

## West Coast Elderberry Growers Workshop #1 Jan 13, 2021

### **General care during growing season:**

## Sambucus Canadensis (American Elderberry)

### **Fertilizing Recommendations:**

After initial site prep, do not apply nitrogen with planting. A light application can be applied 4-8 weeks after planting. Phosphorus and potassium applied in later years as determined by soil tests. **Boron and Sulphur and Manganese** levels are important to be within normal range (not low) to help with fruit set and bacterial resistance.

Foliar Feeding as an option

### **Irrigation:**

Canadensis Elderberries are not drought tolerant and require 1-2 inches of water per week for optimum growth and fruit development (could be more depending on soil type and moisture levels). The fruit ripens in the heat of summer, and adequate water must be available at that time to produce high quality, marketable fruit.

### **Pests:**

Birds and deer are the most common pest, rabbits too. **Spotted Winged Drosophila** (SWD) is a serious fruit fly pest of elderberry fruit, although thankfully not as common on the West Coast as in MidWest. The adult female can penetrate and lay eggs within sound elderberry fruit from first color through harvest. The feeding of the resulting larvae within the fruit leads to a rapid loss of fruit quality and crop loss. Growers should monitor for the presence of SWD with baited traps and through fruit sampling. Control measures include removal of infested fruit, immediate cooling and/or freezing of fruit upon harvest and a spray program targeting the adult fruit flies. More info available :

<https://ipm.missouri.edu/MEG/2015/7/Spotted-Wing-Drosophila-Monitoring-and-Management/>

<https://www.youtube.com/watch?v=LAmuAduGSAQ&fbclid=IwAR3EYY2Oh1t9xMNJwcEfT9VXpFHYiam7V2vzMX5IYIZkiq1gnuRr7sUCqSM>

Elderberry Borers are another (not very common) pest. If you see wilting tips on new growth could be this. Best way is to control habitat by removing old canes from field at end of growing season, cutting out canes where noticed.

Black aphids can be a problem, look at the base of very new shoots coming up from ground. Generally rubbing with hands, spraying with light neem oil or soap spray keeps in check.

### **Bacterial and viral concerns:**

Elderberry Rust, Leaf Spot diseases

To mitigate, improve airflow, determine whether bacterial or fungal, keep grasses between rows low, and remember that nutrient deficient plants will be more susceptible.

## **Pruning:**

**1st year (same year as planted):** No pruning. Pinch off flowers as they develop to encourage plant energy to focus on root system development.

### **2nd Year and beyond trimming:**

Cut by hand all canes wanting to be saved and used for future plantings (2 nodes per cutting, no thinner than a pencil).

### **In California or a longer growing season climate:**

Cut all the way down to the ground. If feasible, a bush hog mower can be used to **mow down to the ground**, but irrigation would need to be removed and might blow compost/mulch all over. Another method is to attach a blade to a weed wacker. Notes from a farm in MidWest: 7 acres took 2 guys with blades 2 days. 2 more days to gather the cuttings. Recommended to remove canes from field or put through chipper to minimize habitat for borers.

### **In Northern or short season climates:**

It's best to prune them back to 2 feet and remove the 2+ year old canes entirely. This will cause the plants to bloom and the berries to ripen two weeks earlier. This is being trialed by Northern growers in WI and Quebec to encourage earlier ripening. Total prune back helps with various diseases but these might not be an issue in Northern climates and earlier ripening time is critical.

### **If using 20 year landscaping cloth, even in more Southern regions:**

Pruning back to 1 foot might actually be necessary because if you're using cloth you will have a limited number of holes for the bushes to grow through and new primocanes won't necessarily come through. Alternatively, beginning in 2nd year, leave an alleyway between cloth for the hedge to have space. This will lead to more weeds but a thicker hedgerow will be developed.

Pruning seems to be more complicated in the more Northern regions.

# Sambucus Caerulea (Blue Elderberry)

## Fertilizing Recommendations:

Not much is known about fertilization needs for Caerulea. Thus far, it seems that if the ground is worked (deep rip) ahead of planting and lightly amended with compost they do not require fertilization throughout growing season. Whether foliar or other feeding would BENEFIT them more is not yet studied.

## Light:

Full sun to part shade (full sun for improved productivity)

## Soil:

- Prefers well drained
- –Elders will grow in a wide range, with Canadensis recommendations of a pH of 5.5-6.5.
- Cerulea appears to do well with soils in the slightly acidic range.
- Fertilization:
- Spring: Prior to bud break with 50 yds/cubic acre with a nitrogen.
- Fall/Early Winter: Low nitrogen fertilizer

## Irrigation:

Water is needed for establishing Caerulea in all locations.

### Apothebox, Willamette Valley, Oregon:

Year-round rainfall meant that trial caerulea did well even without irrigation. But for best results: Ensure even watering during establishment of first year elders as well as prior to and during fruit formation/ripening.

### California:

UC Davis study found that the farms in the hot, dry Central Valley that watered weekly had the best yield. Ranchers in South Salinas Valley near San Luis Obispo (also hot, dry) have noticed that elderberry trees really need adequate water during the *winter* in order to have fruit in the summer. In other words, if it's a dry winter it's important to irrigate then, not just wait until the hot summer to begin.

**Pests:** May be more pest/disease resistant than other varieties in native territory.

- Birds and deer are the most common pest, rabbits too.
- Elderberry Borer: Pruning (see UC Davis on CA restrictions)

- Eriophyid mites: Dormant oil.
- Spotted Wing Drosophila (SWD): Orchard management, pruning, traps vs insecticides.

**Bacterial and viral:** concerns are not yet studied but do seem to exist. If you are taking cuttings from wild plants be sure to watch them for a full year to see if they are susceptible to early leaf drop which might be a sign of virus.

- Verticillium wilt: Ask for the pathogen test for it when testing soil.

## Pruning:

Since *Caerulea* (Blue elders) grow into trees in the wild, for cultivating for ease of harvest, a pruning method similar to *Sambucus Nigra* (European elder) could be followed.

Pruning choices:

- None--leave as wild hedge/tree
- Coppicing--complete pruning down to the ground
- Selective pruning (leaving a few primal canes, keeps a bush shape)
- Primal/Central leader (forms a trunk)

### Kirsten in Oregon:

Coppicing in Northern areas seems to not leave enough time for flower/fruit formation on same year growth. So not recommended. Follow guidelines for European elderberry for primal leader pruning to form a trunk/small tree. OR selective pruning to keep manageable and still reachable.

### Sonja Brodt UC SAREP in California PRUNING Blue Elders INFO:

Check <https://ucanr.edu/sites/Elderberry/Growing/VELB/#range> to see if you're within the range of endangered species Valley Elderberry Longhorn Beetle (the floor and adjacent lower foothills of the Central Valley, from approximately Shasta County in the north to Fresno County in the south).

#### If you are INSIDE the protected range: (UC SAREP website info)

- Pruning or cutting of stems and plants: Elderberry stems larger than 1 inch in diameter may not be cut from the plant or removed from the site, and therefore plants with 1 inch stems or larger cannot be removed.
- Timing of trimming: Any required trimming (of stems less than 1 inch in diameter) should occur between November and February.
- Harvesting of flowers or berries is not restricted in any way. Due to restrictions on trimming and removing plants, producers wishing to grow blue elderberry are advised to limit planting of elderberries to within hedgerows, where they will become part of a permanent conservation

feature with no expectations of major pruning or tree removal required into the foreseeable future (unless the land has been entered into a Programmatic Safe Harbor Agreement. See <https://ucanr.edu/sites/Elderberry/Growing/VELB/#safe> for more info.

**If you are OUTSIDE protected range: Lucky you! Prune away!**

Intense pruning is really welcomed by Blue Elders and they will still flower/fruit the same year if not in a Northern climate. We have found that cutting all the way back to existing trunk or even mowing suckers to the ground around trees (coppicing), leaving only a handful of thicker branches results in vigorous growth with very large flower/berry clusters. They flower/ripen about a month later than trees that weren't pruned. In Oregon, massively pruned trees tend to not produce flowers/fruit until the following year.

## **Sambucus Nigra (European Elderberry)**

Probably most appropriate for the northern climates, the goldilocks effect--looking for a "just right" climate.

General growing guidelines for planting, feeding, watering, pests are similar to *Sambucus Canadensis* (American Elderberry). Where there's a significant difference is in PRUNING.

### **Pruning and Training**

- Cultivated more like a conventional orchard
- fruits on only second year wood
- Train to grow with single trunk
- Top the trunk on second year and encourage to branch out from there
- Goal of pruning *s. Nigra* is also about renewal.

## **Ecological Cultivation of Elderberry**

**Katie Fyhrie , head farmer UC SAREP elderberry study**

Benefits of using native plants in a hedgerow and sourcing your cuttings locally:

- Uniquely adapted to your environment and water/growing conditions so they are LESS INTENSIVE (less inputs like water and fertilizer will be needed)
- Variety of growing conditions from BC to Mexico, coast to High Sierra means **your cuttings should come from as close to home as possible.**
- **Sourcing cuttings locally/developing regional cultivars will help protect local disease resistant genes by not introducing genetics from farther away which could potentially weaken local elderberry genetics.**

### **General Hedgerow Installation**

- 1) Pick your site, control weeds, assess compaction
- 2) Prep your ground [usually this means disking and harrowing/rototilling, ideally mulch, maybe a deep rip, or maybe you skip the tillage and do a restoration-style planting]
- 3) Plant [when it makes most sense in your environment – in Mediterranean CA Fall is best]
- 4) Irrigate for first 3 dry seasons or so, control weeds and squirrels/gophers
- 5) Remove irrigation, control weeds as necessary

For support with hedgerows, check out your local NRCS chapter, Wild Farm Alliance, Hedgerows Unlimited (Sam Earnshaw's business, they do consultations and installation support).

More at next workshop on financial support for hedgerow installation!

## **Lessons from Nature and Native stewardship**

### **Elderberry likes water**

- Naturally prefer riparian forests
- Trees in drier hedgerows go dormant earlier
- Extra water may increase yield of nonirrigated trees
- Lessons
  - Remove irrigation carefully
  - Consider:
    - Occasional dry season irrigation (monthly?)
    - Supplementing winter water
    - Planting near a moisture source

## Elderberry likes fire

- Adapted to being burned regularly by Native stewards
- Lessons
  - Mimic fire by coppicing (or pollarding) and burning?
    - Idea credit: Cache Creek Conservancy Tending & Gathering Garden
  - Fire return interval -> coppicing frequency

## Reuniting Native people with land:

- CCC Tending & Gathering Garden
  - <https://cachecreekconservancy.org/tending-gathering-garden>
- Amah Mutsun Land Trust - Pie Ranch
  - <https://www.amahmutsunlandtrust.org/the-mutsun-gardens>
- Sogorea Te Land Trust - Planting Justice
  - <https://sogoreate-landtrust.org/>
- Esselen - Big Sur Adler Ranch
  - <https://www.esselentribe.org/>

# ELDERFLOWERS!

Elderflowers have a huge market, most likely over 99% of flowers used in the US are imported from Europe and Eastern Europe. **Approx 10lbs fresh=1lb dried.**

Hyper local market for fresh flowers--restaurants, ice cream shops, bars, breweries.

But the larger market is in dry, destemmed flowers. **Current market rate is about \$40/lb certified organic flowers.**

Benefits:

- Strong market
- Easy and cheap to transport
- Health/immune benefits of flowers are equal, if not more so than the berries

- Not as many worries about pests or birds or frozen storage space of berries

Challenges:

- Scaling up--how to mechanize the destemming process
- Drying space required
- Labor costs for destemming and sifting

**We'll do a future workshop solely on elderflowers--harvesting/processing/drying/selling**

## Online Resources:

### Helpful Growing Guides *Sambucus Canadensis* (American):

None of these focus specifically on West Coast Growing but they have excellent information.

University of Kentucky:

<https://www.uky.edu/ccd/sites/www.uky.edu.ccd/files/elderberry.pdf>

University of Vermont (especially useful for Northern regions):

<https://www.uvm.edu/extension/sustainableagriculture/elderberry-production-vermont>

University of Missouri:

<https://extension.missouri.edu/publications/af1017>

### Helpful Growing Guides *Sambucus Caerulea* (Blue):

**UC SAREP** (Sustainable Agriculture Research & Education Program):

UC Researchers have done an excellent job gathering as much information as is known about growing *Caerulea*. Check out all the tabs on growing, cost analysis, benefits of hedgerows, etc.

[ucanr.edu/sites/elderberry](https://ucanr.edu/sites/elderberry)

## Other Online Resources:

**Facebook Groups:** Search FB for these groups and request to join.

**Specifically for commercial growers:**

West Coast Elderberry Growers

Elderberry Growers Connect

New Elderberry Growers

**Facebook Group for hobbyists and enthusiasts:** Elderberry World

**For Research Articles on Elderberry:**

Carmel Berry Company

[Carmelberry.com/elderberry-research/](http://Carmelberry.com/elderberry-research/)

MidWest Elderberry Cooperative

<http://about.midwest-elderberry.coop/>

This is a wealth of information: PRO TIP: click on each of the tabs on the top banner and it will bring you to articles in that category.

**Other Presentations:**

MidWest Elderberry Coop:

<http://grow.midwest-elderberry.coop/presentations.html>

<http://grow.midwest-elderberry.coop/overview/2019-elderberry-productivit.pdf>