



## USING NATIVE CULTIVARS IN LANDSCAPES: Guidance for Extension Professionals

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### Overview

Native plants play a vital role in supporting biodiversity and providing habitat for native insects and other wildlife. However, access to native species can be limited and varies greatly across the country. Many garden centers and nurseries primarily offer native cultivars – native plants selected and bred for specific traits such as flower color, height, or disease resistance. Extension professionals are frequently asked whether native cultivars are appropriate substitutes for true natives. While native cultivars can add value to landscapes, research shows that some cultivar features may have reduced ability to support pollinators and other insects. This fact sheet is meant to assist the Extension professional in responding to these concerns, and provides suggested guidance on when and how to incorporate cultivars into native plantings.



### Definitions and Terminology

**Native:** A native plant is one that has evolved in concert with the soils, climate, flora, and fauna of a specific geographic region. Plants introduced to North America since European settlers came to the continent are not considered native, but may have become naturalized since their introduction. The original plant species found in nature is often termed “wild-type” native plants or “straight natives”.

**Variety:** Native plants may have natural variation in the wild, for example darker or lighter flower color. Breeders may consider the new trait desirable and collect seed from these plants. These are called “varieties” and will grow from seed with the same characteristics as the parent. This is often termed growing “true to seed”.

**Cultivar:** A cultivar is short for “cultivated variety” and is any plant that has been modified by humans. Modification can occur through crossbreeding, hybridization, or genetic modification such as gene editing. Cultivars are clones and do not grow with the same characteristics as the parent from seed. They are reproduced by asexual propagation methods such as grafting, cuttings, or tissue culture. Some people refer to cultivars of native plants as “nativars”.

### Distinguishing between straight natives and native cultivars

Cultivars are often developed to highlight specific, desirable traits of a species. For example, coneflowers (*Echinacea spp.*) are popular native plants for home gardening. The native species of coneflower are various shades of pink and purple, or yellow. By crossing these native species, plant breeders have developed coneflower cultivars with different colors including red, white, and multicolored. Other manipulated traits include height, flower shape, leaf color, and disease resistance.

If plants are properly labeled, it is easy to distinguish between straight natives and cultivars at the nursery or garden center. Plant labels for straight natives will list the scientific name, genus and species, with no modifier. Labels for cultivars may not list the scientific name at all or include a descriptive name following the scientific name. For example, the native species commonly called purple coneflower will be labeled as *Echinacea purpurea* but the cultivar of the plant with white flowers may be labeled *Echinacea* x ‘Snow Cone’ (the ‘x’ indicates hybrid) or *Echinacea purpurea* ‘Alba’.

### Cultivar Traits That Matter

Research has identified double blooms and altered leaf color as two issues that may negatively impact a native plant’s value to insects. Double blooms are often created by replacing the reproductive parts of the flower with petals. If anthers are replaced, pollen is reduced or eliminated. If carpels are replaced, nectar and seed set are reduced or eliminated. Sterile cultivars may prevent unwanted spread of a plant, but they may not provide resources for seed-eating insects and birds.

Cultivars in which green leaf color is altered to red or purple are popular. The change in leaf color deters insect feeding and reduces the abundance and diversity of caterpillars. While this might sound ideal, remember that the goal with native plantings is to support insects, and plantings should encourage larval feeding.

Cultivars that are similar to their wild-type counterparts may not impact insect visitation significantly. Insect visitation to dwarf cultivars, for example, is not diminished compared to true natives. Some cultivars, especially those which are modified to increase the number of blooms, may be more attractive to insects than the wild type.

## Cultivar Traits That Matter continued...

Some studies have shown that while the overall species diversity of insect pollinators and herbivores utilizing cultivars is not significantly different from wild-type plants, the particular species of insects visiting cultivars and wild-type plants does differ.

Because cultivars are propagated through cloning, there is a general concern about the lack of genetic diversity compared to wild-type populations. The impact of crossbreeding between cultivars and wild-type species is also of concern. Diluting the genetic variation of a population reduces their ability to adapt to environmental changes, making them more vulnerable to diseases, pests, and climate shifts.

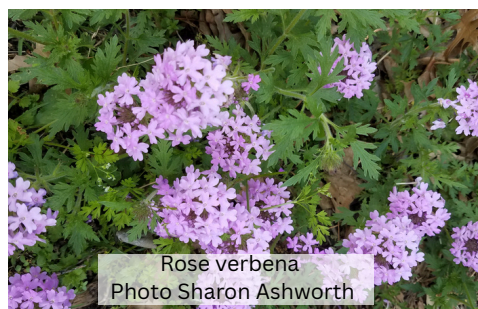
While native plant cultivars are increasingly popular in landscaping, their ecological value compared to straight species is not fully understood. Most of the science to date focuses on pollinators, particularly bees, and the results suggest that some altered traits may reduce a plant's ability to support insects. However, these findings are limited in scope. A cultivar's impact on the insect community is dependent upon the characteristic altered, the plant resource used by insects (pollen, nectar, tissue), and the type of insect.

## Advising the public on cultivars of native plants

Don't dismiss cultivars entirely. Many non-invasive, introduced plants and cultivars of natives do provide benefits to pollinators and other insects that contribute to the local food web. Some of these plants can "fill in" bloom gaps in a landscape or extend the season of availability for insects. This is especially important as we experience climate change driven changes in our seasons. More important is advising people to plant a diversity of plants and reduce monoculture lawns.

Promote diversity. The key benefit in using natives is that native plants support a wider diversity of native insects, including many specialist species whose habitat is disappearing. Genetic diversity of plants is linked to insect diversity and diversity is reduced when using clones of cultivars.

Choose cultivars carefully. Many garden centers carry cultivars of natives rather than straight natives. Choose cultivars that minimally deviate from the wild type: dwarf varieties, subtle flower color differences, or bloom density for example, seem to have little impact. Avoid if possible, cultivars with purple leaves (if different from native species), changes in flower shape, and double blooms. Also note that sterile cultivars may prevent reseeding or cross-pollination with wild types but may lack the pollen, nectar, or seed resources for wildlife.



## Keeping up with the science

Two centers of research, the Garden Ecology Lab at Oregon State University and the Mt. Cuba Center, regularly post observations and research on the use of native plants and cultivars in horticulture.

### Summary

Native plants and cultivars of native plants play a role in sustainable landscapes when chosen thoughtfully.

Extension professionals should:

- Encourage plant diversity and discourage monoculture landscapes;
- Favor cultivars that maintain the ecological traits of wild types;
- Stay current with emerging research to provide evidence-based recommendations.

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