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Normal fall foliage expected despite summer's drought

WEST LAFAYETTE, Ind. - Rain that Indiana has received the past few weeks could help produce normal colors on fall foliage even though many trees were damaged by the summer's drought, a Purdue Extension forester says.

Some trees have lost leaves, and others have leaves that have been scorched by drought, but rains could bring recovery and more coloration, said Lenny Farlee.

"It's too early to say whether the drought will be a major factor in leaf coloration," he said. "If we continue to get a little rain and lots of sunny weather we could have decent fall color."

The green color in tree leaves during the spring and summer comes from chlorophyll, which is used in the food-making process for plants. Sunlight, water and carbon dioxide combine to make sugars so the plant can survive.

Other colors are present in leaves, too, but as a tree makes food for itself the green chlorophyll dominates other colors, such as yellow or orange.

"As day length gets shorter and we start to get some cooler weather, chlorophyll will start breaking down and stop masking the other colors in the leaves," Farlee said.

Trees prepare themselves for winter dormancy as the green fades and photosynthesis production stops. With decreased sunlight and water, the tree will rest and live off food stored during the summer.

Anthocyanin remaining in the leaves after photosynthesis can cause a reddish tint. Tannin, a waste product stored in cells, causes a brown or golden color to show. Yellows and oranges are caused by carotenoids.

Leaf coloration varies by tree species and the weather an area experiences late in the summer, Farlee said. Normal fall leaf colors include yellows, oranges and reds for maple trees; yellows for tuliptrees; yellows and golds for hickories; and browns or deep reds for oak trees.

The amount of sunlight trees receive also affects color intensity. More sunlight brings more intense colors.

"The best weather for colorful fall foliage is when we have bright, sunny days and cooler nights," Farlee said.

Trees on the outside of woodlands typically are more colorful because they receive more direct sunlight.

"The best fall color can often be seen in trees on the edge," Farlee said. "That's why trees along roads are more colorful and sometimes are the best way to view fall foliage."

More information on fall color is in the publication "Why Leaves Change Color - the Physiological Basis" at <http://www.extension.purdue.edu/extmedia/FNR/FNR-FAQ-5.pdf>

A compilation of Purdue Extension drought resources is available at <http://www.purdue.edu/drought>

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