Plant Risk Evaluator -- PRE™
Evaluation Report

Ampelopsis brevipedunculata 'Elegans' -- Illinois

2017 Farm Bill PRE Project

PRE Score: 18 -- Reject (high risk of invasiveness)
Confidence: 60 / 100
Questions answered: 18 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Submitted

Evaluation Date: October 13, 2017

This PDF was created on June 15, 2018

Plant Evaluated

Ampelopsis brevipedunculata 'Elegans'

Image by Gilles Delacroix/Garden World Images

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Ampelopsis brevipedunculata 'Elegans'*) in an effort to understand the invasive history, reproductive strategies, and the impact, if any, on the region's native plants and animals. This research reflects the data available at the time this evaluation was conducted.

Summary

Ampelopsis brevipedunculata 'Elegans' shows a high risk of invasiveness in Illinois due to its smothering vegetative growth, reproduction from bird-dispersed berries, and invasive behavior in similar climates.

General Information

Status: Submitted
Screener: Emily Russell
Evaluation Date: October 13, 2017

Plant Information

Plant: *Ampelopsis brevipedunculata 'Elegans'*

If the plant is a cultivar, how does its behavior differs from its parent's?
'Elegans' has variegated leaves which are more deeply lobed and slightly smaller than the species. It is also slightly less vigorous than the species. Reported by some as coming true from seed; others report reversion to the species.

Regional Information

Region Name: Illinois

Climate Matching Map

To answer four of the PRE questions for a regional evaluation, a climate map with three climate data layers (Precipitation, UN EcoZones, and Plant Hardiness) is needed. These maps were built using a toolkit created in collaboration with GreenInfo Network, USDA, PlantRight, California-Invasive Plant Council, and The Information Center for the Environment at UC Davis.

Click here to see the generated climate matching map for this region. This climate match database is hosted by GreenInfo Network and publicly accessible.

Evaluation Questions

These questions are based in an original article published at the University of California, Davis, and can be found on the PLOS One website, here: https://doi.org/10.1371/journal.pone.0121053

Invasive History and Climate Matching (Questions 1 - 6)

1. Has the species (or cultivar or variety, if applicable; applies to subsequent "species" questions) become naturalized where it is not native?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Ampelopsis brevipedunculata is naturalized across the Eastern United States. This answer relies on data for the species, so the confidence level is lowered to medium.

Reference(s):

- United States Department of Agriculture (2017). Plants Profile for Ampelopsis brevipedunculata (Amur peppervine).
- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.

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2. Is the species (or cultivar or variety) noted as being naturalized in the US or world in a similar climate?

- Answer: **Yes**, which contributes **2** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Ampelopsis brevipedunculata is naturalized in Illinois, as well as the Midwest, the Mid-Atlantic, and the Northeast where there is climate overlap with Illinois.

Reference(s):

- United States Department of Agriculture (2017). Plants Profile for Ampelopsis brevipedunculata (Amur peppervine).
- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.

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3. Is the species (or cultivar or variety) noted as being invasive in the U.S. or world?

- Answer: **Yes**, which contributes **2** points to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Ampelopsis brevipedunculata is "reported to be invasive in twelve states in the Northeast: Connecticut, Delaware, Massachusetts, Maryland, New Jersey, New York, Pennsylvania, Rhode Island, Virginia, Washington D.C., West Virginia, and Wisconsin." 'Elegans' is prohibited in Massachusetts, Maine, Wisconsin, Minnesota, and the City of Chicago.

Reference(s):

- US Forest Service (0). Ampelopsis brevipedunculata_Weed of the week.
- Midwest Invasive Plant Network (2015). Midwest Invasive Plant List.
- City of Chicago Department of Environment (2011). Article XXII. Invasive Species Control.
- Minnesota Department of Agriculture (MDA) (2017). Minnesota Noxious Weeds.
- Wisconsin Department of Natural Resources (2013). Porcelain berry - Wisconsin DNR.

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4. Is the species (or cultivar or variety) noted as being invasive in the US or world in a similar climate?

- Answer: **Yes**, which contributes **3** points to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

States where Ampelopsis brevipedunculata is reported invasive with climate overlap with Illinois: Maryland, New Jersey, New York, Pennsylvania, Virginia, Washington D.C., West Virginia, and Wisconsin. 'Elegans' is prohibited in the City of Chicago, as well as Maine, Wisconsin, and Minnesota, which share a climate with Illinois.

Reference(s):

- City of Chicago Department of Environment (2011). Article XXII. Invasive Species Control.
- Minnesota Department of Agriculture (MDA) (2017). Minnesota Noxious Weeds.
- Wisconsin Department of Natural Resources (2013). Porcelain berry - Wisconsin DNR.
- US Forest Service (0). Ampelopsis brevipedunculata_Weed of the week.
- Maine Department of Agriculture, Conservation and Forestry (2017). CRITERIA FOR LISTING INVASIVE TERRESTRIAL PLANTS.

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5. Are other species of the same genus (or closely related genera) invasive in a similar climate?

- Answer: **No**, which contributes **0** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

"In the United States, A. aconitifolia has escaped from cultivation in MI, NC, NJ, OH, PA, and New England. The species is also found in eastern Europe, in the Carpathian Mountains." However, A. aconitifolia has not been cited on invasive species lists and there is no documentation of damage caused by this species in the literature.

Reference(s):

- Burnam, R.J.. (0). Ampelopsis aconitifolia_CLIMBERS..

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6. Is the species (or cultivar or variety) found predominately in a climate matching the region of concern?

- Answer: **Yes**, which contributes **2** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Native distribution of the species in Northeast China, Korea, and Japan are a climate match. More than half of the naturalized distribution in the US is a climate match, excluding the Southern states.

Reference(s):

- GBIF (2016). GBIF Backbone Taxonomy: Ampelopsis brevipedunculata Koehne.
- USDA-Grin (2011). Ampelopsis glandulosa (Wall.) Momiy. var. brevipedunculata (Maxim.) Momiy. In: Taxonomy - GRIN-Global Web v 1.9.9.2.

Impact on Native Plants and Animals (Questions 7 - 10)

7. Does this plant displace native plants and dominate (overtop or smother) the plant community in areas where it has established?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

"The thick mats formed by this climbing vine can cover and shade out native shrubs and young trees." "Porcelainberry vines can dominate the vegetation by forming a uniform 'blanket' over shrubs, trees, and the ground, especially on forest edges." Cultivar 'Elegans' is slightly less vigorous, but has a similar smothering habit: "may also be grown without support along the ground to cover old stumps or rock piles." Also, "its variegation may revert to green cutleaf foliage on some stems with age, and these stems should be immediately pruned away before they take over."

Reference(s):

- US Forest Service (0). Ampelopsis brevipedunculata_Weed of the week.
- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.
- Missouri Botanical Garden (2017). Ampelopsis brevipedunculata var. maximowiczii 'Elegans' - Plant Finder.
- Rhodus, T. (0). Ampelopsis brevipedunculata. In: OSU Pocket Gardener.

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8. Is the plant noted as promoting fire and/or changing fire regimes?

- Answer: **No**, which contributes **0** points to the total PRE score.
- The *screener* has a **Low** confidence in this answer based on the available literature.

Answer / Justification:

"It is unclear how historical fire regimes might influence porcelainberry or how porcelainberry populations may influence fuel characteristics and fire regimes in native plant communities"

Reference(s):

- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.

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9. Is the plant a health risk to humans or animals/fish? Has the species been noted as impacting grazing systems?

- Answer: **No**, which contributes **0** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

No reports of health risks to humans or animals.

Reference(s):

- [Anonymous] .

10. Does the plant produce impenetrable thickets, blocking or slowing movement of animals, livestock, or humans?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Scrambling over shrubs, trees, and other plants in a dense mat could create impenetrable thickets and block movement.

Reference(s):

- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.
- US Forest Service (0). Ampelopsis brevipedunculata_Weed of the week.

Reproductive Strategies (Questions 11 - 17)

11. Does this species (or cultivar or variety) reproduce and spread vegetatively?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

"It can also spread vegetatively by resprouting from roots, especially in response to cutting above-ground vines." "Porcelainberry reproduces vegetatively and from seed."

Reference(s):

- Minnesota Department of Agriculture (2017). Porcelain Berry.
- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.

12. If naturally detached fragments from this plant are capable of producing new plants, is this a common method of reproduction for the plant?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

"Reviews indicate that porcelainberry regenerates from root segments"

Reference(s):

- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.

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13. Does the species (or cultivar or variety) commonly produce viable seed?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Dirr says the cultivar 'Elegans' "supposedly comes true-to-type from seed." Gardeners on Dave's Garden forum: "It seeds prolifically", "It's berries readily re-seed, and before you know it, you'll have seedlings springing up all over the place, and going into the neighbors yard, and going into wild areas", "The only seedlings are 6-10 plants annually right near the base of the trunk", "It readily sets seed", "the one in the sun reseeds PROFUSELY."

Reference(s):

- Dirr, M. A. (1998). Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses.
- Dave's Garden (2016). Variegated Porcelain Berry Vine Ampelopsis glandulosa var. brevipedunculata 'Elegans'.

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14. Does this plant produce copious viable seeds each year (> 1000)?

Answer / Justification:

Seed production for some plantings of 'Elegans' is described as abundant, prolific, profuse (see Dave's Garden quotes above). It seems likely that a large established plant could produce >1000 seeds, but there are no numerical estimates available in the literature. For the species, each berry contains 1-4 seeds.

Reference(s):

- [Anonymous] .

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15. Is there significant germination (>25%) of seeds the next growing season, with no requirement of an infrequent environmental condition for seeds to germinate (i.e. fire) or long dormancy period?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

"Available evidence indicates that porcelainberry seed has a high germination rate, and readily germinates following soil disturbance. Germination of porcelainberry seed may be enhanced by removing the fruit pulp or by scarifying seed through digestion. Moist chilling may also stimulate germination of porcelainberry seed." No information was available for 'Elegans', but seedlings have been documented by gardeners. The confidence is medium, since we are relying primarily on information for the species.

Reference(s):

- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.
- Armitage, A. M. (2011). Armitage's Vines and Climbers: A Gardener's Guide to the Best Vertical Plants.
- Emerine, S. (2011). The Biology and Control of Porcelain Berry (Ampelopsis brevipedunculata)..

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16. Does this plant produce viable seed within the first three years (for an herbaceous species) to five years (for a woody species) after germination?

Reference(s):

- [Anonymous] .

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17. Does this plant continuously produce seed for >3 months each year or does seed production occur more than once a year?

- Answer: **No**, which contributes **0** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Ampelopsis brevipedunculata 'Elegans' flowers continuously in the summer, but not likely to be >3 months in Illinois, with berries ripening in the fall.

Reference(s):

- Missouri Botanical Garden (2017). Ampelopsis brevipedunculata var. maximowiczii 'Elegans' - Plant Finder.
- Rhodus, T. (0). Ampelopsis brevipedunculata. In: OSU Pocket Gardener.

Dispersal (Questions 18 - 20)

18. Are the plant’s propagules frequently dispersed long distance (>100 m) by mammals or birds or via domestic animals?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

"This vine readily spreads by seed; birds and other animals are attracted by the fruit and will spread it long distances." "Porcelainberry seed is dispersed by birds and other small animals. White-tailed deer eat its fruit and may also disperse porcelainberry seed."

Reference(s):

- Minnesota Department of Agriculture (2017). Porcelain Berry.
- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.

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19. Are the plant's propagules frequently dispersed long distance (>100 m) by wind or water?

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

"Porcelainberry fruits float, and it has been speculated that its seed may be dispersed by water, which may provide another mechanism for long-range dispersal."

Reference(s):

- Waggy, M. A. (2009). Ampelopsis brevipedunculata. In: Fire Effects Information System.

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20. Are the plant's propagules frequently dispersed via contaminated seed (agriculture or wildflower packets), equipment, vehicles, boats or clothing/shoes?

- Answer: **No**, which contributes **0** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

There are not reports of accidental dispersal by humans.

Reference(s):

- [Anonymous] .

Total PRE Score

PRE Score: 18 -- Reject (high risk of invasiveness)
Confidence: 60 / 100
Questions answered: 18 of 20 -- Valid (80% or more questions answered)

PRE Score Legend

The PRE Score is calculated by adding the point totals for each (answered) question.
< 13 : accept (low risk of invasiveness)
13 - 15 : evaluate further
> 15 : reject (high risk of invasiveness)

Questions Answered Legend

It is important to answer at least 16 questions to consider a PRE Score as "valid".
>= 16 : valid (80% or more questions answered)
<= 15 : invalid (not enough questions answered)

Organization Ownership and Content Privacy

Organization: 2017 Farm Bill PRE Project
Content Privacy: Public

Evaluation Reviewers

The PRE approach is to base decisions on science and make decisions by consensus of diverse horticultural stakeholders. The literature review and process of answering PRE's questions are based on science; the decisions of which plants to prioritize are based on consensus. To ensure this process is in place and that PRE is collaborative, volunteer stakeholders are recruited from each region to review evaluations. The following experts in their profession (plant science, conservation, or horticultural trade) have participated as volunteer PRE reviewers for this evaluation:

- Richard Hawke October 30, 2017

This evaluation has a total of 1 reviewer(s).

Evaluation Issues

The following section lists all public issues for this evaluation. Issues provide a way for stakeholder reviewers to communicate any concerns or suggestions they might have with the plant or evaluation. Please email PlantRight@suscon.org if additional action is required to resolve open issues.

There are currently no issues associated with this evaluation.

About PRE and this Plant Evaluation Report

The PlantRight Plant Risk Evaluator -- PRE is an online database and platform enabling those involved in non-native, terrestrial plant production to know before they grow if a plant poses a regional invasive risk. This tool offers many benefits, and we encourage you to visit the PRE website (https://pre.ice.ucdavis.edu) for more information.

If you are a nursery trade association, or involved in the research, development or distribution of horticultural plants we invite you to join the PRE community. If you are a plant scientist, affiliated with a horticultural college or botanic garden, and would like to learn more about becoming a PRE Screener, please drop us an email, PlantRight@suscon.org, requesting a PRE Account.

PRE beta funding is provided by Sustainable Conservation (http://www.suscon.org/) and a USDA Farm Bill grant.