

# **Leafcutter Bees Have Petal Preferences**

GARDEN ECOLOGY LAB BRIEFS

A joint effort of 10-Minute University<sup>™</sup> and Oregon State University's Garden Ecology Lab

## **Our research**

"Leafcutter bee" is the nickname for bees in the family Megachilidae. Like the name suggests, some bees in this family cut portions of leaves as nesting material. Leafcutters, however, are not limited to leaves alone! Some use mud, resin, sticks, pebbles, or petals in their nest construction. *Megachile montivaga* (the silver-tailed petalcutter) and *M. brevis* readily collect petal segments from the Oregon native annual *Clarkia amoena* (Farewell-to-Spring). In our research garden, we had four types of *C. amoena* planted: the wild-type native, and three cultivars with different petal colors (*C. amoena* 'Aurora', *C. amoena* 'Dwarf White', and *C. amoena* 'Dwarf Scarlet'). We wanted to know if these petalcutters collected petals evenly across all four plant types. Over one summer, we regularly recorded the number of flowers that had petal cuts from each of the plants<sup>1</sup>.



C. amoena photos by Jen Hayes; top leafcutter photo by Elliot Ariel; bottom leafcutter photo by Devon Johnson.

Here, we show the average number of flowers with petal cuts from each plant type, with bars for standard error. We found that petalcutters took petal pieces from the wild-type *C. amoena* far more



A leafcutter bee uses petal and leaf sections to close off her nest in a bamboo stake.



A petalcutter in action!



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often than they did from the cultivars. The wild-type had about 3 times as many flowers with petal cuts as the second closest plant (C. amoena 'Dwarf White')! We found that plant type and flower number were important factors that influence the number of petal cuts. Even when we controlled for bloom count, the native C. amoena was significantly preferred over the cultivars.

## How does this relate to your garden?

When planting for bees, we often encourage folks to consider resources beyond food (pollen and nectar), such as the availability of nesting sites and substrates (what bees build their nests out of). Farewell-to-spring was identified as one of the top 10 plants for bees<sup>2</sup>, based on the abundance and diversity of bees that visited it. Here, we see that in addition to pollen and nectar, *C. amoena* provides an important nest resource for petalcutting bees.

Planting Farewell-to-Spring offers gardeners a great way to observe the benefits their plants provide for bees. Look for crescent-shaped cutouts on the tips of the petals. Each missing crescent is evidence of petalcutter activity, and a sign of a nest being made, or completed, like the one on the right! Some people may be displeased to see damage to their flowers, but as bee stewards, we can change peoples' perspectives about what a healthy garden looks like.



### Additional Information

 <sup>1</sup>Mead, M., Hayes, J., Filipovic, A., Erskine, S., Langellotto, G., Case, L. In prep. Assessing petal-cutting Bees (Megachile spp.) usage of Clarkia amoena (Onagraceae) petals through the lens of iNaturalist and a garden experiment.

• <sup>2</sup>Anderson, A., L. Locher, J. Hayes, M. Mead, S. Danler, D. Jones, G. Langellotto. 2022. Native plant picks for bees, FM 9363.

### Master Gardener<sup>™</sup> Advice

• Contact your local extension office for Master Gardener advice, or look for Master Gardeners at local farmers' markets.

• For more 10-Minute University<sup>™</sup> handouts, videos, and the class schedule, visit https://cmastergardeners.org.

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