Signs of fall senescence

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don't just rely on fall color to tell me the seasons are about to change; there are spell may make for an early

so many other little things to observe that help me make the transition. Gossamer webs floating in the air, the long shadows of a sun falling slowly in the southern sky, walnuts hidden in the grass, and robins flocking in search of crabapples and other fall fruit.

These are the signs of fall to me; they prove mostly comforting but also remind me that I need to get ready for the first frost and inevitable hard freeze, after which there is no turning back. Maybe we will have a brief return to summer, with a warm stretch in November, maybe not.

No matter, the tropical house plants are making their way back into the house where they will take up residence in a sunny window, most will be put on a diet of little water and no food so they can rest a bit through the short days of winter. Orchids sit on my desk in the sun; I'll wait for the emerging sheaths to turn to bloom later in the winter. The holiday cacti and amaryllis will sit in a room that has natural light so they will set their buds accordingly.

But the thing that really steals the show this time of the year is, indeed, what we call fall. The senescence of foliage is a remarkable physiological response that marks part of the seasonal cycle for deciduous plants. Bernd Heinrich, in his book Summer World, discusses the likely evolutionary response to snow and ice load. Trees with broad leaves learned that shedding leaves in fall would reduce the damage that may occur in winter if there was ice and snow. So, over a very long period of time the art of senescence by deciduous trees was perfected to maximize the storage of food, refresh your foliage, and provide a rest up top while continuing to establish a stronger root system below. Plus, all those falling leaves in the fall turned into organic matter which the tree could snack on for the rest of the winter. That's sustainable.

So, I have been waiting for the color to start draining from the leaves... its early October, after

all. But for many in Kentuckiana the recent dry

> (and less colorful) senescence. Drought conditions also make for a faster leaf drop which is a survival mechanism since trees transpire moisture through their foliage. Interestingly, those fall colors are always

there; they are just waiting for the green produced by chlorophyll to drain back into the tree for stored energy during dormancy.

Here's what happens in the seasonal cycle of a tree: during the long days of summer trees are continuously replenishing their supply of chlorophyll, which uses sunlight and carbon dioxide to make food for the tree in the form of carbohydrates. As the days get shorter and the amount of sunlight decreases, trees take what chlorophyll is left and drain it back into the tree for stored energy. As the chlorophyll drains from the leaves the fall color is revealed.

What makes for the rainbow of colors underneath the mask of chlorophyll-green? Pigments called carotenoids (yellow, brown, and orange), anthocyanin (reds and purples), and a combination of the two create the dramatic reds, bronze and bright orange found in sumacs and oaks.

The carotenoid pigments are always present in the leaves, but the anthocyanins are produced later in the summer, triggered by cooler evening temperatures and shorter days. More anthocyanins will be produced if this time period is warm and sunny because it allows for extra sugar production. More sugar means more intense color and more sugar means more sun; so, a late summer with clear sunny days and cool nights means more vibrant fall color. It seems like some of us may be on track for some good fall color if you did get some rain in late summer- we did and we are having clear days and cool nights so I am optimistic that we will see some color. The black gum is showing some red and it's usually the first to turn. But, for now, I'll be watching the robins, squirrels and spiders for my autumn correlation.

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Multi-Purpose CAA is seeking fuel vendors to participate in the Subsidy & Crisis component of the Low-Income Home Energy Assistance Program CITISE Component of the Low-Income Tome Energy Assistance Program (LIHEAP) for the counties of Bullitt, Shelby and Spencer. The Subsidy Program will begin November 3rd, 2025 and run through December 12th, 2025. The CRISIS Program will begin January 6th, 2026 and run until March 27th, 2026 or until funds are expended. Delivery will be required within 18 to 48 hours of notice.

Anyone interested in being placed on the Approved Vendor's List, must complete an application at one of MPCAA's Offices:

Shelbyville – 207 Washington St., Shelbyville, KY 40065 Taylorsville – 44 Creekside Drive, Taylorsville, KY 40071 Shepherdsville – 214 Frank E. Simon Ave., Shepherdsville, KY 40165

> For more information call Laura Perdue @ 502-543-4077 MPCAA is an Equal Opportunity Employer

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- Winners will be announced in a special edition of The Pioneer 4. News on Thursday, Dec. 18, 2025