

**Plant Propagation Protocol for *Ambrosia psilostachya***

ESRM 412 – Native Plant Production

URL: none



Photo source: Burke herbarium(left), seedidguide(right)

<b>TAXONOMY</b>	
<b>Plant Family</b>	
Scientific Name	Asteraceae
Common Name	Aster
<b>Species Scientific Name</b>	
Scientific Name	<i>Ambrosia psilostachya</i> DC.
Varieties	<i>Ambrosia psilostachya</i> var. <i>psilostachya</i> <i>Ambrosia psilostachya</i> var. <i>californica</i> <i>Ambrosia psilostachya</i> var. <i>lindeheimerana</i>
Sub-species	
Cultivar	
Common Synonym(s)	<i>Ambrosia californica</i> , <i>Ambrosia coronopifolia</i> , <i>Ambrosia cumanensis</i> , <i>Ambrosia psilostachya</i> var. <i>californica</i> , <i>Ambrosia psilostachya</i> var. <i>coronopifolia</i> , <i>Ambrosia psilostachya</i> var. <i>lindeheimeriana</i> , <i>Ambrosia rugelii</i>
Common Name(s)	Cuman ragweed common ragweed perennial ragweed western ragweed <sup>5</sup>
Species Code (as per USDA Plants database)	AMPS <sup>5</sup>
<b>GENERAL INFORMATION</b>	
Geographical range	AZ CA CO CT ID IL IA KS LA ME MA MI MO MN MT NE NH NC ND OH

	OK OR SC SD TX UT VT WA WI WY AB BC MB NS ON PE PQ SK MEXICO <sup>2</sup> See map above
Ecological distribution	Cuman ragweed is widespread across much of North America, including the United States, Canada, and northern Mexico. It has also naturalized in parts of Europe, Asia, Australia, and South America. This species thrives in a variety of habitats, including grasslands, savannas, woodlands, riparian areas, and disturbed sites like roadsides and dry fields. It typically grows in dry, sandy soils and is known for its ability to spread through both seeds and rhizomes.
Climate and elevation range	Generally ranging from 850 to 7,400 feet. It's adapted to warm seasons and can tolerate a wide range of soil types, including loams, with a preference for sandy soils in arid conditions.
Local habitat and abundance	Thrives in disturbed areas as well as dry prairies, blowouts, washouts, sandy woods, and hills, best in loam. It can be highly competitive and invasive to native plant species.
Plant strategy type / successional stage	Weedy; mid to late successional species
Plant characteristics	Duration: Perennial Habit: Herb Root Type: Fibrous Leaf Arrangement: Alternate Leaf Shape: Lanceolate Leaf Pubescence: Hirsute Leaf Margin: Entire Leaf Base: Cuneate, Truncate Breeding System: Flowers Unisexual, Monoecious Inflorescence: Spike Size Notes: Up to about 3 feet tall. Fruit: Fruit is a cypsela (pl. cypselae). Though technically incorrect, the fruit is often referred to as an achene. <sup>9</sup>
<b>PROPAGATION DETAILS: FROM SEED</b>	
Ecotype	
Propagation Goal	Plants, seeds
Propagation Method	both
Product Type	- Container (plug) – Often used for controlled propagation in nurseries.

	<ul style="list-style-type: none"> <li>- Bareroot (field grown) – Suitable for large-scale restoration or planting projects.</li> <li>- Propagules (seeds, cuttings, etc.) – Since this species spreads via rhizomes and seeds, propagules are a common method for natural regeneration.</li> </ul>
Stock Type	Container-grown stock, bareroot stock, rhizome divisions, seed stock
Time to Grow	~one growing season
Target Specifications	<ul style="list-style-type: none"> <li>- Height: It reaches 30–70 cm, though it can grow taller in favorable conditions.</li> <li>- Growth Habit: Rhizomatous perennial forb with ascending to erect stems, often densely pubescent.</li> <li>- Leaf Characteristics: Pinnately lobed leaves, 3–10 cm long, with a grayish appearance due to fine hairs.</li> <li>- Root System: Extensive rhizome network, allowing for rapid spread and colonization.</li> <li>- Flowering Period: Blooms August–October, producing inconspicuous male flowers in spikelike racemes.</li> <li>- Ecological Adaptations: Thrives in dry prairies, sandy soil, and disturbed areas, making it a resilient species.</li> </ul>
Propagule Collection Instructions	<ul style="list-style-type: none"> <li>- Seed Collection: Seeds mature in late summer to early fall. They are borne along a central stem and become chaffy and bristly with maturity. Collect seeds when they are fully developed but before they disperse naturally.</li> <li>- Rhizome Collection: Since this species spreads aggressively via rhizomes, vegetative propagules can be collected by carefully digging up sections of the underground stems. This is best done in early spring or fall when the plant is actively growing.</li> <li>- Storage &amp; Handling: Seeds should be stored in a cool, dry place to maintain viability. Rhizomes should be kept moist until planting to prevent desiccation.</li> </ul>
Propagule Processing/Propagule Characteristics	<ul style="list-style-type: none"> <li>- Seed Density: Specific seed density values are not widely documented, but similar species in the Ambrosia genus often range from 100,000 to 250,000 seeds per pound.</li> <li>- Seed Longevity: Seeds can remain viable for multiple years under proper storage conditions, though germination rates may decline over time.</li> <li>- Seed Type: The fruit is an achene, typically with a short beak and small blunt tubercles.</li> </ul>

	<ul style="list-style-type: none"> <li>- Storage Conditions: Seeds should be kept dry and cool to maintain viability.</li> </ul>
Pre-Planting Propagule Treatments	<ul style="list-style-type: none"> <li>- Cleaning: Seeds are often cleaned to remove debris and chaff, ensuring better germination rates.</li> <li>- Storage: Dry storage in a cool environment helps maintain seed viability. Refrigeration may be beneficial for long-term storage.</li> <li>- Dormancy Treatments: Some sources suggest cold stratification for improved germination. Seeds may be soaked in water for 24 hours before undergoing cold stratification for 2 months.</li> <li>- Scarification: While not always necessary, mechanical or chemical scarification can help break seed coat dormancy in some Ambrosia species.</li> </ul>
Growing Area Preparation / Annual Practices for Perennial Crops	<ul style="list-style-type: none"> <li>- Growing Media: Prefers well-draining loamy soil with moderate fertility. It can tolerate sandy soils but thrives best in loam.</li> <li>- Container Type &amp; Size: If grown in containers, deep pots or plug trays work well to accommodate its rhizomatous growth.</li> <li>- Sunlight Requirements: Requires full sun for optimal growth.</li> <li>- Dormancy Considerations: This species undergoes winter dormancy, so reducing watering during colder months can help maintain plant health.</li> </ul>
Establishment Phase Details	<ul style="list-style-type: none"> <li>- Seed Preparation: Seeds may benefit from cold stratification to improve germination rates.</li> <li>- Sowing Depth: Seeds should be planted shallowly, typically at a depth of 1–2 mm, in well-draining soil.</li> <li>- Moisture Management: Consistent moisture is crucial for germination, but avoid waterlogging.</li> <li>- Light Requirements: Prefers full sun for optimal growth.</li> <li>- Soil Conditions: Thrives in loamy or sandy soils with moderate fertility.<sup>9</sup></li> </ul>
Length of Establishment Phase	Seeds typically germinate within 1–3 weeks, depending on environmental conditions.
Active Growth Phase	<ul style="list-style-type: none"> <li>- Light Requirements: Prefers full sun for optimal growth.</li> <li>- Watering Practices: Moderate watering is needed, allowing the soil to dry between waterings to prevent root rot.</li> </ul>

	<ul style="list-style-type: none"> <li>- Soil Conditions: Thrives in loamy or sandy soils, with moderate fertility.</li> <li>- Nutrient Management: Generally does not require frequent fertilization, but a balanced fertilizer can be applied sparingly during the growing season.</li> <li>- Growth Habit: Spreads aggressively via rhizomes, forming dense colonies.</li> <li>- Weed Control: Regular monitoring is needed, as it can compete with other plants in restoration settings.</li> <li>- Seasonal Considerations: Growth peaks in spring and summer, with flowering occurring August–October.<sup>8</sup></li> </ul>
Length of Active Growth Phase	Typically lasts from spring through late summer, with peak growth occurring in warm months. It spreads aggressively via rhizomes, forming dense colonies, and flowers between August and October. Growth slows as temperatures drop, and the plant enters dormancy in late fall.
Hardening Phase	<ul style="list-style-type: none"> <li>- Gradual Reduction in Watering: As temperatures drop, reduce watering to encourage root hardening and prevent excess moisture that could lead to rot.</li> <li>- Nutrient Management: Avoid high-nitrogen fertilizers late in the season, as they can promote unnecessary vegetative growth instead of winter readiness.</li> <li>- Mulching: Applying a light mulch layer can help insulate the root system, especially in colder climates.</li> <li>- Rhizome Protection: Since this species spreads via rhizomes, ensuring soil stability and preventing erosion can support overwintering success.</li> <li>- Temperature Adaptation: Plants naturally slow growth as daylight decreases, signaling dormancy. No additional intervention is needed beyond ensuring proper soil conditions.<sup>7</sup></li> </ul>
Length of Hardening Phase	Typically lasts several weeks to a few months, depending on environmental conditions. As temperatures drop in late summer to early fall, the plant gradually reduces active growth and prepares for winter dormancy. This phase continues until the first hard frost, when the plant enters full dormancy.
Harvesting, Storage and Shipping	<ul style="list-style-type: none"> <li>- Harvesting: Seedlings are typically ready for harvest after one growing season. They should be carefully lifted from the soil to preserve the root system, especially the rhizomes.</li> <li>- Storage: If seedlings are not immediately planted, they should be stored in a cool, moist environment to</li> </ul>

	<p>prevent desiccation. Bareroot seedlings can be kept in refrigerated conditions to maintain viability.</p> <ul style="list-style-type: none"> <li>- Shipping: Seedlings should be packed with moisture-retaining materials to prevent drying during transport. Container-grown plants are often shipped in trays to minimize damage.</li> </ul>
Length of Storage	<ul style="list-style-type: none"> <li>- Container-grown seedlings can be stored for several weeks to a few months, provided they receive adequate moisture and light.<sup>3</sup></li> </ul>
Guidelines for Outplanting / Performance on Typical Sites	<ul style="list-style-type: none"> <li>- Percent Survival: This species is highly adaptable and typically has high survival rates in disturbed areas, prairies, and sandy soils.</li> <li>- Height Growth: Plants can reach 30–70 cm in height, with variations depending on soil fertility and moisture availability.</li> <li>- Diameter Growth: Since it spreads via rhizomes, lateral expansion is significant, forming dense colonies over time.</li> <li>- Elapsed Time Before Flowering: Flowering usually occurs within the first growing season, with peak bloom from August to October.<sup>4</sup></li> </ul>
Other Comments	<p>Historically, some Indigenous groups used it for medicinal purposes, including teas for swelling and digestive issues.</p>

**INFORMATION SOURCES**

References	<ol style="list-style-type: none"> <li>1. “<i>Ambrosia Psilostachya</i> (Perennial Ragweed).” <i>CABI Compendium</i>, 22 Aug. 2022, <a href="https://doi.org/10.1079/cabicompendium.469">https://doi.org/10.1079/cabicompendium.469</a></li> <li>2. Accessed 7 May 2025.</li> <li>2. “<i>Ambrosia Psilostachya</i>.” <i>Usda.gov</i>, 2017, <a href="http://www.fs.usda.gov/database/feis/plants/forb/ambpsi/all.html">www.fs.usda.gov/database/feis/plants/forb/ambpsi/all.html</a>. Accessed 7 May 2025.</li> <li>3. “Lady Bird Johnson Wildflower Center - the University of Texas at Austin.” <i>Wildflower.org</i>, 2019, <a href="http://www.wildflower.org/plants/result.php?id_plant=AMPS">www.wildflower.org/plants/result.php?id_plant=AMPS</a>. Accessed 7 May 2025.</li> <li>4. “Search Taxonomy GRIN-Global.” <i>Npgsweb.ars-Grin.gov</i>, <a href="http://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch">npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch</a>.</li> <li>5. “USDA Plants Database.” <i>Usda.gov</i>, 2025, <a href="http://plants.usda.gov/plant-profile/AMPS/related-links">plants.usda.gov/plant-profile/AMPS/related-links</a>. Accessed 7 May 2025.</li> </ol>
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	<p>6. Bassett, I. John, and Clifford W. Crompton. "THE BIOLOGY OF CANADIAN WEEDS.: 11. <i>Ambrosia artemisiifolia</i> L. and <i>A. psilostachya</i> DC." <i>Canadian Journal of Plant Science</i> 55.2 (1975): 463-476.</p> <p>7. Burke, Herbarium. "Ambrosia psilostachya - Burke Herbarium Image Collection." <i>Burkeherbarium.org</i>, 2015, <a href="http://www.burkeherbarium.org/imagecollection/taxon.php?Taxon=Ambrosia%20psilostachya">www.burkeherbarium.org/imagecollection/taxon.php?Taxon=Ambrosia%20psilostachya</a>. Accessed 7 May 2025.</p> <p>8. Burke, Herbarium. "CPNWH Search Results." <i>Pnwherbaria.org</i>, 2018, <a href="http://www.pnwherbaria.org/data/results.php?DisplayAs=WebPage&amp;ExcludeCultivated=Y&amp;GroupBy=ungrouped&amp;SortBy=Year&amp;SortOrder=DESC&amp;SearchAllHerbaria=Y&amp;QueryCount=1&amp;IncludeSynonyms1=Y&amp;Genus1=Ambrosia&amp;Species1=psilostachya&amp;Zoom=4&amp;Lat=55&amp;Lng=-135&amp;PolygonCount=0">www.pnwherbaria.org/data/results.php?DisplayAs=WebPage&amp;ExcludeCultivated=Y&amp;GroupBy=ungrouped&amp;SortBy=Year&amp;SortOrder=DESC&amp;SearchAllHerbaria=Y&amp;QueryCount=1&amp;IncludeSynonyms1=Y&amp;Genus1=Ambrosia&amp;Species1=psilostachya&amp;Zoom=4&amp;Lat=55&amp;Lng=-135&amp;PolygonCount=0</a>. Accessed 7 May 2025.</p> <p>9. Mabry, Tom J., et al. "The structure of <i>ambrosiol</i>. A new sesquiterpene lactone from <i>Ambrosia psilostachya</i>." <i>The Journal of Organic Chemistry</i> 31.3 (1966): 681-684.</p>
Other Sources Consulted	<p>10. "Ambrosia Psilostachya Page." <i>Missouriplants.com</i>, 2019, <a href="http://www.missouriplants.com/Ambrosia_psilostachya_page.html">www.missouriplants.com/Ambrosia_psilostachya_page.html</a>. Accessed 7 May 2025.</p> <p>11. "Plants of Texas Rangelands» Western Ragweed." <i>Tamu.edu</i>, 2025, <a href="http://rangeplants.tamu.edu/plant/western-ragweed/">rangeplants.tamu.edu/plant/western-ragweed/</a>. Accessed 7 May 2025.</p> <p>12. University, Utah State. "Western Ragweed." <i>Extension.usu.edu</i>, <a href="http://extension.usu.edu/rangeplants/forbs-herbaceous/western-ragweed">extension.usu.edu/rangeplants/forbs-herbaceous/western-ragweed</a>.</p>
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