

***MENTZELIA LAEVICAULIS* (HOOK.) TORR. &  
A. GRAY VAR. *LAEVICAULIS***

**COMMON NAME: SMOOTHSTEM BLAZING STAR**

**FAMILY: LOASACEAE**

**GROWTH FORM: BIENNIAL OR PERENNIAL HERB**



**PLANTING**

We would typically plant seeds of this species during October, prior to the winter monsoonal period of November through March. Seeds were hand-broadcast onto raised planting beds, with a thin layer of soil raked over the top. Seeds germinate readily without any form of pre-treatment. During one year, we raised seedlings in a greenhouse and then transplanted them into the nursery.

**PHENOLOGY**

During a relatively dry year, we observed the species germinating towards the end of April. In a relatively wet year, we observed that the species had germinated by the middle of March. The species will typically begin flowering during late June and early July, and seeds can potentially be collected from late July through mid-September.

**SEED HARVESTING**

Fruits are capsules and are ready for collection when the flowers have dropped, the top of the capsule has turned brown, and the capsule has a crisp rather than pliable texture. When fruits are mature, the top of the capsule will typically disintegrate, allowing one to see the seeds contained inside. The fruits mature indeterminately and therefore seed collection on multiple dates is ideal. Each plant has multiple inflorescences and will likely bear open flowers, immature fruits, and mature fruits all at the same time. Mature fruits are not retained on the plants for more than a few weeks. Fruits cannot be easily stripped from plants. To minimize disturbance to the plants, we clip the mature fruits off with wire cutters.

**SEED PROCESSING METHODS**

We have only processed a small volume of plant material for this species, so we would break open the capsules by hand. Following this, we used a Clipper Office Tester or wire mesh sieves with various screen sizes to separate

<http://esrp.csustan.edu/vfpc>

seeds from chaff. Additionally, we have used a Mobile Cabinet seed separator (Seed Tech Systems, LLC.) to separate lightweight chaff from seeds.

**CULTIVATION OVERVIEW**

During one growing season, we sowed *M. laevicaulis* seeds in Ray Leach "Cone-tainers"™ in order to raise seedlings in a greenhouse environment. Germination was dense and multiple seedlings grew in each planting tube. The seedling roots are thin and delicate and were easily damaged when seedlings had to be separated prior to transplanting; many of the transplanted seedlings did not survive. We would recommend planting one or two seeds per planting tube. Because we did not know the viability of the seed lot, we sowed the seeds at a density that proved to be too high.

We certainly do not recommend greenhouse propagation and transplanting of seedlings over the more straightforward method of hand broadcasting seed at the nursery. The reason that we initiated greenhouse propagation is because our seed supply of *M. laevicaulis* was limited, and we were concerned that if we sowed the seeds directly at the nursery, they could fail to germinate or become lost to predation.

We do not have any data on seed viability for the species. However, an *M. laevicaulis* seed lot that was collected in July 2004 and stored in a non-climate controlled warehouse had a high germination rate when planted in January 2008.

We have observed that rabbits sometimes damage *M. laevicaulis* plants by clipping off the stems. During one growing season, the *M. laevicaulis* seed crop was significantly reduced because the plants were bearing flowers and maturing fruits when the damage was incurred. In the same year, animals uprooted several *M. laevicaulis* rosettes (thereby killing them) but did not eat them.

A horticultural entry included in the Jepson Manual states that *M. laevicaulis* has complex requirements and is a difficult species to grow. Additionally, the species requires excellent drainage, is intolerant of frequent summer water, and does best in full or nearly full sun (Hickman, 1993).

**ADDITIONAL INFORMATION ABOUT *MENTZELIA LAEVICAULIS*:**

Propagation Protocol from the Native Plant Network:

[http://nativeplants.for.uidaho.edu/network/view.asp?protocol\\_id=2445](http://nativeplants.for.uidaho.edu/network/view.asp?protocol_id=2445)

Seed Processing Protocol from the Native Plant Network:

[http://nativeplants.for.uidaho.edu/network/view.asp?protocol\\_id=3374](http://nativeplants.for.uidaho.edu/network/view.asp?protocol_id=3374)

Seed Photos from the Rancho Santa Ana Botanic Garden:

<http://www.hazmac.biz/070910/070910MentzeliaLaevicaulis.html>,  
<http://www.hazmac.biz/060130/060130MentzeliaLaevicaulis.html>

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

[http://www.wildflower.org/plants/result.php?id\\_plant=MELA2](http://www.wildflower.org/plants/result.php?id_plant=MELA2)

**PREPARED BY**

*Brianna D. Borders*, Restoration Botanist.

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

PHOTOS



Looking down at a transplanted *M. laevicaulis* individual in the native plant nursery during July 2007. The fruits that have a brown surface are nearly ready for collection whereas the fruits with a green surface are still immature.



*M. laevicaulis* seeds. Scale shown is millimeters.



*M. laevicaulis* seed. Scale shown is millimeters.