

**LOWER HUDSON PARTNERSHIP FOR REGIONAL INVASIVE SPECIES MANAGEMENT****BEST MANAGEMENT PRACTICES****Chocolate vine**  
Invasive Species**Chocolate vine** ( Five-leaf akebia )

*Akebia quinata* (Thunb. ex Houtt.) Decne. (*Rajania quinata* Thunb. ex Houtt., *Akebia micrantha* Nakai., *Akebia quinata* f. *albiflora* Y.N.Lee )

**REGIONAL STATUS**

Chocolate vine is Tier 2- Emerging in the Lower Hudson PRISM Region. This species is just beginning to become established in localized parts of the Lower Hudson PRISM region.

Chocolate vine is not regulated by the state of New York.

Lower Hudson PRISM recommends: Eradication, spread prevention and containment are the management recommendations for this species along with survey work and education and outreach efforts to increase spread prevention and detection rates.

**INVASIVENESS**

New York State has assessed this species' invasiveness as M - Moderate

**IMPACTS OF THIS SPECIES**

A highly aggressive vine native to eastern Asia, chocolate vine spreads quickly by vegetative means, smothering trees and preventing germination of understory plants due to dense shading. A single vine is capable of growing 20-40 feet in one year. <sup>(5)</sup>

**BACKGROUND INFORMATION****History of Introduction**

Brought to the United States through the horticultural trade, this hardy vine was praised by the gardening industry for its ability to rapidly provide cover. The species is now listed as invasive in numerous European countries, New Zealand, and is reportedly established in at least 21 states. <sup>(1)</sup>

**Description**

- Chocolate vine is a member of the Lardizabala family (*Lardizabalaceae*).

- Chocolate vine is a climbing, semi-deciduous woody vine. The stems are smooth and grayish brown, with small lenticels. Clusters of fragrant mauve flowers — for which the plant gets its common name—appear in late spring.

- **Leaves:**

- Leaves are palmately compound, oppositely arranged, with smooth margins and up to five oval leaflets. Each leaflet is notched at the tip and is approximately 1.5-3 inches long. <sup>(2)</sup>

- **Flowers:**

- Large, hanging clusters of aromatic mauve to purple to red flowers appear in late spring to early summer. Clusters are comprised of two to five flowers and are two five inches across. <sup>(3)</sup>

- **Fruit/Seed:**

- Fruit is rarely produced but is conspicuous when present. Long, purple, sausage-shaped pods up to four inches long split open to reveal white flesh containing several small, shiny brown to black seeds. <sup>(3)</sup>

**Key identifying characteristics:** A member of the relatively small family Lardizabalaceae, not much looks like chocolate vine in the Hudson Valley landscape, especially once the species begins to bloom. A good identifying characteristic are the vine’s showy flowers which, although often concealed by the plant’s dense foliage, are conspicuous and unusual. If confusion occurs upon examining a non-flowering plant, examine the leaflets for a notch at their otherwise rounded tip— another good identifying characteristic of this invasive. <sup>(4)</sup>

**Reproduction and Spread**

- Fruiting in the chocolate vine’s introduced range is rare. The species spreads efficiently and primarily by vegetative means and intentional plantings. <sup>(5)</sup>
- **Vectors:** Birds, small mammals, horticultural trade.

**Habitat**

Although chocolate vine prefers moist, freely draining soil in full sun, it is partially shade tolerant and can adapt to a wide variety of soils. It most commonly colonizes disturbed, woodland edges and waste areas near homesites, but can become.

**Likelihood of naturalization:** Moderate. Chocolate vine has been reported as invasive in at least six states. Reports of this species establishing in areas not near intentional plantings are not numerous, but this species has likely been underreported.

**CONTROL INFORMATION**

**Biological Control**

There is currently no biological control option for this species.

**Manual or Mechanical Control**

Pulling / Digging Up: Pulling by hand as a control method is possible only if the population is small, and the plants are young and have not yet ascended into the canopy. Repeat pulling will be necessary to ensure all regrowth is managed. <sup>(1)</sup>

Mowing: Mowing, hand cutting or weed whipping is possible only if plants are young and the population small. Vines must be cut repeatedly until no regrowth occurs. This may take many years. <sup>(1)</sup>

Girdling: Not applicable

Prescribed Fire: No information available

Prescribed Grazing: No information available

Soil Tilling: Not advisable. Tilling may fragment roots and encourage re-sprouting and vigorous growth. <sup>(8)</sup>

Mulching: Mulching may be used effectively to suppress seedlings and prevent germination in populations managed manually, mechanically or chemically. Because fruiting and seedling production is rare in its introduced range, this technique may largely not be applicable <sup>(8)</sup>

Solarization: Not applicable

Hot Foam Spray: Not applicable

## **Chemical Control**

Foliar Spray: A 3.75% solution of glyphosate or 2.5% solution of triclopyr is best utilized as a foliar spray during spring and early summer. However, as many other plants are present at this time of year, a cut stump application of larger vines followed by careful spot treatments and hand pulling may be advisable. Always read and follow the instructions on herbicide labels. <sup>(6)</sup> Chocolate vine has thick, waxy leaves. Use of a surfactant should be considered when making foliar applications.

Cut Stump: Cut stump herbicide application is an effective way of managing chocolate vine, particularly later in the growing season once the plant begins translocating nutrients back to its root system. Cut stump treatment will likely reduce but not eliminate re-sprouting: all populations managed this way must be monitored and re-treated in the following season. <sup>(7)</sup>

Basal Bark: 20-25% solution of triclopyr applied July through September.

Hack-And-Squirt: No information available.

Stem Injection: Not applicable

Pre-Emergent Spray: Not applicable

The pesticide application rates and usage herein are recommendations based on research and interviews with land managers. When considering the use of pesticides, it is your responsibility

to fully understand the laws, regulations and best practices required to apply pesticides in a responsible manner. At times, the pest you seek to treat may not be listed on a pesticide label, requiring a 2(ee) exemption from NYSDEC. Always thoroughly read the label of any pesticide and consult the NYSDEC or a licensed pesticide applicator with questions.

## SUMMARY OF BEST MANAGEMENT PRACTICES

### **General management overview and recommendation:**

For small infestations of chocolate vine mechanical or manual removal will suffice. However, for larger populations, a combination of chemical, manual and mechanical management methods will be necessary to achieve control. In low-growing, sprawling infestations, pulling and foliar sprays will be appropriate. In densely twining, climbing populations, basal bark sprays, cut stump treatment and pulling treatments — to the extent possible— should all be employed <sup>(8)</sup>

### **Post treatment monitoring:**

Depending on the management method employed, controlled populations should be revisited throughout the growing season to monitor for re-sprouting, especially if mechanical methods such as cutting or pulling are used without herbicide application. Fortunately, chocolate vine does not often produce fruit. However, populations known to have set seed should be monitored every growing season to hand pull seedlings.

### **Disposal Methods:**

As chocolate vine can spread vegetatively, care needs to be taken when disposing of cuttings or pulled plants. For small amounts, bag debris and take off site. For larger infestations, where bagging is not feasible, create piles that are not in direct contact with soil. This can be done by piling on rocks or piling debris a tarp which in then left till the debris dries out, at which point the tarp can be removed.

## REFERENCES

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Prepared by: Molly Marquand.



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