



AUTUMN LEAVES

AUTUMN'S MOST COLORFUL SPECIES

YELLOW

tulip tree *Liriodendron tulipifera*
 ginkgo *Ginkgo biloba*
 black locust *Robinia pseudoacacia*
 hophornbeam *Ostrya virginiana*
 redbud *Cercis canadensis*
 black walnut *Juglans nigra*
 green ash *Fraxinus pennsylvanica*

ORANGE

sassafras *Sassafras albidum*
 witch hazel *Hamamelis virginiana*
 sugar maple *Acer saccharum*
 poison-ivy *Toxicodendron radicans*
 black oak *Quercus velutina*
 shagbark hickory *Carya ovata*

RED/PURPLE

flowering dogwood *Cornus florida*
 red maple *Acer rubrum*
 black gum *Nyssa sylvatica*
 scarlet oak *Quercus coccinea*
 burning bush *Euonymus alatus*
 sweetgum *Liquidambar styraciflua*
 arrowwood viburnum *Viburnum dentatum*
 zelkova *Zelkova serrate*

FALL COLOR PROGRESSION



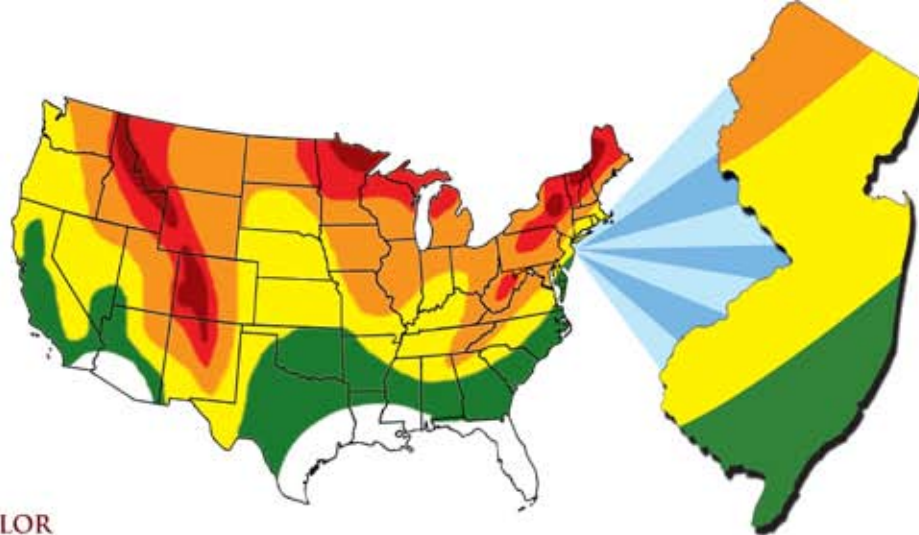
This graph shows the three waves of fall color - yellow, orange, and red. Depending on the region, each wave takes seven to 16 days to progress. In mid-season, where the three colors intersect, the fall display is most colorful.

FOR A COLORFUL FALL

- Number of leaves
Many leaves (no early leaf drop)
- Health of tree
No leaf damage by environmental problems or pests
- Sunlight
More sun and less cloud cover
- Rain
Intermittent light rain - no heavy rain or drought
- Temperature
Cool at night without frost

FALL FOLIAGE MAP

Autumn changes begin in the mountainous regions and progress southward toward lower regions. With expansive deciduous forests, Eastern North America has one of the best fall color displays in the world.



FOR MORE INFORMATION ON FALL COLOR

US Forest Service Fall Color Hotline

1-800-354-4595

US Forest Service Online

<http://www.fs.fed.us/news/fallcolors/>

NJ Travel & Tourism Online

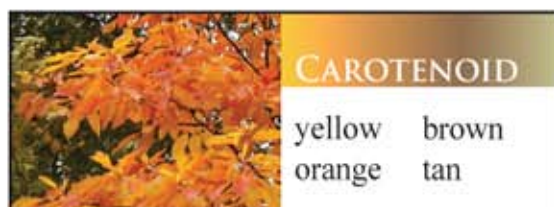
www.nj.gov/travel/feature_fall_foliage.html

PIGMENTS THAT COLOR THE AUTUMN

During the growing months, leaves produce chlorophyll, a green-colored pigment. Through chlorophyll the tree uses the sunlight's energy to combine carbon dioxide and water to make glucose, which serves as food for the tree. This process is called photosynthesis.

As summer ends, shorter days and colder air alerts the tree that winter is coming. The tree severs the leaves' connection to water and minerals from the roots. The leaves begin to die and chlorophyll production ends. The sunlight breaks down chlorophyll which reveals carotenoid pigments previously masked by the deep green. The remaining chlorophyll produces lots of sugar, which is not used up by the tree.

Red pigments called anthocyanins are created through excess sugar and more sunlight. Sunny days and cool nights provide the best weather for good anthocyanin production. You may notice that the leaves may be more red where the tree receives direct sunlight. Shaded leaves don't produce as many anthocyanins and appear less brilliant.



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REFERENCES

- "Bulletin #7078: Why Leaves Change Color." University of Maine Cooperative Extension homepage. 17 Sep. 2008 <<http://www.umext.maine.edu/onlinepubs/htmlpubs/7078.htm>>.
- Coder, Kim D. 1997. Autumn Forest and Landscape Color. University of Georgia Cooperative Extension Service Forest Resources publication FOR97-31. pp.2.
- Coder, Kim D. 1997. Best Fall Colors in Trees. University of Georgia Cooperative Extension Service Forest Resources publication FOR97-29. pp.1.
- "Why Leaves Change Color." USDA Forest Service. 17 Sep. 2008 <<http://www.na.fs.fed.us/spfo/pubs/misc/leaves/leaves.htm>>.