

The power of purple

February 9 2011, By Jason Griffin

Kansas State University isn't the only place where the color purple rules. In the plant world, many plants are defined by their purple color.

Jason Griffin, associate professor of nursery crops and director of K-State Research and Extension's John C. Pair Horticultural Center in Wichita, says the importance of the color purple in [plants](#) is measured not only in ecological and evolutionary impact, but also by its pleasing appearance.

"From a human perspective, we love purple plants," he said. "Purple is one of the most popular flower colors, yet one of the rarest colors in fruit and foliage."

A great amount of research has investigated the synthesis of purple and how to manipulate it, Griffin said. The color is highly desirable in flowering landscape plants. Purple foliage plants, despite their rarity, are extremely popular. The green leaves of autumn give way to red, orange and yellow. However, a few lucky species will turn a shade of purple, which is rare in the fall color palette.

"Purple is both rare yet highly sought after by consumers and landscape professionals alike," he said.

The color purple also functions as a guide for pollinators. Flowers of many species have purple stripes on their petals, which are called nectar guides. These guides clearly lead toward the reproductive structure, or center, of the flower, increasing the chances for pollination, according to

Griffin.

Purple seed, pods and other forms of fruit then influence the reproductive cycle. The color purple will attract herbivores, which consume the seed and deposit it elsewhere.

"So in this case, purple helps distribute the species across the landscape," Griffin said.

Purple foliage can most easily be explained by genetic mutation, he said. Humans then artificially reproduce the foliage for ornamental purposes. Typically, purple foliage provides little benefit to the plant. Most botanists feel if there were an [evolutionary advantage](#) in having purple foliage, purple leaves wouldn't be so rare.

"We would be surrounded by purple plants," Griffin said.

But the popularity and capabilities of purple plants set them apart from any others.

"In many ways, the ability of a plant to produce a [purple](#) color gives it a distinct advantage. Humans will cultivate it, eliminate any competition, ensure it reaches maximum reproductive potential, and even disperse its seed for it -- often over great distances," he said.

Provided by Kansas State University

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