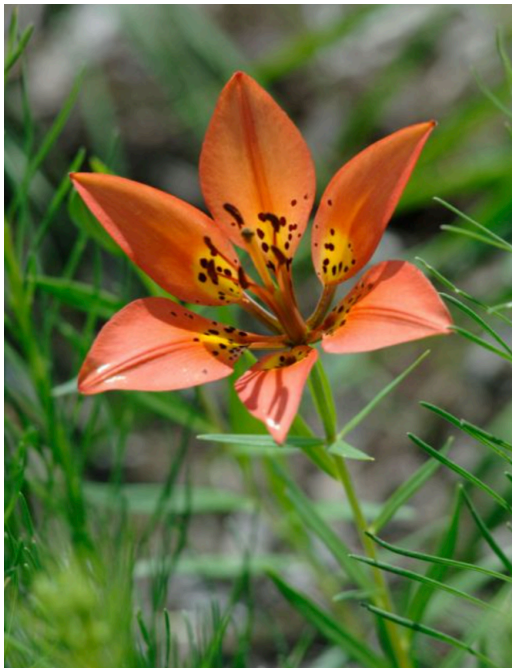
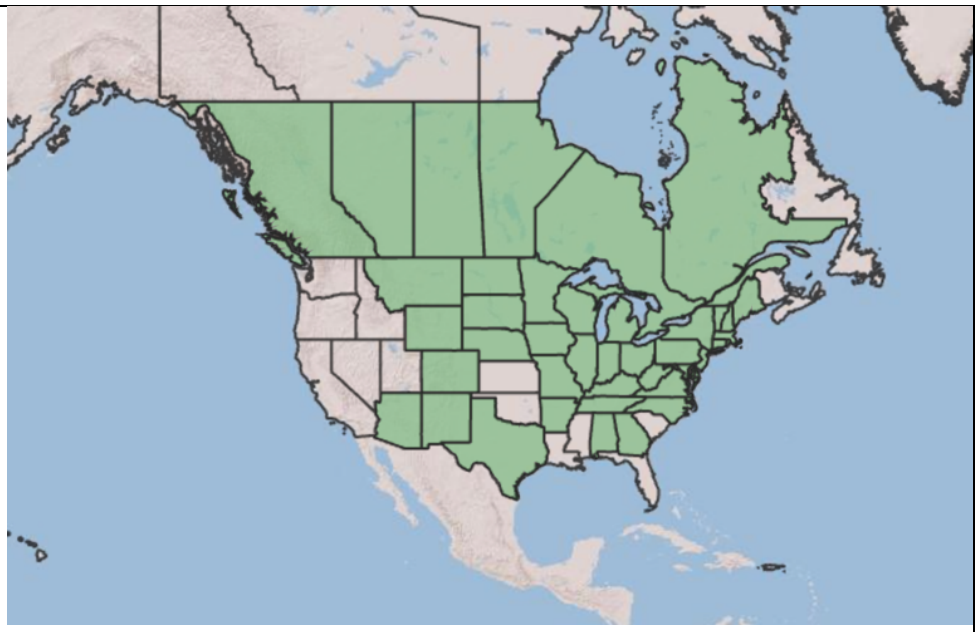
Plant Propagation Protocol for *Lilium philadelphicum* L.
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/*2024*/*LIPH.pdf*



TAXONOMY	
Plant Family	
Scientific Name	Liliaceae
Common Name	Lily
Species Scientific Name	
Scientific Name	*Lilium philadelphicum* L.
Varieties	
Sub-species	*Lilium philadelphicum* L. var *andinum* (Nutt.) Ker Gawl *Lilium philadelphicum* L. var *philadelphicum*
Cultivar	
Common Synonym(s)	*Lilium andinum* Nuttall; L. montanum A. Nelson; *L. philadelphicum* var. *andinum* (Nuttall) Ker Gawler; *L. philadelphicum* var. *montanum* (A. Nelson) Cockerell; *L. umbellatum* Pursh
Common Name(s)	Wood lily, Philadelphia lily, prairie lily, wild orange lily, western red lily, tiger lily
Species Code (as per USDA Plants database)	LIPH
GENERAL INFORMATION	

Geographical range	  Both photos courtesy of USDA Plants Database[10]
Ecological distribution	Can be found in dry woods[3], low grassy vegetation of tallgrass and midgrass prairies and meadows[8] understory of boreal forest[6] .
Climate and	0-2700 m[8]. The wood lily can survive temperatures as low as -22°F when

elevation range	fully dormant, but prefers temperatures from 41-90°F[4].
Local habitat and abundance	Lily species are typically associated with shallow-rooted plants, away from plants that are highly competitive[1] .
Plant strategy type / successional stage	Late seral
Plant characteristics	Bulb that grows about 2-3 feet tall, leafy perennial[1]. Leaves are up to 4 inches long, alternate, linear to lance-shaped and whorled at flower. Flowers are red or orange with brown/purple dots and dark purple anthers[3].
PROPAGATION DETAILS	
Ecotype	None listed
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container
Stock Type	Spencer-Lemaire Rootrainers Hillsons
Time to Grow	35 weeks to 13 months[2]
Target Specifications	Bulbets
Propagule Collection Instructions	Ripe stems are easily detached from the bulb. Suggested to mark collection sites while flower is still in bloom since the plant is hard to identify when the flower is gone[6]. Seeds should be collected 6-8 weeks after bloom period, when capsules are brown and starting to split[9].
Propagule Processing/Propagule Characteristics	0.83 g / 1,000 seeds[3]
Pre-Planting Propagule Treatments	30 to 60 days cold stratification (35-39° F)[4] Air-dry the fruits, open capsules and empty seeds if the capsules are intact. If not, crush and sieve to remove the seeds from chaff. Winnowing is recommended for removing small chaff and dust. Seeds should be stored dry. Highly viable (94%) when stored freezing for 5 months at -4 °F and at 15% moisture. Viable for 2 years[6]. May (2007) soaked seeds in ambient fresh water for 3 days with 5 daily water changes. They were then placed in a clear plastic bag with pinhole perforations, chilled at 41°F and kept moist for four weeks[5].
Growing Area Preparation /	Rootrainers were filled with soil with 8 parts coarse sphagnum peat moss, 2 parts vermiculite and 1 part perlite by volume. Seeds were put on the

Annual Practices for Perennial Crops	surface of filled cells, lightly dusted with a covering of the medium, and wetted[5].
Establishment Phase Details	Plants are challenging to establish. Protect from rabbits, voles, and slugs[4]. Containers should be kept at 73-77°F during the day and 64-68°F at night. May (2015) maintained an 18 hour photoperiod using high-pressure sodium lights. May also misted the trays each day by hand until soil appeared moist with no standing water on the surface[5].
Length of Establishment Phase	2-4 weeks[5]
Active Growth Phase	Germinants require regular feeding when in growth[4]. To develop bulbs, the plant needs strong light and good drainage[2]. Temperatures and photoperiod were kept the same (18-hour photoperiod with 73-77°F during the day and 64-68°F at night). May applied 20N:10P_2O_5:20K_2O fertilizer at 25 ppm nitrogen and 15N: 10P_2O_5:20K_2O fertilizer at 75 ppm nitrogen weekly, applying them simultaneously[5].
Length of Active Growth Phase	77 days[5]
Hardening Phase	May pre-chilled plants for 28 days in a cooler set to 45-50°F. Three 40W incandescent bulbs and two 34 W fluorescent bulbs were suspended about 12 inches above the trays' surface. May maintained an 8 hour photoperiod. The lights were then turned off and the plants were "chilled" with a medium temperature of 36-41 °F for 63 days. After this, the temperature was reset to 45-50°F with an 8 hour photoperiod for 14 days. Plants were then returned to the greenhouse[5].
Length of Hardening Phase	15 weeks[5]
Harvesting, Storage and Shipping	No information available.
Length of Storage	Seedlings or bulbets should be replanted immediately[4].
Guidelines for Outplanting / Performance on Typical Sites	Early to mid autumn is best for outplanting dormant bulbs in temperate areas but can be outplanted into late autumn if in a warmer area[4]. May outplanted in a subhumid climate in a mid-grass prairie ecosystem. May noted that wood lilies survived more in regularly weeded soils that were irrigated ever 2-3 weeks. Bulbs can remain dormant for several years before re-emerging[5].
Other Comments	
INFORMATION SOURCES	
References	**Works Cited** 1.Campbell, Spencer. "Wood Lily." *The Morton Arboretum*, 2024,

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2.“Lilium Philadelphicum.” *Prairie Moon Nursery*, 2024, www.prairiemoon.com/lilium-philadelphicum-prairie-lily#panel-descrip. Accessed 21 May 2024.

3.“Lilium Philadelphicum (Wood Lily): Minnesota Wildflowers.” *Www.minnesotawildflowers.info*, www.minnesotawildflowers.info/flower/wood-lily. Accessed 21 May 2024.

4.“Lilium Philadelphicum Wood Lily PFAF Plant Database.” *Plants for a Future*, 2005, pfaf.org/user/Plant.aspx?LatinName=Lilium+philadelphicum.

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6.“Scientific Name: Lilium Philadelphicum L.” *University of Alberta Library*, 2014, era.library.ualberta.ca/items/34cd2df5-0bc1-4b56-a136-2ed82a1457f8/view/1d2c047d-46a5-435a-b117-6ce5cf08a8b1/Lilium-20philadelphicum.pdf. Accessed 21 May 2024.

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Other Sources Consulted	
Protocol Author	Margot Linn
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