of dormant seeds.

Identification and Reporting

- Five angled (pentagon) hollow stem with alternating leaves.
- Leaves are arrowhead-shaped and pointed at the tip, with irregularly toothed margins.
- Trumpet-shaped lavender flowers that may occasionally be white.
- Fruits (berries) are borne singly in a bladder-like structure.
- Report apple of Peru infestations to your county Extension educator or contact the Weed Ecology lab at Wooster, Ohio.
- Never allow apple of Peru to go to seed.

For more information, contact:

Weed Ecology group
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Also visit us online at:

http://www.oardc.ohio-state.edu/weedworkshop

Visit Ohio State University Extension's web site "Ohioline" at:
http://ohioline.osu.edu