

LASTHENIA CHRYSANTHA (GREENE EX A. GRAY) GREENE

COMMON NAME: ALKALISINK GOLDFIELDS

FAMILY: ASTERACEAE

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

In years with average amounts of winter rainfall, *L. chrysantha* germinates as early as mid-January and reaches peak flower during March; seeds can be collected during April. In years with minimal winter rainfall, we have observed *L. chrysantha* germinating towards the end of February, reaching peak flower during April, and producing seeds during May.

SEED HARVESTING

When seeds are mature and ready for collection, they will be clearly displayed on plants, in a cup-like structure that is known as the involucre. Mature seeds are retained on plants for at least one week, though rain or wind could facilitate early dispersal. All of the seeds on an individual plant will mature within a short time period. Therefore, once seeds on a given plant have matured, the entire plant can be collected by hand. However, seed collection on more than one date would be ideal, in order to collect both early and late maturing plants. We have also vacuumed seeds from plants using a shop vacuum and gas-powered generator. Mature seeds will enter the vacuum, while immature seeds will remain on 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 the harvested plant material to a warehouse and spread it out on tarpaulins to air dry, before seed

processing. We would set up a few electric fans to facilitate drying and turn the plant material at least once a day.

SEED PROCESSING METHODS

Using a hammer mill, raw plant material is reduced to a coarse but uniform mixture of seeds and associated chaff (e.g., pieces of stems, leaves, floral structures). Seeds can then be separated from chaff using either a Clipper Office Tester (A.T. Ferrell Company) or an air separator (SeedTech Systems, LLC.). For relatively small seed lots or in the absence of the equipment mentioned, plant material can be broken up by rubbing it over a screen or sieve. Wire mesh sieves with various screen sizes can then be used to separate seeds from chaff.

Seeds per gram = 3696¹

CULTIVATION OVERVIEW

L. chrysantha was sown in the nursery for seven consecutive years, and we were able to harvest seed during six of the years. The species does not seem to be susceptible to wildlife herbivory. In an area of native habitat, we observed that the species grew well following a fire.

L. chrysantha performed well at the nursery; it germinated readily, grew vigorously, and reliably produced seed. However, weed control was an important factor in our success with cultivating *L. chrysantha*. 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 *L. chrysantha*.

PREPARED BY

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PHOTOS



¹ This figure (n = 5; standard deviation = 235) is derived from a seed lot harvested in 2008 from a wild population.



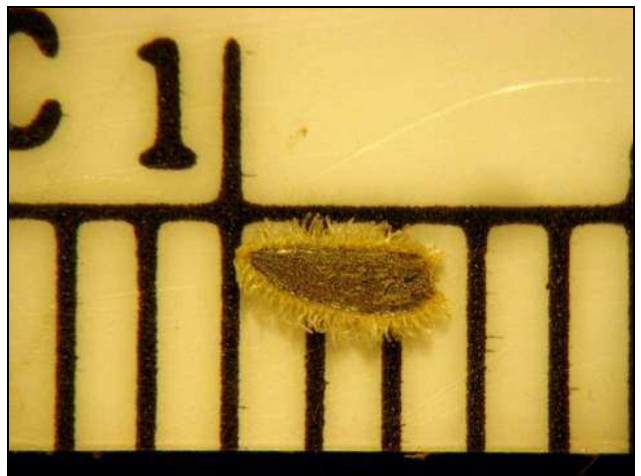
L. chrysantha seedlings at the native plant nursery during March 2006.



L. chrysantha seedlings at the native plant nursery (date unknown).



L. chrysantha seeds. Scale shown is millimeters



L. chrysantha seed. Scale shown is millimeters.