Plant Propagation Protocol for *Lactuca biennis*
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/2023/LABI

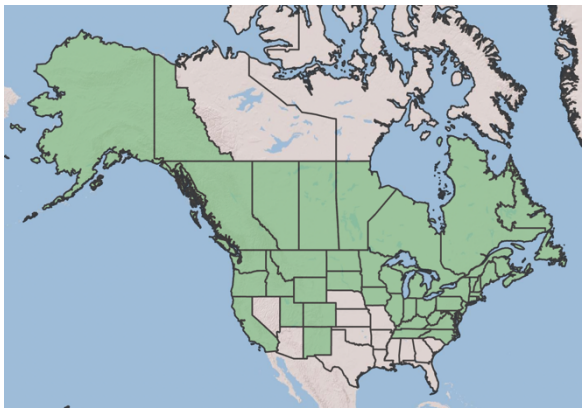

Figure 1. Distribution of *Lactuca biennis* in North America.[1]

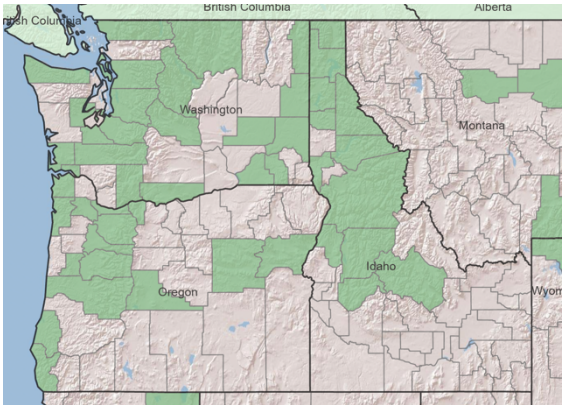

Figure 2. Distribution of *Lactuca biennis* in the Pacific Northwest (Washington, Oregon, Idaho).[1]

Figure 3. Flowering *Lactuca biennis*.[2]

Figure 4. *Lactuca biennis* leaf.[2]

TAXONOMY[1]	
Plant Family	
Scientific Name	*Asteraceae* (*Compositae* in older texts or as synonym)
Common Name	Aster family, Composite family, Sunflower family, Daisy family.
Species Scientific Name	
Scientific Name	*Lactuca biennis* (Moench) Fernald
Varieties	None listed.
Sub-species	None listed.
Cultivar	None listed.
Common Synonym(s)	*Lactuca spicata* auct. non (Lam.) Hitchc. *Lactuca spicata* (Lam.) Hitchc. var. *intergrifolida* (Torr. & A. Gray) Britton *Mulgedium spicatum* auct. non (Lam.) Small

	Mulgedium spicatum (Lam.) Small var. *intergrifolium* (Torr. & A. Gray) Small
Common Name(s)	Tall Blue Lettuce, Wild Blue Lettuce,[3] Blue Wood Lettuce,[2] Biennial Blue Lettuce.[4]
Species Code (as per USDA Plants database)	LABI
GENERAL INFORMATION	
Geographical range	Native to the continental United States, Alaska, and Canada.[1] See Figure 1 and 2 above.
Ecological distribution	Wetlands,[1] woodlands, shrublands, riverbanks, cliffs, waste areas.[5]
Climate and elevation range	Low to middle elevations,[6] <800m,[7] 900-1500m.[8] 22.4''-79'' annual precipitation.[2] Prefers moist soil. Semi-shade or no shade.[9]
Local habitat and abundance	Grouped with S*olidago rugosa, Corallorhiza maculate,* and *Sambucus pubens* due to similar ecological characteristics.[10]
Plant strategy type / successional stage	Invading.[11]
Plant characteristics	Annual or biennial shrub that can grow up to 10' tall;[9] averages 6-20 dm (1'-6.5'). [6] Stems typically glabrous.[5] Leaves are spread evenly on stem. They can be toothed or pinnatifid, about 4-20 cm wide and 10-40 cm long. Some hairs on underside veins.[6] See Figure 4 above. Flowers bloom June-October. Various sources specify June-August,[6] July-October,[9] or July-September.[4] Flowers are blue and white in color with an elongated inflorescence.[6] See Figure 3 above. Achenes are 4-5.5m long with a brownish color.[6] Dicotyledon.[1]
PROPAGATION DETAILS[12]	
Ecotype	*Lactuca canadensis* L. propagated in Michigan. *Lactuca canadensis* is referenced as being most similar to *Lactuca biennis*.[4]
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	Not specified.
Time to Grow	Not specified.
Target Specifications	Not specified.
Propagule Collection Instructions	Collected by hand from native local plants in September and October.

Propagule Processing/Propagule Characteristics	Seeds are dried for one to two weeks in unsealed paper bags or plastic bins. These are shaken or seed heads are turned. Seeds are not cleaned.
Pre-Planting Propagule Treatments	Cold-moist stratification occurs for two months or longer. Seeds are placed in a plastic bag or bin with equal parts perlite and vermiculite then placed in refrigerator, cold garage, or directly sowed outside in Spring. Seeds can be kept in cold storage for up to three years.
Growing Area Preparation / Annual Practices for Perennial Crops	Media: Scotts Redi-earth Plug and Seedling Mix (vermiculite, sphagnum peat moss); sterile Container: 24-cell, 2'' diameter, 14''x8.5''x4'' deep flats; any sized plug acceptable. Environment: Propagated in a greenhouse. Continuously run fans to circulate air; open vents to cool air during warmer summer months. Soil should be thoroughly moistened/mixed with water. Cells should be plugged with paper or newspaper to prevent soil from leaving plugs. Soil is put into plugs then water again. Two seeds are placed in each cell and cover with a thin layer of soil. Germination success rates are variable and low; seeds should be sowed year-round.
Establishment Phase Details	Soil is kept damp during the entire germination phase and should be water with a fine mist or light hose setting. Temperature: Thermostat set to 65 degrees F January-August and 55 degrees F September-December. Temperatures may reach 100 degrees F during summer. All light is natural through Standard U.V/ 3HL Clear 6 mil greenhouse film.
Length of Establishment Phase	Not specified.
Active Growth Phase	Seedling trays are moved to northern greenhouse tables. No fertilization occurs. Soil does not need to be kept consistently moist.
Length of Active Growth Phase	Not specified.
Hardening Phase	Mature plants are moved to a cold frame with a cover to protect from direct sunlight in early-late spring. Once frost has passed, plants can be placed outside and watered less frequently.
Length of Hardening Phase	Not specified.
Harvesting, Storage and Shipping	Flats are transplanted in May-October. If flats are not transplanted, they may be stored in the greenhouse for an additional year.
Length of Storage	~1 season/year

Guidelines for Outplanting / Performance on Typical Sites	Not specified.
Other Comments	Flowers resemble miniature dandelions.
INFORMATION SOURCES	
References	See below.
Other Sources Consulted	See below.
Protocol Author	Hunter Wade
Date Protocol Created or Updated	05/02/23

References

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