October 2020

Missouri Chapter News

Walnut Council: Growing Walnut and Other Fine Hardwoods

Fall Color - What Causes It?

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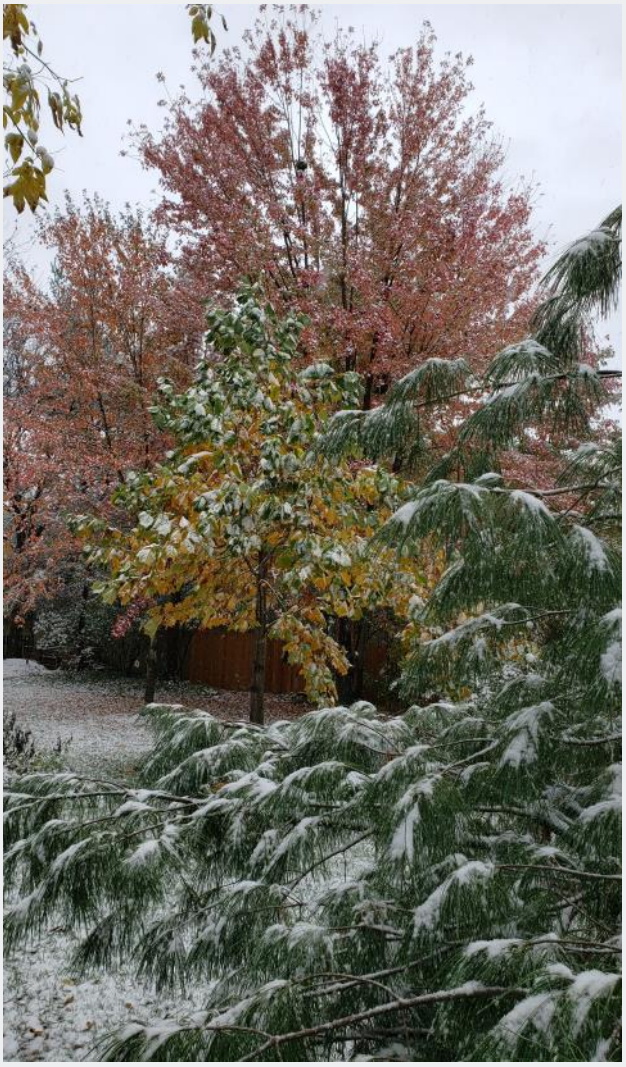
Maybe one benefit of staying at home due to COVID is having more time to get in touch with nature. For example, have your children or grandchildren asked you ***"Why are the colors of the leaves changing?"*** Here is what USDA says about that topic.

Three main factors affect leaf color as the trees begin their annual change each fall: leaf pigments, length of night and weather. The timing of the color change begins as the nights become longer and there is less photosynthesis action happening in the leaves. This lengthening of the night is the largest environmental factor that affects the change; however, temperature, rainfall and nutrients are also contributors.

Three types of pigments are responsible for fall color: carotenoids, anthocyanin and chlorophyll. Carotenoids will produce yellow, orange, and brown colors that you also see in corn, carrots, bananas, and pumpkins. Anthocyanin will produce reds and purples that are also seen in blueberries, cranberries, strawberries, and apples. Chlorophyll is what gives the trees their green color and why the trees leaves are green during the periods of photosynthesis. This chemical reaction is what allows plants to use sunlight to produce sugars for food. Trees in our region store these sugars for food during the period of dormancy, winter.

Carotenoids and chlorophyll are present in the chloroplasts of the leaf cells throughout the growing season while most anthocyanins are produced in the autumn. During the growing season, chlorophyll is produced continuously, but as the length of the night increases, the chlorophyll production will slow, eventually stopping and is destroyed. The carotenoids and anthocyanins are then able to show through producing the color.



Fall color is affected by: leaf pigments, length of night and weather.

Weather can affect autumn color before and during the time the chlorophyll is starting to slow down. Temperature and moisture are the two most influential factors. Several warm sunny days followed by cool, crisp nights bring beautiful color displays as during these days a lot of sugars will be produced, but the cool nights and the gradual closing of the veins prevent the sugars from moving out.

Peak fall color in our area is typically mid to late October. Get out, social distance, and enjoy this beautiful landscaping while it lasts!