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Feature Article

Why Do Leaves Change Color?

By Butch Bailey, Extension Specialist

I get this question a lot. One inquisitive little 4rd grader was dogged about it, following me around after a program I'd conducted at his school until his teacher called him back to class. "But I don't understand what the tree gets out of turning the leaves from green to red." Not wanting to stifle a child's curiosity, I did my best to give him thorough, factual answers.

The real answer to this question is that the leaf was always red. Or orange, or yellow, or purple, or whatever color they "change" into in autumn. It's just that during the growing season the leaf is chockfull of chlorophyll, the stuff in the leaf that does the work of converting sunlight into energy, and chlorophyll is green. So green, and there's so much of it, that it washes out those other colors.

Have you ever noticed that while all leaves are green during the growing season, they come in different shades of green? Some trees have leaves that are deep, dark green. While others might have leaves that are light, almost lime green. Part of this is due to the presence of other chemicals, called pigments, which the chlorophyll is covering up. These pigments serve various functions in the leaf. Some pigments, like carotenoids, give leaves an orange or yellow hue. The group of pigments called anthocyanins give leaves a red hue.

In the fall, as the days get shorter, the leaf gets exposed to less and less daylight. This is the signal, along with temperature to a lesser extent, for the tree to begin getting ready for dormancy. The tree pulls as much of the important, rarer nutrients from the leaf as it can so that they aren't lost with the leaf when it falls. Nitrogen is one of the most important, and often most

limiting, so it's no surprise that deciduous plants retrieve as much as possible. Since chlorophyll is full of nitrogen, it's broken down and removed from the leaves, leaving the other pigments behind, showing us their "true colors" all along.

Preferential Tax Treatment from Uncle Sam

By Stephen Dicke, Extension Specialist

When it comes to timber taxes, first and foremost is Uncle Sam's (a.k.a. the Internal Revenue Service) idea that appreciation of timber value is profit. So as timber grows in size and value every year, landowners can claim to make an annual profit even if they rarely make a timber sale. This fact allows forest landowners to deduct forest management expenses annually. Deductions may include property taxes, interest, insurance, travel, education, and a long list of management and maintenance activities. The value of these deductions is based on each person's ordinary income marginal tax rate. Forest landowners may file as a Business and deduct expenses on Schedule C, file as a Farmer on Sch. F, or file as an Investor on Sch. A.

Second, Uncle Sam allows income from timber sales to be reported on Schedule D and receive capital gains treatment. Capital gains are subject to the lowest tax rates, averaging 15% less than ordinary income. In addition, capital gains avoid the 15% self-employment Social Security and Medicare tax. That is a total savings of 30%! Taxes can be further reduced by

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*"To everything
Turn, Turn, Turn
There is a season
Turn, Turn, Turn"*

... Pete Seeger



Fall Foliage at the Jeff Busby State Park, MS

<http://www.natcheztracetravel.com>



Tree Planting can be Expensed on Schedules C or F (photo Brady Self)



Hands on Communication in the Field at a Hardwood Workshop (photo Brady Self)

The Overstory

Preferential Tax Treatment from Uncle Sam (Continued)

deducting timber basis and sales expenses from sale income. Basis in timber is established at the time of acquisition. The amount of basis in the timber account depends on whether the property was inherited, gifted, purchased, traded, planted, or some combo of these. Basis values can range from zero to amounts much higher than current fair market value. Retroactive basis determination is available to landowners if needed.

Third, Uncle Sam allows landowners to expense site preparation, tree planting and other establishment costs. Each year landowners may make a 194(b) election to expense up to \$10,000 in reforestation costs per timber property. Reforestation expenses are reported on Schedule C (Business) or F (Farmer). Investors write in expenses on the front of their 1040 line 26. Uncharacteristically, Uncle Sam is willing to wait to get his money back from future timber sales, hunting leases, and other incomes from the forest.

Communication

Linda W. Garnett, Extension Specialist

Communication: the imparting or exchanging of information or news (Oxford Dictionaries). In a nutshell this is, and always has been, the reason for the establishment in 1914 of the Cooperative Extension Service. It remains the purpose and objective of Extension programs today. What has changed the most over the interim of years is the proliferation in the number of ways in which we are able to communicate knowledge, and the physical and technological means of applying that knowledge. This proliferation is solely due to the innovations of the integrated circuit (1959), the microprocessor (1971), the personal computer (1974), and concurrently - the development of the internet and World Wide Web. In little more than three decades we have gone from postal service, land-line telephone, and personal contact as the major means of communication between Extension personnel and their clientele to a plethora of choices and platforms. We now live and communicate in a digital world using desktops, laptops, notebooks, tablets, smart phones, watches, GPS (Global Positioning Systems), drones, and other innumerable data collection devices. We utilize these devices through the use of websites (professional, commercial, educational, and social) and their derivatives: blogs, downloadable software programs, email, instant messaging, and texting. There are currently over 200 social media websites such as Facebook, Twitter, YouTube, Snapchat, Instagram, LinkedIn, etc. One website lists 35 top forestry software applications.

In contrast to the above picture, according to 2011 Current Population Survey Data (<http://www.governing.com/gov-data/internet-usage-by-state.html>), in Mississippi 41.0% of the population still has no internet access either at home or elsewhere. A further breakdown shows 8.7% have access only at work or elsewhere; 21.8% have access at home only; 19.9% have multiple access and multiple devices; and 8.6% have only one device but multiple access. Rural areas are the least likely to have internet access, and forestry by its very nature is a rural industry. Mississippi's land area is 64.8% forested, and 77% of that is privately owned (www.mifi.ms.gov/documents/MIFI_SE_13_14.pdf). A logical deduction might be that Forestry Extension clientele, through no fault of their own, may be at a disadvantage in accessing all of the resources and knowledge otherwise available to them. Perhaps we can help bridge this communication/technology gap through county Extension offices.



Mississippi Timber Price Report

3rd Quarter 2016



The Mississippi Timber Price Report (MTPR) is a quarterly survey of stumpage timber prices in Mississippi. It is developed to provide a picture of timber market activity. The state average prices for common forest products are listed. Values given are offered as a guide to help individuals assess the fair market value of their timber. The average price should not be applied as the exact value for a particular tract. This report is updated quarterly and available at MSUCares.com/forestry, or by contacting your local county Extension office.

QUARTER'S PRICES: 3rd Quarter 2016 Stumpage Prices/Ton (Source: Timber-Mart South)

Pine Sawtimber - \$24 Pine Chip-N-Saw - \$15, Pine Pulpwood - \$8,
Mixed Hardwood Sawtimber - \$43, Hardwood Pulpwood - \$7

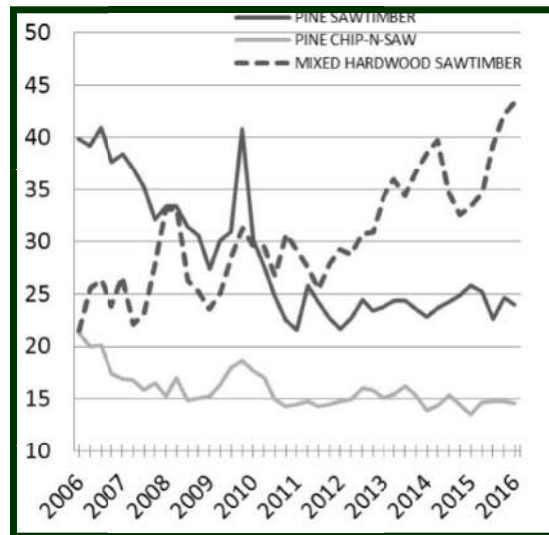
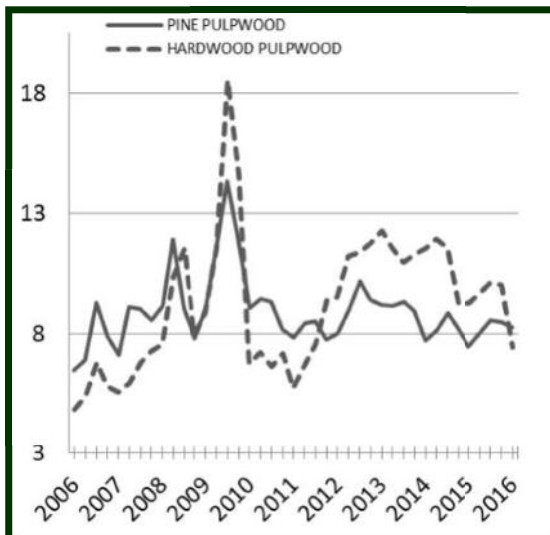
NOTE: Prices vary widely across the State; thus, average prices presented here may not reflect your local market.

WHAT'S MOVING PRICES - TRENDS:

Stumpage price for mixed hardwood sawtimber increased during the 3rd quarter, while pine sawtimber and chip-n-saw and pine and hardwood pulpwood decreased.
Stumpage prices for hardwood sawtimber increased by 3.1% and pine sawtimber decreased by 2.6%. Pine chip-n-saw decreased slightly by 0.8%, pine pulpwood decreased by 2.8%, and hardwood pulpwood decreased sharply by 26.9% from the previous quarter.

TIME SERIES:

**Average Mississippi Pine and Hardwood Stumpage Prices
1st Quarter 2006 through 3rd Quarter 2016
(All prices in \$/TON)**



Timber-Mart South (TMS), Inc. has more detailed data available by subscription that contains values for other timber products not included in this report. TMS is compiled and produced at the Center for Forest Business, Warnell School of Forest Resources, University of Georgia, under contract with the Frank W. Norris Foundation, a non-profit corporation serving the forest products industry. See <http://WWW.TMART-SOUTH.COM> for information on subscriptions.

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Please don't forget to check out our Blog at www.blogs.msucare.com/forestry and sign up for email notices!

Delta Hardwood Notes

Problems with management of hardwood plantations (Part 5)

By Brady Self, Extension Specialist

During the last four issues of The Overstory, problems and concerns associated with hardwood plantations and their development have been discussed. This leaves the question of, “What do I do in these stands?” Hardwood management requires different techniques than that of pines. Consequently, in order to retain log quality, managers must use different strategies.

Option 1. While most people desire to manipulate plantations from both wildlife and timber standpoints, often the best management strategy is to leave them alone. Familiarity with thinning in pines and impatience often influences owners to work in these stands too early. Care should be taken and the appropriateness of early management should be assessed. If these stands are thinned too early, branches may be “locked in” and future wood quality reduced.

Option 2. Under the right stand (and market) conditions, thinning hardwood plantations is an option. However, the familiar “row thin” often prescribed in pine plantations should not be employed across the plantation. Obviously some rows will be removed for equipment access; however, their numbers should be minimal and all other removals should be carefully chosen based on health, spacing, and form characteristics. A professional forester experienced in hardwood silviculture should perform this work.

Option 3. In stands with very low survival, or severely degraded stem quality, the best option may be to clearcut and start over. In these situations, a determination should be made regarding whether the stand can be naturally regenerated. If it can, preparatory work for regeneration can start. If natural regeneration is not possible, consider replanting using higher seedling densities with a hardwood mixture that includes non-oaks.



Water oak plantation that has been given ample time to start self-pruning
(Photo: Dr. Brady Self)



Young cherrybark oak plantation with low survival that will result in extremely poor form boles at maturity
(photo: Mr. Cody Rainer)

UPCOMING EVENTS: November 2016

- 11/07/2016: Alternative Sources of Forest Income Short Course**
 Union County Extension Office, New Albany, MS --- [Click HERE for Brochure](#)
- 11/18/2016 Proactive Emerald Ash Borer Management: Maintaining Desirable Forest Landscapes, Starkville, MS** --- [Click HERE for Brochure](#)

Do you have any questions about trees and forests?
If so, contact Linda Garnett
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and we'll include it in the next Overstory.



Tishomingo State Park, Mississippi
 (www.stateparks.com)

Other Locations for Forestry Extension Information

MSUCares.com (Forestry-Forest Products/events)
www.facebook.com/MississippiStateUniversityExtensionForestry
www.blogs.msucare.com/forestry, OR, twitter.com/MSUExtForestry

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MSU-ES Region Map

