

CLARKIA PURPUREA (W. CURTIS) A. NELSON
& J.F. MACBR. **SSP. *QUADRIVULNERA***
(DOUGLAS EX LINDL.) F.H. LEWIS & M.E.
LEWIS

COMMON NAME: WINECUP CLARKIA, PURPLE
CLARKIA, FOUR-SPOT CLARKIA
FAMILY: ONAGRACEAE
GROWTH FORM: ANNUAL HERB



PLANTING

Ideally, seeds of this species would be planted during October, before the winter monsoonal period of November through March. However, we have planted the species as late as December. Seeds were hand-sown onto mounded planting beds, and a thin layer of soil was then raked over them. The seeds germinate readily without any form of pre-treatment.

PHENOLOGY

When growing in the San Joaquin Valley, *C. purpurea* germinates with winter rains and will typically begin flowering in April. Seeds can be collected from mid-May through early June.

SEED HARVESTING

Fruits mature over a period of a few weeks, so seed collection on multiple dates is ideal. When a plant bears both mature and immature fruits, we selectively remove mature fruits from plants by hand. If all of the fruits on a plant have matured, we collect whole plants. It is ideal to minimize the amount of soil that is collected along with the plants; soil particles that are of a similar size and weight as the seeds can be very difficult to remove during seed processing. We would transport harvested plant material to a warehouse for seed processing.

SEED PROCESSING METHODS

We begin by rubbing the harvested plant material over a screen or sieve to remove fruits from stems and break open fruits. We have also stripped fruits off stems by hand and used a household blender on pulse mode or low speed to break open fruits. In order to prevent damage to the seeds, the blender blade needs to first be coated with a plastic dip (Thomas, 2003). We have found the blender method to be effective for processing a small volume of plant material, but it would not likely be ideal for processing a large volume of plant material. We then separate seed from chaff using sieves of different mesh size or a Clipper Office Tester (made by the A.T. Ferrell Company).

CULTIVATION OVERVIEW

C. purpurea was sown in the nursery for two years, and we were able to collect seed during both years. This species appears to be susceptible to herbivory. During May 2008, we collected mature fruits on two dates, and left several plants behind that had immature fruits. When we returned to the nursery within a few days to collect more fruits, the remaining plants had disappeared. Wildlife herbivory is a common occurrence at the nursery, and we consider herbivory to be the most likely explanation for the plants' disappearance. Known herbivores at the nursery include black-tailed jackrabbits, desert cottontails, and deer mice.

A horticultural entry included in The Jepson Manual recommends that *C. purpurea* requires excellent drainage and does best in full or nearly full sun (Hickman, 1993). The soils at the nursery are Tranquillity clay with poor drainage, but *C. purpurea* individuals growing at the nursery appeared healthy.



REFERENCES

Hickman, J. C. (editor). 1993. The Jepson manual: higher plants of California. University of California Press, Berkeley.

ADDITIONAL INFORMATION ABOUT *CLARKIA*

PURPUREA:

Internet Resources

Seed photos from the Rancho Santa Ana Botanic Garden:
<http://www.hazmac.biz/040329/040329ClarkiaPurpurea.html>

Species profile from the Ladybird Johnson Wildflower Center at the University of Texas:
http://www.wildflower.org/plants/result.php?id_plant=CLPU2

Species profile from the Garry Oak Ecosystems Recovery Team: http://www.goert.ca/documents/PARFS_clarpurp.pdf

A note on germination and seed treatment from the Native Plant Network:
http://nativeplants.for.uidaho.edu/network/view.asp?protocol_id=2087

Literature

Thomas, D. 2003. Modifying blender blades for seed cleaning. Native Plants Journal 4: 72-73.

PREPARED BY

Brianna D. Borders, Restoration Botanist.

Other Contributors: Dr. Nur Ritter, Justine Kokx, Adrian Howard, and Graham Biddy.

PHOTOS



C. purpurea seedlings at the native plant nursery during January 2008.



C. purpurea seeds. Scale shown is millimeters.