

Seed collection protocol: Lianas of Virginia

Thank you for your interest in joining this project! Your collections will allow us to create a seed bank of invasive and native lianas (woody climbing vines) that will be used to study their germination and establishment under different environmental conditions. The goal of this research is to better understand how native and invasive lianas respond to changing environmental conditions and stressors, so we can understand where they will spread.

How to find seeds for collection:

The first step is to find lianas with ripe fruits and fully developed seeds. For this project, we are focusing on the following list of species, organized by the time when ripe fruits are expected, as well as the form of the fruit (as different fruits need to be processed differently):

	Fruit is a berry	Fruit is a fluffy seed head
Late summer	American honeysuckle (<i>Lonicera canadensis</i>) Vine honeysuckle (<i>Lonicera japonica</i>) Domestic/common grape (<i>Vitis vinifera</i>) Frost grape (<i>Vitis vulpina</i>) Porcelain berry (<i>Ampelopsis glandulosa</i>) Oriental bittersweet (<i>Celastrus orbiculatus</i>) American bittersweet (<i>Celastrus scandens</i>) American wisteria (<i>Wisteria frutescens</i>) Chinese wisteria (<i>Wisteria sinensis</i>)	
Fall	Virginia creeper (<i>Parthenocissus quinquefolia</i>) Common greenbrier (<i>Smilax rotundifolia</i>) China root (<i>Smilax china</i>)	Sweet autumn clematis (<i>Clematis terniflora</i>) Virgin's Bower (<i>Clematis virginiana</i>)
Winter	English ivy (<i>Hedera helix</i>)	

Bold text indicates that this vine is an introduced species

Ripe berries are generally dark in color, but size and color will vary. Once you have ripe fruit and have obtained permission to collect, it's time to make a collection!

How to collect seeds:

You will need:

- Pruners
- Ziploc or grocery bags to separate collections from different mother plants
- Safety equipment (first aid kit, helmet recommended if using a pole saw or pole pruners)

You may need:

- Pole pruners or a pole saw (if your lianas are high in the canopy of a tree)

iNaturalist observations are optional, but make collecting the required information much easier for you!

Our iNaturalist project: [Seed collection: Lianas of Virginia · iNaturalist](https://www.inaturalist.org/projects/seed-collection-lianas-of-virginia)

(plaintext: <https://www.inaturalist.org/projects/seed-collection-lianas-of-virginia>) You must join this project for your observations to appear there. When adding an observation, please make sure the location is either marked "public" or mark this project as "trusted" (so that private coordinates can be shared with the project organizers). Photos should ideally include leaves (including the underside of the leaf), leaf arrangement, and fruit/flowers so that we can confirm identifications.

- Collect fruit from a single plant at a time.
- **Please do not combine seeds from different plants, even if they are all the same species!** Separate seeds from different mother plants into separate envelopes.
 - Each individual envelope must be labelled (print [the seed collection label](#) and fill it out, or fill out our online form)

How to label a collection:

All of the information below is in [seed collector label.docx](#). We recommend printing this label and filling it out for convenience, but you can also just write the information on each envelope. For each collection from each plant, write down:

- Your name and email address/phone number (whatever is preferred) of the collector (in case we need to get in touch)
- When the collection was made
- What species is being collected in this envelope
- Where the collection was made (include GPS coordinates by dropping a pin with your phone's mapping app or by taking an observation of the plant on iNaturalist)
- Identification of mother plant (species) with a photograph. Try to include leaves, leaf arrangement, and fruit/flowers in the photos if possible so we can confirm identification. Take one photo of the plant in its general context, or add a note on that on your label (is the vine on a roadside? Is the vine climbing a tree?)

How to prepare seeds for delivery:

The steps here will vary based on the type of fruit you have collected. However, the end goal is the same: separate the seeds from the fruit and dry them so that they will not rot in transit.

If the fruit is a fleshy berry:

- 1) Collect the berries when they are ripe (dark in color, not shriveled)
- 2) Mash the berries up
- 3) Rinse and strain out the flesh, leaving only the hard seed behind
- 4) Dry off the seeds on paper towels
- 5) Pack the dry seeds into envelopes

If the fruit is a fluffy seed head:

- 1) Trim off the seed heads
- 2) Pull off excess fluff
- 3) Pack dry seeds into envelopes

How to deliver seeds:

Seeds can be mailed to:

de Deurwaerder Lab
Cheatham Hall
310 West Campus Drive
Blacksburg, VA 24060

Mailers can be sent free of charge when using our prepaid UPS account (just send an email to seedbank@vt.edu to receive the account number!). When you provide this account number at a UPS store, it should automatically populate the address above (please verify the correct address before sending!)

Thank you so much for contributing to this project! Your collections will help us gain new information on the germination process and success rate of invasive lianas under different climactic conditions.

Please feel free to direct any questions to Catherine at seedbank@vt.edu