

# American Elderberry: Commercial Production Guide

► Progress in elderberry breeding and management research has opened new possibilities for Alabama farmers to grow this historically consumed wild plant as a commercial crop.

American elderberry (*Sambucus canadensis* or *Sambucus nigra* subsp. *canadensis*) is native to eastern North America, including all of Alabama, and has been a part of the regional diet for centuries. American elderberry is commonly found throughout Alabama on stream banks and field edges. It is closely related to the European elderberry (*Sambucus nigra*), currently the primary source for commercial elderberry products.

## Description

American elderberry is a deciduous, woody shrub measuring 5 to 12 feet tall and up to 10 feet wide in Alabama. The pinnately compound leaves have an opposite arrangement along the stems. Leaves commonly have 5 to 11 leaflets, which are serrated and oppositely arranged. Gray stems have noticeable lenticels (pores that allow for gas exchange) and soft, white pith that can be hollowed. American elderberry begins to flower in May in most of Alabama. Flowers are produced on current-season growth. Fruit ripens between July and September in drooping clusters. The unripe fruit is green, and the ripe fruit is purple black, with each ripe berry containing 3 to 5 seeds. Fruiting heads can contain both unripe and ripe fruit simultaneously. Elderberry produces root suckers and can form thickets.



Figure 1. American elderberry in flower



Figure 2. Flower buds



Figure 3. Leaf



Figure 4. Leaflet





Figure 5a. Elderflower



Figure 5b. Elderberries

## Look-Alikes

Elderflower may superficially resemble highly toxic plants in the carrot family, such as poison hemlock (*Conium maculatum*), water hemlock (*Cicuta maculata*), and southern water hemlock (*Cicuta mexicana*). Devil's

walking stick (*Aralia spinosa*) has leaves, flowers, and berries that resemble elderberries. Pokeweed (*Phytolacca americana*) berries are a similar color and can be found in the same habitat. Always obtain cuttings from a reputable source and positively identify elderberry before propagation and harvest.

Table 1. American Elderberry ( <i>Sambucus canadensis</i> ) Look-Alikes with Toxic Properties			
Plant	Native to Alabama	Found in Alabama	Description
Poison Hemlock ( <i>Conium maculatum</i> )	No	Yes	Highly toxic plant in the carrot (Apiaceae) family that can cause death when ingested. White, umbrella-shaped flowers may superficially resemble elderflower to a casual observer. Three to 10 feet tall.
Water Hemlock ( <i>Cicuta maculata</i> )	Yes	Yes	Highly toxic plant in the carrot (Apiaceae) family that can cause death when ingested. White, umbrella-shaped flowers may superficially resemble elderflower to a casual observer. Like elderberry, water hemlock has toothed, pinnately compound leaves with serrated leaflets. Three to 8 feet tall. Typically in wet areas.
Devil's Walking Stick ( <i>Aralia spinosa</i> )	Yes	Yes	Deciduous shrub that can grow to similar height and in the same habitat as elderberry. Large flower heads and purple berries resemble elderberries. Distinguish devil's walking stick by the prominent, sharp spines on stems and branches.
Pokeweed ( <i>Phytolacca americana</i> )	Yes	Yes	Deep purple berries may resemble elderberries. Pokeweed is herbaceous (no woody stems); has large, alternate leaves; and flowers on racemes (slender flower structure with flower stems coming off one central stem) rather than umbels. Do not eat berries. All parts of the plant are poisonous, though there are traditional ways of consuming young leaves after multiple boils. Only use poke medicinally with expert supervision.
Red Elderberry ( <i>Sambucus racemosa</i> )	No	No	Deciduous shrub closely related to American elderberry and resembles it in growth habitat and leaf shape. Fruits are bright red, rather than purple-black. Raw seeds are toxic, but berries can be consumed when cooked. Red elderberry is not native to Alabama, but is native to much of North America, as far south as North Georgia and elevated areas in East Tennessee.





**Figure 6.** Poison hemlock foliage



**Figure 7.** Poison hemlock flower heads



**Figure 8.** Water hemlock foliage



**Figure 9.** Water hemlock flower



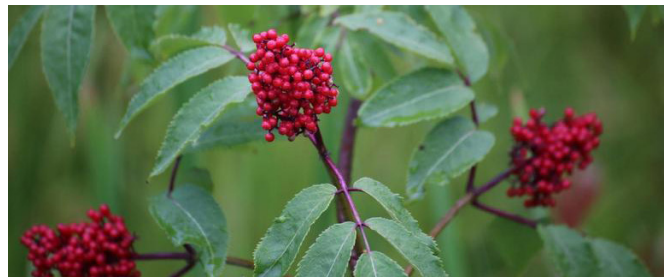
**Figure 10.** Devil's walking stick in bloom



**Figure 11.** Devil's walking stick fruit



**Figure 12.** Poke berries



**Figure 13.** Red elderberry (*Sambucus racemosa*)



## Uses and Safety

Renowned for its medicinal uses, elderberry has been traditionally used to address conditions like colds and flu. Some studies suggest antiviral properties and a notable reduction in respiratory symptoms. Be aware that parts of the elderberry plant can contain toxins called *cyanogenic glycosides*, which are also found in small amounts in foods such as almonds, sweet cherries, and cassava. Only consume products made from elderflower and fully ripe berries. Avoid ingesting leaves, stems, roots, and unripe berries. Juiced (deseeded) and gently heated berries from known cultivars are safest.

## Cultivars

Choose named cultivars for commercial production, as wild-type elderberries, while excellent for wildlife plantings, are less financially viable as a crop. Many older cultivars are from the northeast, but newer selections trialed in the lower midwest may better suit Alabama. More research is required, but Alabama growers might try cultivars selected in warm weather climates such as ‘Pocahontas’ and ‘Wyldeewood’, as well as industry standards such as ‘Ranch’ and ‘Bob Gordon’. Desirable traits in cultivars include overall yield, uniform ripening of berries within the plant and within a cyme (the flower head), resistance to lodging, and pest and disease resistance.

## Site Preparation and Planting

For successful elderberry cultivation, provide full sun and fertile, well-drained soil with a pH of 5.5 to 6.5, adding organic matter using cover crops or quality compost. New growers should buy unrooted, dormant cuttings from reliable suppliers and plant them directly into prepared field beds during late winter or early spring. It is also possible to purchase and plant in flats small, rooted cuttings that have already leafed out in late spring. Plant elderberries in rows 10 to 12 feet apart, with individual plants 2 to 4 feet apart within the row. Due to shallow roots, use drip tape and mulch for an adequate water supply. Consider landscape fabric for initial weed control, laying a roll on either side of the planting. Remove fabric at the end of the first season to allow plants to sucker from the roots (sprouts emerging away from the main stem but as part of the plant crown). Systemic herbicide applications may be inadvertently taken into the root system of the main plant through suckers.



Figure 14. Field-planted cutting leafing out

## Management: Fertilization, Irrigation, Pruning, and Pests

Apply 10 pounds of nitrogen per acre 1 to 2 months after planting, followed by 60 to 80 pounds annually for mature plants. Adjust other soil nutrient levels based on soil tests and foliar analysis for cane fruit. In the first summer, remove flowering heads to promote long-term vigor. Prune elderberries annually once established, preferably during the dormant season. Many commercial growers prune by mowing stems to the ground, starting at the end of the second or third season of growth. Removing mowed stems should reduce overwintering insects. While elderberries are relatively pest resistant, growers may encounter fungal and bacterial diseases, notably elderberry rust and bacterial leaf spot. Common insect pests include eriophyid mite (*Phyllocoptes* spp.), leaf-footed bug (*Leptoglossus zonatus*), armyworms (*Mythimna* spp.), and Japanese beetles (*Popillia japonica*). Spotted wing drosophila (*Drosophila suzukii*) infestations can cause problems in ripe berries left on the plant.

Table 2. Elderberry Planting Timeline				
Year	Season	Action	Action	Action
1	Winter	Soil test for pH and nutrient levels.		
1	Spring	Modify pH to 5.5 to 6.5 with lime and correct micronutrient deficiencies if needed.	Prepare planting site; allow a flush of weeds and control chemically or mechanically, then establish a cover crop.	Adjust field phosphorus level to 50 pounds/acre and potassium to 200 to 300 pounds/acre.
1	Summer	Raise organic matter with high-quality compost and high-biomass cover crops	Allow a flush of weeds and control chemically or mechanically, then establish a cover crop.	Pre-order dormant, hardwood cuttings for winter shipment.
1	Fall	Shape beds for planting and establish noncompetitive ground cover between rows. Lay drip tape and weed barrier (landscape fabric or biodegradable plastic, if desired).	Allow a flush of weeds and control chemically or mechanically.	
2	Winter	Plant dormant cuttings directly in prepared field beds.		
2	Spring	Apply 10 pounds of actual nitrogen, per acre, after growth begins.		
2	Summer	Remove flowering heads to promote long-term vigor.	Control weeds.	Scout for insect pests and diseases.
2	Fall	Do not prune the first year (other than dead and diseased wood).		

## Harvest and Processing

Expect full production to begin in years three to five. Elderflower and elderberry are currently harvested by hand by clipping off whole cymes once berries are fully colored. Harvest weekly, preferably early in the day for best quality, and process immediately or refrigerate temporarily. Destem berries, sanitize, and process (freeze, juice, or dehydrate). Growers may invest in destemming machines for efficiency and find that destemming is easier with frozen rather than fresh cymes. Challenges in elderberry production and processing include lack of mechanized options for harvest (high manual labor), expense of destemming equipment, knowledge of and adherence to food safety protocols, and storage needs.

## Marketing and Sales

Consider selling products to elderberry cooperatives, breweries, bakeries, herbalists, restaurants, and farmers markets. Products include wine, juice, concentrate, extract, syrup, jelly, jam, baked goods, and beverages. Adhere to state and county food safety laws when processing elderberries. Contact your county health department if you will be selling frozen or processed berries to make sure that you are following local regulations.

## Conclusion

Elderberry cultivation provides an exciting opportunity for Alabama farmers to contribute to developing this promising yet underexplored crop. While more trials are needed to determine best practices in the Deep South, American elderberry shows potential for growth as a commercial specialty crop. It is already a great choice for backyard growers.

## For More Information

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