

***EREMALCHE PARRYI* (GREENE) GREENE SSP.
*PARRYI***

COMMON NAME: PARRY'S MALLOW

FAMILY: MALVACEAE

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, *E. parryi* germinates as early as mid-January, and will typically begin flowering by mid-March. The peak time for seed collection is from mid-April to mid-May. However, we observed a few individuals flowering during late May of 2007.

SEED HARVESTING

Fruits are wheel-shaped and consist of several wedge-shaped single-seeded segments. Fruits are ready for collection when they are light yellow or light brown, with no green color remaining. The fruits mature indeterminately and therefore fruit collection on multiple dates is ideal. Alternatively, whole plants can be collected after the last of the fruits have matured. This method is more time-efficient, but many of the early-maturing fruits will have already dropped. Once mature, fruits are fragile and have the potential to shatter upon contact; it can be helpful to place a container under the plants when collecting fruits. We would transport harvested plant material to a warehouse and allow it to air dry, before seed processing.

SEED PROCESSING METHODS

We would break up the harvested plant material by gently rubbing it over a screen or a wire mesh sieve. Sieves of different mesh size can then be used to separate seeds from various components of chaff (e.g., pieces of stems, leaves, floral structures). An air separator (Seed Tech Systems, LLC.) can be used to remove additional lightweight chaff.

CULTIVATION OVERVIEW

E. parryi was sown in the nursery for four consecutive years and we were able to collect seed during two of the years. The 2004-05 growing season was the most successful as far as the number of plants established (over 1000) and the amount of seed that was harvested (a few kilograms of pure seed). The plants became infested with an unidentified scale insect during the 2004-05 growing season, but seed production was not affected. During the 2006-07 growing season, when total precipitation received, 7.1 cm (2.8 in), was approximately one-third of the 30-year mean, only a few individuals survived to maturity and a seed harvest was not made.

E. parryi is highly susceptible to browsing by jackrabbits and desert cottontails, particularly in years with minimal winter and spring rainfall, when plant growth at and around the nursery is reduced. If plants are not protected from herbivorous wildlife, the potential for seed harvest will be reduced. During one growing season, we applied a rabbit repellent product around the plants, but it was not effective in preventing herbivory. During another growing season, we planted the species within a fenced herbivore enclosure, thus protecting the plants from browsing. Though building an enclosure provided a solution for a relatively small population of nursery-grown plants, this approach would not likely be practical for a large seed increase field. It would also not likely be feasible to protect *E. parryi* from herbivory if the species were to be seeded at a restoration site.

With the exception of one dry growing season and problems with herbivory, *E. parryi* performed well at the nursery (i.e., the seeds germinated readily and when plants escaped browsing, they were robust and reliably produced seed). However, weed control was an important factor in our success with cultivating *E. parryi*. The dominant weed species at the nursery germinate so densely and grow so aggressively that in the absence of weed control, they would have significantly hindered the growth of the planted natives. The use of irrigation in response to seasonally low rainfall was also a contributing factor in our success with cultivating *E. parryi*.

The Rancho Santa Ana Botanic Garden has reported success with cultivating *E. parryi* ssp. *parryi* (Everett, 1957): the species grew best in light sandy loam, the seeds usually took about 24 days to germinate, and when seeds were sown in flats, seedlings were easily transplanted.

ADDITIONAL INFORMATION ABOUT *EREMALCHE PARRYI* SSP. *PARRYI*:

Internet Resources

Species profile from the Ladybird Johnson Wildflower Center at the University of Texas:
http://www.wildflower.org/plants/result.php?id_plant=ERPAP9

Literature

Everett, P.C. 1957. A summary of the culture of California plants at the Rancho Santa Ana Botanic Garden 1927-1950. Claremont, CA: Rancho Santa Ana Botanic Garden. 263 p.

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PHOTOS



E. parryi seedlings at the native plant nursery during January 2008.



E. parryi fruits are wheel-shaped and consist of several wedge-shaped single-seeded segments.



Individual segments of an *E. parryi* fruit.



Individual segments of an *E. parryi* fruit. This photo was taken of a different seed lot than the previous photos, and the fruits may have been more dry, resulting in the more pronounced ridges.



E. parryi seeds with the ovary wall removed. We did this out of curiosity; we did not remove the ovary wall before planting the seeds.



Individual segment of an *E. parryi* fruit.