

***MADIA ELEGANS* D. DON EX LINDL. SSP.
*ELEGANS***

COMMON NAME: COMMON MADIA

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

When growing in the San Joaquin Valley, *M. elegans* typically germinates during February and will begin flowering in late March and early April. Seeds can be collected throughout the month of May and sometimes during June.

SEED HARVESTING

Seeds are ready for collection when they are medium to dark brown in color, have a hard consistency, and can be easily separated from the receptacle. Seeds mature continuously over a period of several weeks, so seed collection on multiple dates is ideal. Seed heads can be clipped off plants or mature seeds can be shaken or rubbed off the seed head by hand into a collecting bag or envelope. Harvested plant material is transported to a warehouse and allowed to air dry, before seed processing.

SEED PROCESSING METHODS

If entire seed heads have been collected, we rub the harvested plant material over a screen or sieve to release seeds from the receptacle. Following this, seeds can be separated from chaff using sieves of different mesh size or an air screen cleaner such as a Clipper Office Tester (made by the A.T. Ferrell company). An air separator (Seed Tech Systems, LLC.) can be used to remove additional lightweight chaff.

Seeds per gram = 507¹

CULTIVATION OVERVIEW

M. elegans has been sown in the nursery for three consecutive years and we were able to collect seed during two of the years. During the 2006-07 growing season, when total precipitation received, 7.1 cm (2.8 in), was approximately one-third of the 30-year annual mean, *M. elegans* seeds planted at the nursery did not germinate at all. Due to its sticky, glandular nature, the species is not susceptible to herbivory.

With the exception of one dry growing season, *M. elegans* 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 *M. elegans*. 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 *M. elegans*.

ADDITIONAL INFORMATION ABOUT *MADIA ELEGANS* SSP. *ELEGANS*:

Internet Resources

Species profile from the Ladybird Johnson Wildflower Center at the University of Texas:

http://www.wildflower.org/plants/result.php?id_plant=MAEL

Seed photos from the Rancho Santa Ana Botanic Garden:

<http://www.hazmac.biz/030210a/030210aMadiaElegansElegans.html>

Plant Guide by the Natural Resources Conservation Service available at:

http://www.plants.usda.gov/plantguide/pdf/cs_mael.pdf

Propagation Protocol from the Native Plant Network:

http://nativeplants.for.uidaho.edu/network/view.asp?protocol_id=2305

Data on seed abortion from the Rancho Santa Ana Botanic Garden (p.3):

http://rsabg.org/horticulture/Seed%20Program/Seed%20Collecting%20Guidelines_MDW3.pdf

Literature

Lewis, H. and F. W. Went. 1945. Plant growth under controlled conditions. IV. Response of California annuals to photoperiod and temperature. *American Journal of Botany* 32: 1-12.

PREPARED BY

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¹ This figure (n = 5; standard deviation = 86) is derived from a seed lot that was harvested from the native plant nursery in 2008.

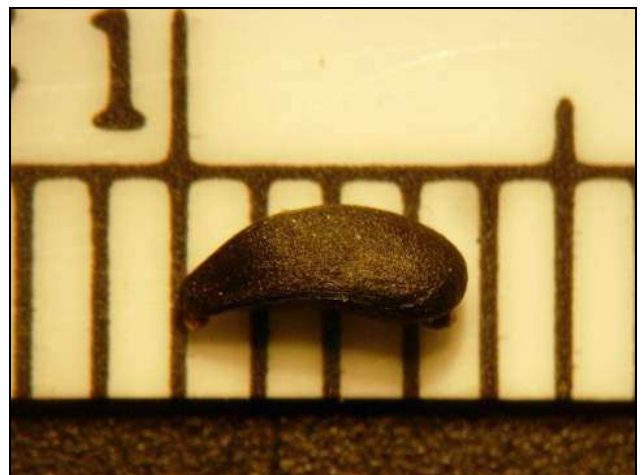
PHOTOS



M. elegans is on the left; *Phacelia ciliata* (Great Valley phacelia) is on the right.



M. elegans seeds. Scale shown is millimeters.



M. elegans seed. Scale shown is millimeters.