




Plant Propagation Protocol for [Insert Species]

ESRM 412 – Native Plant Production

URL: [https://courses.washington.edu/esrm412/protocols/\[year\]/\[USDA Species Code.pdf\]](https://courses.washington.edu/esrm412/protocols/[year]/[USDA Species Code.pdf])

TAXONOMY	
Plant Family	
Scientific Name	Solanaceae
Common Name	Nightshade
Species Scientific Name	
Scientific Name	<i>Physalis pubescens</i> Linnaeus
Varieties (Native to PNW)	<ul style="list-style-type: none"> • <i>Physalis pubescens</i> L. var. <i>integrifolia</i> (Dunal) Waterf. - husk tomato • <i>Physalis pubesce</i>
Sub-species	<ul style="list-style-type: none"> • <i>Physalis pubescens</i> L. var. <i>integrifolia</i> (Dunal) Waterf. - husk tomato • <i>Physalis pubescens</i> L. var. <i>pubescens</i> – husk tomato
Common Synonym(s)	<ul style="list-style-type: none"> • <i>Physalis pruinosa</i> auct. non L. • <i>Physalis barbadensis</i> Jacq. • <i>Physalis floridana</i> Rydb.
Common Name(s)	<ul style="list-style-type: none"> • Husk tomato • Downy ground cherry • Ground Cherry • Muyaca • Capulí • Low ground cherry • Hairy groundcherry
Species Code (as per USDA Plants database)	PHPUI
GENERAL INFORMATION	

Geographical range	
Ecological distribution	A cultivated plant that thrives under the care of humans, the downy ground cherry grows in disturbed, open, sandy soil, open woods, and sand dunes.
Climate and elevation range	Warm mild climates with moderate humidity and temperature. USDA zones 4-8
Local habitat and abundance	Found in disturbed man-made areas such as roadsides, fields, or edges of woodlands.
Plant strategy type / successional stage	Weed-like, opportunistic, pest and disease resistant.
Plant characteristics	<p>Forb with downy hairs on leaves and stems. A cultivated plant that thrives under the care of humans, the downy ground cherry grWhite or yellow flowers with 5 dark spots around the center, lines coming out of spots reaching to points on the tips of the flower. Developed fruit is wrapped in the sepals of the flower.</p> <div style="display: flex; justify-content: space-around;">   </div>

PROPAGATION DETAILS

Ecotype	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	2" Soil blocks in tray with drainage

Time to Grow	<3 weeks
Target Specifications	second set of true leaves are emerging
Propagule Collection Instructions	Blend ripe fruits on pulse setting with extra water. Viable seeds will sink and waste material can be poured off the top. Continue to rinse and blend more if needed, pouring debris out the top. Use a fine strainer/filter to separate seeds from clean water. Gently blot dry and allow to dry in the sun on a plate/sheet pan, shaking the plate periodically as to not allow moisture to stick. Dry for at least one week.
Propagule Processing/Propagule Characteristics	Each fruit contains 150-260 seeds. Seeds can last up to 6 years.
Pre-Planting Propagule Treatments	Store seeds in cool, dry place.
Growing Area Preparation / Annual Practices for Perennial Crops	Prepare thick rich soil by hydrating media until it reaches a thick batter-like consistency. Use a 2" soil blocker to deposit blocks into draining trays. Ideal setting is a greenhouse. Shelves with grow lights will work too. Seed 1 per soil block and cover with more media.
Establishment Phase Details	Hust tomatoes love lots of sunlight. Greenhouse propagation is best when days have lengthened. Water daily on mist setting to full saturation.
Length of Establishment Phase	~1 week
Active Growth Phase	Full/near-full sun. Water when surface of soil begins to dry.
Hardening Phase	Ground cherries can be transplanted in their active growth stage, but still need to be hardened to the outdoors. Bring trays outside for increasing periods of time until they do fine for a full day outside. You will have needed to time seeding of these plants so it is warm enough outside by the time they need to be hardened. Hardening should be done at/near the outplanting site so the seedlings get used to the right conditions.
Length of Hardening Phase	2-7 days
Harvesting, Storage and Shipping	If seedlings need to be shipped they should be transported in their soil block trays. Transport them with the care you would give baby animals (ensure they don't tumble/tip, provide protection from wind/weather, provide breathability, keep them at the temperature they are used to).
Length of Storage	n/a. Ideally you are going straight from hardening to outplanting. Transportation can occur between harvesting and outplanting.
Guidelines for Outplanting / Performance on Typical Sites	Choose locations with full/near-full sunlight. Disturbed and loose soil with little vegetative competition is ideal. Fruit will mature within 90 days since germination. Fruit is not ripe if sepals are still green. Once they have dried the husk tomatoes are ready to harvest.

INFORMATION SOURCES

References	<p><i>Ground Cherry: Pictures, Flowers, Leaves & Identification</i> <i>Physalis virginiana</i>. (2021). Ediblewildfood.com. https://www.ediblewildfood.com/ground-cherry.aspx</p> <p><i>Physalis pubescens (hairy ground-cherry): Go Botany</i>. (2025). Nativeplanttrust.org. https://gobotany.nativeplanttrust.org/species/physalis/pubescens/</p> <p><i>Physalis pubescens Ground Cherry, Husk tomato PFAF Plant Database</i>. (2025). Pfaf.org. https://pfaf.org/user/Plant.aspx?LatinName=Physalis+pubescens</p> <p><i>USDA Plants Database</i>. (2025). Usda.gov. https://plants.usda.gov/plant-profile/PHPU7</p> <p>(n.d.). Image</p>
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