

The debate over native plants and their cultivars gathers steam

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Pollinators preferred native *Clarkia amoena* over its cultivars. Credit: Jen Hayes.

Research to prove or debunk current opinions remains scarce as the debate over whether native plants or their cultivars attract and nourish the most pollinators.

The research that has been done—primarily on the East Coast—hasn't been conclusive. In fact, according to a doctoral candidate in the Oregon State University College of Agricultural Sciences who is completing her dissertation on [native plants](#), their [cultivars](#) and [pollinators](#), the findings have been all over the map.

"We were interested in the fact that there have been native plant studies in the eastern U.S., but not much on the West Coast," Jen Hayes said. "We wanted to see if we set up a study with Pacific Northwest natives and their cultivars if we could see any trends in pollinator visitation and utilization. There wasn't a strong and clear result. That's not what people want to hear but in ecology the answer is often, 'It depends.' It rings true here, as well."

Hayes said that the gardening community "has this burning desire to have black or white answer."

"Some groups are fervently anti-[cultivar](#)," Hayes said. "I don't think that's fair. I came into the study thinking that I preferred natives just because I had assumptions about the ecological benefits. There is [intrinsic value](#) to planting native plants in the landscape, but it's not fair to villainize cultivars."

A native cultivar is one that has been selected from a [native population](#) or a cross that's been developed by humans, said Signe Danler, online

instructor for the OSU Extension Service Master Gardener program. Breeders select for characteristics that people are drawn to, such as larger and more abundant flowers, a variety of colors, longer bloom or more compact form. The cultivars are distinct, uniform and stable, meaning they will remain the same with each generation.

The best way to tell the difference is that a cultivar will have its name listed in single quotes after the scientific name as in *Echinacea purpurea* "White Swan."

"When we create cultivars, we create a version of a native as we like it," Danler said. "And since many are propagated clonally (from one cell) they never change. Genetic variability stops."

But plants in nature have genetic variability that allows them to survive as the conditions around it change, Danler said. When something changes, for instance the climate gets wetter or drier, the latent genes allow it to adapt.

"That's the way it's supposed to happen but with [climate change](#), the shift is going too fast," she said. "Natural evolution can't keep up."

It's not harmful to grow cultivars in the garden, Danler said, but they should never be used in restoration projects, where genetic variability is key so plants can adapt. Cultivars of native plants are propagated to minimize genetic diversity in favor of uniformity.

Whether native cultivars attract more native pollinators is a bit cloudier, Danler said. Sometimes plants are bred with characteristics like more petals—double flowers are often preferred by humans—and the reproductive pieces are buried in a fluff of extra petals. That can impact the ability of the [native bees](#) to get to the nectar and pollen.

"Just because you have a lot of honeybees doesn't mean you have native bees and other native pollinators," Danler said. "If all you see are honeybees then you need to diversify and add more native plants if you want to draw pollinators. Non-natives like lavender will be buzzing with bees but look closer and it's only one kind of non-native bee."

Hayes conducted field trials at the OSU Oak Creek Center for Urban Horticulture in Corvallis. She planted [native species](#) in two big garden rows, each divided into three columns. They were compared with at least one cultivar and up to three.

"The cultivars we used represent a spectrum of plant breeding modifications," Hayes said. "Some just had a different flower color or a change in foliage like variegation. Others were more developed, like interspecific hybrids, which are plants resulting from parents of at least two different species. All of the cultivars had a wild-type native plant somewhere in its pedigree."

For her study, Hayes divided pollinators into categories: all pollinators, all bees, wild bees, [bumble bees](#), leafcutter bees, black bees, longhorn bees, syrphid flies and butterflies to represent the diversity of the pollinator population at Oak Creek.

"A lot of plants and pollinator groups didn't show a difference in visitation," Hayes said. "That was the case with more of our findings than anything else. Some pollinators have a clear preference, and some don't. Sometimes they prefer one plant and sometimes they don't. Again, it comes down to 'It depends.'"

There were only two plant groups where pollinators seemed to consistently prefer the native plant, including *Clarkia amoena* or farewell-to-spring, and *Eschscholzia californica* or California poppy. The plant with the strongest storyline, however, was *Clarkia*, Hayes said.

Pollinators in five groups preferred the species over the cultivar, which could be because the species blooms longer and, in more abundance, so pollinators have more time and flowers to visit.

There were some pollinator groups where yarrow (*Achillea millefolium*) and Douglas aster (*Symphyotrichum subspicatum*) cultivars were more visited by pollinators than the species. Yarrow by honeybees; Douglas aster by honeybees, bumble bees, the all-bee group and the all-pollinator group.

Hayes said cultivars can be valuable, like in the case of American chestnut trees that were decimated by the chestnut blight in the early 1900s.

"There might not be American chestnut trees left in the country if breeders weren't working on developing resistant cultivars," Hayes said. "It was a way to potentially restore a keystone species. In some ways, cultivars can be ecologically important and should be used. Or if someone wants to have their favorite plant in every color or a special cultivar that means something to them, who am I to tell them not to?"

Provided by Oregon State University

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