

Knowing the difference between native plants and nativars

Jill Odom



When trying to cater to the needs of pollinators or creating a landscape that is more drought tolerant, native plants are often heralded as an obvious choice for your plant palette.

Native plants are defined as those that are indigenous to a certain area, ecosystem or habitat and were present prior to European settlement. Because these species of plants evolved alongside native pollinators, it makes sense that they have a preference for native plants.

They are also best adapted to the climate and soil they grew up in, so they are less fazed by challenges such as drought, meaning they tend to need fewer resources and care than other non-native plants.

What some customers may not know when they are shopping at the garden center is many of the native plants available are actually native cultivars. If your customers are confused about nativars and native plants and wondering what the difference is between them, take the opportunity to educate them so they can make informed decisions.

What is a nativar?

A nativar is a portmanteau created by [Allan Armitage](#) in 2008 where he combined 'native' and 'cultivar' in an attempt to reduce confusion and set apart true natives from native plants that have been bred for specific characteristics.

Despite his good intentions, the confusion has remained, so first let's break down the meaning of all the different terms that get thrown around when discussing natives and nativars.

As mentioned before, a native plant is one found naturally in an area prior to European settlement. A cultivar is a plant that has been bred by horticulturists through cloning or hybridization to enhance desirable qualities, such as disease resistance or longer bloom time.

A nativar can be a hybrid of two or more plants selected to breed or a clone of one particularly desirable wild plant. Clones are created via plant cuttings and are genetically identical to its parent plant.

Hybrids are an intentional cross between two species of plant to produce aesthetically pleasing traits.

Straight species is another term for a native plant that has not been crossbred or hybridized. Non-native plants are those that are not naturally found in a certain region but were introduced by humans on purpose or on accident.

Explain to customers that if there is a catchy name after the scientific name of the native plant they are looking for, then they are looking at a nativar instead of a straight species. An example of this would be the purple coneflower. The native plant is simply known as *Echinacea purpurea*. Yet a nativar of this plant is *Echinacea purpurea* 'Magnus.' Finding straight species of native plants can be harder than it sounds as many nurseries only stock certain cultivars of native plants.

[Doug Tallamy](#), a University of Delaware entomologist and author of *Bringing Nature Home* says that the prevalence of nativars shows that the nursery trade "is still stuck on the idea of plants as enhanced decoration" rather than necessary to wildlife.

"We do want beautiful plants in our yard," Tallamy tells [AWaytoGarden.com](#). "But we also want to think about those vital functions that they must be performing in our yard. So, I would just love to see straight species sold right along with those cultivars, so if the homeowner is more interested in restoration or getting the maximum value out of that particular species, they have the option of buying it. That's what I would like to see."

If your customers are seeking nurseries that sell straight species, guide them to the [Native Plant Nursery Directory](#), which lists native plant nurseries by state.

What's the difference?

Aside from just the name, there is also a great deal of confusion when it comes to whether there is a real difference between natives and nativars. For a time, the answer was, 'Who knows?' But over time it has changed to, 'Well, it depends.'

Thanks to researchers like Tallamy and [Annie White](#), a Vermont ecological garden designer, they have been working to find definitive answers on whether nativars offer the same benefits as their native parents.

Some changes you can obviously tell remove an ecological function, such as a flower that produces seeds being bred to be sterile will no longer feed the birds that eat those seeds. Others are trickier, which is why studies are being conducted to determine which nativars can still fulfill their roles in a habitat.

The Mt. Cuba Center in Hockessin, Delaware, started trial gardens to put nativars to the test to study their pollinator attractiveness, growth, vigor and disease resistance. Click [here](#) to view the reports of the trial gardens.

Some traits nativars offer can be more beneficial for wildlife such as producing more fruit, having a longer bloom time or attracting more pollinators. It has been found that the purple-flowered *Veronicastrum virginicum* 'Lavender Towers' draws more pollinators than the native version, which has white flowers.

Some nurseries turn to nativars when they are able to meet a need the native plant cannot, but it's important to make sure the nativar still serves an ecological purpose in the garden.

On the other hand, some nativars have been bred to have double blooms that make it impossible for pollinators to reach, or the flowers produce little to no nectar or pollen for insects.

Tallamy also found that purple foliage, while a visually desired trait, deterred insect feeding among caterpillars due to the anthocyanins in the leaves.

The main complaint and concern against nativars is the lack of genetic diversity. This is because nativars are cloned in order to maintain their desired qualities, removing the chance for genetic variation. When there is more genetic diversity, plant species are more likely to be able to adapt and overcome threats like pests and diseases.

Wild Ones, an organization that promotes the use of native plants and sustainable landscaping does not encourage the use of nativars.

"The pervasive scale of mass-production, promotion and use of nativars is of concern to ecologists and environmentally focused gardeners, horticulturists and native plant professionals," [Wild Ones](#) writes. "The longer we rely on nativars – clones – that are not cross pollinating in natural populations to produce their offspring, the greater the risk that we are left with only diminished selections of native plants – the nativars instead of straight species."

Others argue that nativars are definitely still native plants and there is a place for them in the market. Some just prefer to not use the name nativar when they sell them and call them what they really are: cultivars.

Where should you stand?

If your clients are wanting to create a garden that meets the needs of wildlife or pollinators, then you need to focus on using straight species. The function of the plant needs to come before whether the plant simply looks good.

"It is a bad idea to load the landscape with cultivars that have no genetic variability," Tallamy tells Wild Ones. "I would go that route only if it is a choice between a nativar and a plant from China. I think the safest policy right now is to encourage the use of straight species. Ask for them at your local nursery, encourage nurserymen to start stocking more straight species. The nursery industry has not embraced the message that native plants are more about ecosystem function than about looks. We have to convince them that there is a market for plants with high function."

If native plants are not readily available or they do not work within the parameters of your customer's property, nativars can suit a need and the research now available can help you make informed decisions on which ones remain beneficial to pollinators.

Nativars are not evil, but they should be used with the proper consideration and not as a full-blown replacement for natives just because some can become too tall or aggressive at times. There's no shame in breaking out the pruning shears to keep these plants in check.

Are Nativars OK? - FineGardening

By Keith Nevison

Enthusiasm for native plants continues growing each year as we become increasingly aware of and concerned about the deleterious impacts humans have on the natural world. These impacts, which include habitat loss, climate change, and insecticide use, have certainly intensified over time. This can inspire motivation to take action, often beginning in one's garden.

At the same time, a familiar scene typically plays out at local nurseries across the United States when customers arrive to purchase ecologically friendly plants for their gardens. Seldom seen are the native, unmodified, "straight species" originally emanating from nature. Instead, customers find a veritable collage of native plant cultivars featuring qualities such as larger flowers, compact sizes, improved disease resistance, alternative leaf coloration, and other attributes deemed "garden worthy." These cultivars are sometimes the result of years of concerted breeding efforts, which are then maintained through asexual propagation techniques.

[Learn more: Do pollinators have a preference for natives or nativars?](#)

A study of phlox cultivars yields a surprising result

Inquisitive minds may begin to wonder if these "improvements" come with as many benefits to pollinators and wildlife as the original species from which they derive. For instance, when a plant has been bred to have larger flowers featuring a different color, or even double flowers, does it attract pollinators to the same degree as an unmodified native, or does it furnish them with a similar level of nectar benefits? Perhaps such a plant functions instead as "fool's gold," masquerading as a beneficial native plant while not offering anything in the way of ecological services to pollinators? These were the questions that informed the experimental work I conducted for my graduate studies, which involved assessing insect preferences for various cultivars and analogue species in the genus *Phlox*.

The setting for my experiment was the Trial Garden at the Mt. Cuba Center in Hockessin, Delaware, where a lengthy *Phlox* performance trial was underway. Working with volunteers from Mt. Cuba Center's Pollinator Watch, I monitored insect visitation as a means of determining preference, recording data over a 119-day window from midspring to late summer in 2015. I also sampled over 1,000 individual flowers for nectar sucrose content and measured their floral part sizes to determine if these are a factor in encouraging or dissuading pollinators.

Phloxes tested

P. carolina and its cultivars

- 'Bill Baker'
- 'Gypsy Love'
- 'Kim'
- 'Lil' Cahaba'
- *P. carolina* subsp. *carolina*
- *P. carolina* subsp. *alta*

P. glaberrima subsp. *triflora* and its cultivars

- 'Triple Play'
- 'Morris Berd'
- 'Forever Pink'

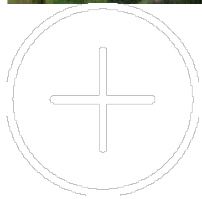
P. paniculata and its cultivars

- 'Delta Snow'
- 'Dick Weaver'
- 'Jeana'
- 'Lavelle'
- 'Robert Poore'
- 'Volcano Red'

P. divaricata and its cultivar

- 'Charleston Pink'

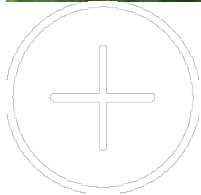
My hypothesis was that straight species would outperform cultivars in attracting native pollinators to their nectar-rich flowers. This assumption was based in large part on scientific knowledge of how plants and animals have coevolved to rely on each other, specifically within a pollination biology framework. Given my hypothesis, it came as a surprise that over a four-month window of recording 722 total insect visits, the garden phlox cultivar 'Jeana' (*P. paniculata* 'Jeana', Zones 4–8) was determined to be the most attractive plant in the trial, with two and a half times the visits of the next closest cultivar, and seven times more than the straight species! One potential reason for this is its very floriferous nature and its smaller, shallower flowers that are easier for pollinators to access. In fact, my analysis indicated that nectar sugar concentration did not factor particularly strongly in attraction, but the width of the corolla opening did, with strong insect preference toward plants, like 'Jeana', that have a narrow flower opening.



Phlox paniculata. Photo: Jennifer Benner

While this might appear to suggest that cultivars are just fine as substitutes for straight species in terms of providing ecological benefits, the actual discussion is more nuanced. For starters, 'Jeana' is a wild-selected cultivar, originally sourced from a colony growing along the Harpeth River outside of Nashville. Cultivars ("cultivated varieties") are selections of plants that can include everything from wild forms to plants developed through rigorous breeding programs that are often given a marketing name to distinguish them in the nursery trade. In the phlox trial, when compared to intentionally bred cultivars, the straight species and wild-selected cultivars generally outperformed their counterparts. This leads me to recommend planting wild types and wild-derived cultivars before delving into bred selections.

Beyond my experimental work, surveys have been conducted by Penn State University Extension (Bees, Bugs, and Blooms project), the University of Vermont's Annie White, the University of Delaware's Owen Cass, and others. In general, most research has found that straight species outperform associated cultivars in terms of attraction; however, this is not exclusive, and there are specific examples where cultivars have demonstrated greater attraction. For example, Dr. White observed an insect preference for a cultivar of Culver's root (*Veronicastrum virginicum* 'Lavendelturm', Zones 4–8) over the straight species, though this was the one instance of a cultivar outperforming its analogue out of twelve native straight species and fourteen native cultivars sampled. All of this is to say that more research on the topic will surely help to inform gardeners, entomologists, plant breeders, nursery owners, and landscapers about the role they can have in supporting wildlife habitat through planting native and ecological gardens.



'Jeana'. Photo: Steve Aitken

Research continues on testing native cultivars for wildlife attraction. This is often driven by citizen science efforts, which can be highly effective at gathering data by sharing the workload. One program currently underway is the Nativars Research Project sponsored by Buddburst, an initiative of Chicago Botanic Garden, which is working with volunteers at CBG, Denver Botanic Gardens, and San Diego Botanic Gardens to collect 10-minute-interval observations to record the number and type of pollinators visiting flowers. This project is slated to run through fall 2022, so there is still time to participate and contribute to advancing knowledge in this field.

So what should you do?

At the completion of my study, I developed a series of recommendations for gardeners and horticulturists to consider implementing. First, include the straight species whenever possible. With the straight species, you can be certain that pollinators will respond to it. A cultivar, on the other hand, might or might not be better, but more research needs to be done. And planting the straight species increases the genetic diversity of a garden and creates a consumer demand for these important plants. If no straight species is available or you are taken with a particular cultivar, consider how the difference in the two plants might affect pollinators. If you do opt for a cultivar, keep an eye on it. If it doesn't seem to be attracting as many pollinators as you might think, try adding another one to compare.

Given that many wild populations continue to exist in areas with direct proximity to housing developments, another recommendation is to proceed with caution when considering the planting of native cultivars in places where cross-pollination may affect vulnerable in situ species. While it might seem easy to suggest simply that native gardens should only be planted with straight species, the reality is that pollinators need our help, and having a greater diversity of species, potentially including cultivars, can effectively extend the nectaring season, providing insects with more opportunities for gathering the energy they need to complete their life cycles.

Science

How Cultivar Attributes Might Affect Pollinators

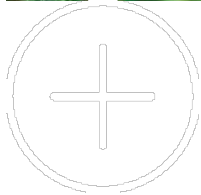


Photo: courtesy of Verastuchelova/dreamstime.com

Double flowers

Physical changes in flower anatomy may restrict access to pollen and/or nectar for feeding.

Flower size

A wider corolla may increase dilution of nectar; a smaller corolla may concentrate nectar-enhancing rewards for pollinators.

Flower color

Different colors may alter cues associated with pollinator attraction.

Plant stature

Pollinators may prefer feeding higher or lower as a means of protection from predators.

Foliage color

This is probably benign for pollinators but not for insects who might feed on the foliage.

Bloom time

Many cultivars bloom earlier/later/longer. This can be good, or it can mess with the timing of when the pollinators need that plant. One of the biggest values of native cultivars is that they potentially extend the window of nectar/pollen benefits to wildlife.

Compact habit

This is unknown. It could be that some pollinators preferentially feed closer to the ground to avoid detection by birds and other predators. The opposite could be true too (e.g., *Phlox* 'Jeana' is supertall, and lots of pollinators feed on it). More study is needed on this topic to confirm.

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