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From the Coordinator's Desk

by James Henderson, Extension Specialist

Beginning with this issue of *The Overstory*, you will notice something new. The Mississippi Timber Price Report will now be included in the newsletter. In addition, the price report will be in a new format. Starting with the third quarter of 2013, Timber-Mart South agreed to make their quarterly price data available to Mississippi State University. That information is used by MSU Extension faculty to develop a timber price report that will be published quarterly in this newsletter and posted on the Mississippi State University Extension Service website. An archive of price reports is available at MSUCares.com/forestry/prices and all future quarterly reports will be added to that collection.

Timber price reports are useful but never should be used to value timber for the purposes of a timber sale. Certain factors may cause a particular tract of timber to be valued higher or lower. For example, a tract that has a high timber volume per acre and can be logged during wet weather may bring a price per unit higher than what a timber price report would indicate. On the other hand, a tract with less volume at a greater distance from the buyer's mill may bring less. Additional factors that affect timber values are timber quality, tract size, type of product to be made from the timber, access to the tract and many others. While the prices contained in the Mississippi Timber Price Report are a good reference for landowners who wish to market timber, individuals are advised to have their timber evaluated by a professional forester before making a timber sale. To find a registered forester visit the Mississippi Board of Registration for Foresters website cfr.msstate.edu/borf/.



Wood chips used in the production of some biomass products

Feature Article

Biomass: is it a Realistic Source of Bioenergy and Biofuels

by R.J. Rousseau, Extension Specialist

Since the 1970s, the 50 million dollar question concerning renewable energy has been "Is it even possible, and if so, will it fit into our current energy system". Today, the focus of renewable energy and fuel production is three-fold in that it needs to be energy dense, economically viable, and environmentally friendlier in the replacement of the dwindling supply of fossil fuels. There is no doubt that renewables face a daunting task, which includes not only the replacement of fossil fuels that possess an extremely high energy source, but the need to be economically viable and environmentally superior. Biomass is one source of renewable energy that includes hydroelectric, solar, and wind. However, biomass is the only source that could be used for both electrical and fuel production. Today, co-generation of wood in coal plants provides a cleaner feedstock helping to reduce carbon emissions in electrical production. Biomass is also being used in the production of bio-crude. KiOR in Columbus, MS is producing a bio-crude from loblolly pine through a pyrolysis process that capitalizes on the lignin content of the trees. The bio-crude is placed into a petro-chemical plant and transformed into jet fuel, green gasoline, and other fuel type products. Hybrid poplars are being used to produce ethanol by ZeaChem Inc. in the Pacific Northwest. This process is different from KiOR in that it uses both cellulose as well as lignin for the production of ethanol. While these two examples are leading the efforts in production of transportation fuel from biomass, the overall progress in the more advanced 2nd-generation biofuels process has been rather slow.

The one area of biomass that has seen exceptional growth has been the pellet market. This recent increase in the pellet market results from legislation in Europe that greatly limits the use of coal for electrical and home heating. Recent estimates show a dramatic increase in pellet

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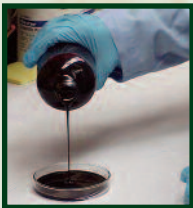
<https://twitter.com/MSUExtForestry>

*What is a weed?
A plant whose
virtues have
never been
discovered.*

...Ralph Waldo Emerson



Pine "biomass bundles"



Bio-crude
from
Biomass



One use for specific types of
biomass is wood pellets
used for fuel



Poor pruning characteristics
typical of incentive program
plantings

Feature Article (Continued)

production throughout the southern United States, as new pellet plant construction has become nearly common place, with consumption rivaling that of large pulp and paper mills (i.e. 1 million tons/year). Prior to the 2010, the feedstock of choice for pellet production was dry secondary wood sources as this material was considered waste. However, with the marked tonnage increase for pellets, roundwood has become the most obvious choice. The problem of using this type of raw material is the added expense of drying the wood. Most pellet plants are quick to point out that their feedstock consists of wood that has either very low or no market value. This includes trees that exhibit stems that are poorly formed, excessively knotty, crooked, and hollow as well as large tops and limbs, in-woods chipping, commercial thinnings, and mill residues and waste. Realistically, the market will determine what types of wood will form the bulk of the pellet market. The woody biomass sources that have been identified in the past include:

- a. Thinning operations of either natural stands or plantations
- b. Timber stand improvement (TSI)
- c. Dedicated energy plantations
- d. Final harvests (small trees, logging residue, large limbs, and tops)

It is expected that a change in the Renewable Fuel Standards will greatly restrict the research of 2nd-generation biofuels thus further delaying the production that will be needed for the future of the United States. While no one is sure what fuels will be needed in the future, the ability to have options provides us with a greater base to obtain our national goals.

Biofuels and the Forest Landowner

by John Kushla, Extension Specialist

Mississippi is blessed with a strong forest industry and a diverse wood products market. The markets for biofuels vary across the state. There is a charcoal plant in Glen, and a wood pellet mill in Amory. A plant in Columbus is distilling wood chemicals to sell to petroleum refineries, and Mississippi Power is buying wood for electric generation in southern Mississippi. As bioenergy develops, markets will grow as well.

What strategy should forest landowners use with regard to growing biofuels? Biofuels for bioenergy generation is a developing market. Currently, the raw material for biofuels are wood waste (sawdust or mill scraps) or green chips. Both are low value products, and stumpage for biofuels will command a low price, much as for pulpwood.

The driving factor behind our present forest industry is for longer rotations to grow the higher value sawlogs, poles, and veneer. A forest landowner planning to grow these higher value products will be well positioned to take advantage of local markets for biofuels. The bioenergy market will most likely compete with pulpwood for the smaller wood that will be chipped. This includes thinning in pine stands or timber stand improvement cuts in hardwoods. Therefore, growing for the longer rotation will give the forest landowner the most flexibility toward the developing bioenergy market.

As bioenergy markets develop, greater competition for raw materials may increase stumpage for biofuels. By the time a pine stand planted now is ready for its first thinning, the landowner may have the option to clearcut the timber if pulpwood prices relative to sawtimber are much higher. Overall, this points to a very important economic fact. Diversification of forest products is good for business, and good for the forest landowner.

Delta Hardwood Notes

by Brady Self, Extension Specialist

With the advent of cost share funding and recognition of the important functions and values of bottomland ecosystems by federal, state, and private entities, interest in afforestation of retired or marginal agricultural areas increased dramatically during the 1990s. By 2004, approximately 370,000 acres of former Delta agricultural fields had been afforested using various species of hardwoods. The practice, per program guidelines, was to space seedlings on 12 foot by 12 foot centers (302 trees per acre). As these plantations aged, stem quality issues arising from low planting densities became apparent. A consensus among hardwood foresters and researchers is that few trees in these plantations will ever develop into quality sawtimber. While many of these timber stands may be useful in wildlife management efforts, potential value from a timber standpoint is virtually nonexistent. Currently, there is little to no demand for wood being produced in these young forests. One of the most intriguing and promising management concepts for these stands is that of biomass production. Obviously, future demand for this wood hinges on the development and installation of biomass facilities utilizing local wood. As pellet mills and cellulosic fuel facilities with procurement zones extending throughout the Delta are constructed, forest landowners can expect market development in the biomass arena for their hardwood plantations.



Mississippi Timber Price Report



3rd Quarter, 2013

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 2013 Stumpage Prices/Ton (Source: Timber-Mart South)

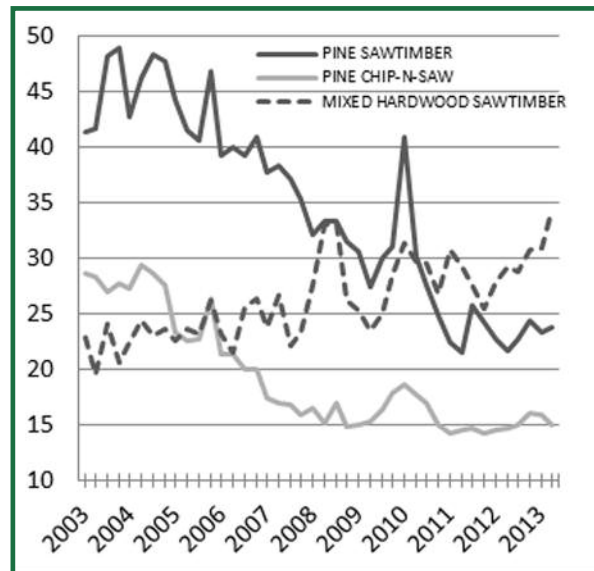
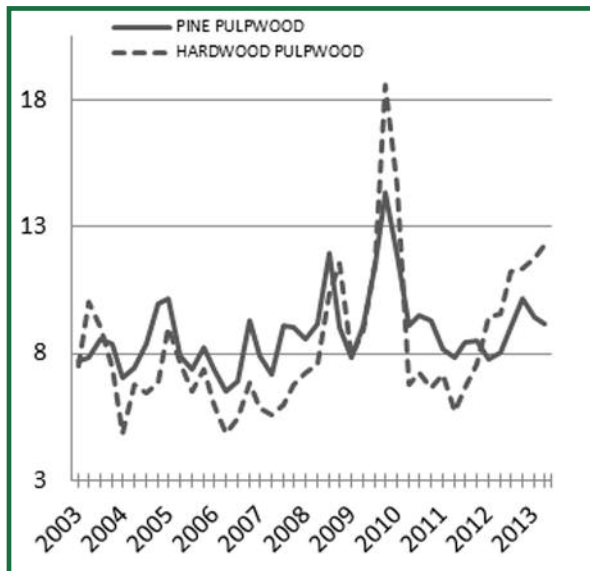
Pine Sawtimber - \$24 Pine Chip-N-Saw - \$15 Pine Pulpwood - \$9
 Mixed Hardwood Sawtimber - \$34 Hardwood Pulpwood - \$12

WHAT'S MOVING PRICES - TRENDS:

Product prices for most categories increased during the 3rd quarter with the exception of pine chip-n-saw and pulpwood. Stumpage prices increased from the previous quarter by 11.2% for mixed hardwood sawtimber, by 1.8% for pine sawtimber, and by 4.6% for hardwood pulpwood. Pine chip-n-saw and pulpwood fell by 5.2% and 2.7% respectively.

TIME SERIES:

Average Mississippi Pine and Hardwood Stumpage Prices
 3rd Quarter 2003 to 3rd Quarter 2013
 (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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New Efforts in Eastern Cottonwood Biomass Production through Breeding and Clonal Refinement

By Jason W. Cromer, R.J. Rousseau, and B.L. Herrin (Graduate Student, Extension Specialist, and Research Associate respectively)

Increased emphasis on biomass production for biofuel and bioenergy has Mississippi State working in collaboration with FuturaGene. The goal of the partnership is to develop elite eastern cottonwood clones that have specific traits designed for specialized products in the field of bioenergy and biofuels. Current focus is the production of control-pollinated genotypes that must initially exhibit rapid growth and disease resistance. Following identification of the individuals that show these two traits, the selections are vegetatively reproduced as clones. Clonal production allows us to capture the total amount of genetic variation shown by the individual. Once the individual is cloned we examine each one for rooting characteristics since the planting stock will be unrooted cuttings. These clones then undergo testing for a variety of traits that we desire based on the final product. For high energy content, selections would possess higher wood density and lower moisture content as well as low amounts of ash. These traits would be an excellent set combination for the production of wood pellets that could be used in the generation of electricity. In other cases, we may select clones that have high cellulose content for ethanol production.

Currently, the focus remains on control pollinations to produce new genotypes, and in a short period of time, we expect to generate tens of thousands of new clones. However, when we begin

combining specific traits such as height, volume, percent lignin, etc., the number of selections will probably be less than ten. The difficulty arises when combining traits and those that may be counterproductive to other traits. When this happens we may find that we will need to evaluate hundreds of thousands of clones that combine traits needed. While this work is tedious and somewhat elaborate it can still be accomplished due to the large number of genotypes produced from breeding and the ease of vegetative production of clones of eastern cottonwood.



Seed production from control-pollinated eastern cottonwood

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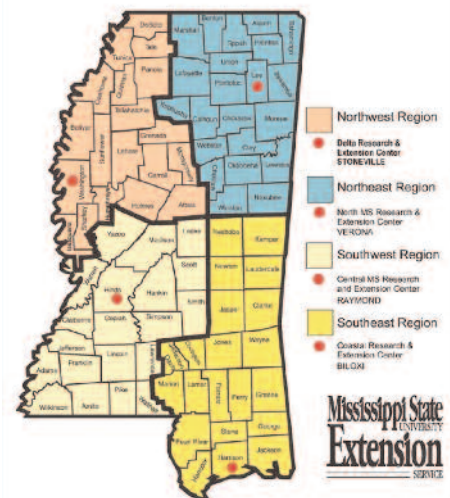
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