Louisiana Forest Products Laboratory

NEWSLETTER

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The Louisiana Forest Products Laboratory Is Up And Running

Many hours of hard work by leaders in the forest products industry, State Legislature and LSU Agricultural Center resulted in funding for establishing the Louisiana Forest Products Laboratory (LFPL) in 1992. Since then, the Laboratory has grown from one employee to a staff of seven on the LSU Campus and one on the Louisiana Tech Campus. In addition, a number of other professionals at the universities are closely associated. The recognized need for this new laboratory was due to the State's potential of adding $3.4 billion to the revenue flow and greatly increasing employment. This potential exists through increasing the amount of value added to our primary wood products prior to their leaving the state. The total value-added needs only to be the average of that in states surrounding Louisiana.

Activities underway at the LFPL involve providing information, developing workshops, making plant visits and providing contacts. In addition, work is being done in specific areas to provide new information to help expand the secondary wood products sector. These program areas in the LFPL include safety and environmental issues headed up by Niels de Hoop, Assistant Professor; wood product properties and international issues headed by Ramsay Smith, Program Leader and Professor; and forest products marketing headed by Rich Vlosky, Assistant Professor. Rado Gazo, a Post Doctorate, is working in the area of processing and plant analysis software. Susan Kleit, a Research Associate, is working in residue analysis and location using the geographic information system (GIS). All are supported by additional staff and graduate students. Mark Gibson, working in wood quality at Louisiana Tech, and his associates are detailed in a following article.

The LFPL staff is here to serve you. Please give them a call with any questions, comments or ideas. All can be reached by phoning (504) 388-4255 in Baton Rouge or (318) 257-4985 in Ruston.

Helping Louisiana Producers Promote Their Products

by Rich Vlosky

The narrow geographic marketing scope for Louisiana wood products can be attributed in large part to marketing activities. Across a broad spectrum they are virtually non-existent in the secondary wood products industry. Only 16 percent of respondent companies in one study had any marketing activities budget. Most companies surveyed (87.5%) engage in self-promotion as the primary means to promote their products. Because self-promotion prevails, the primary promotional method for respondent company products is word-of-mouth. The use of other modes of promotion, either printed media or other forms of outside support, is minimal.

The marketing group at the Louisiana Forest Products Laboratory is currently developing a computer based promotional tool for the secondary wood product industry. The objectives are: 1) to build an electronic catalog of products and services offered by Louisiana secondary wood products manufacturers and 2) use the electronic catalog as a mechanism to disseminate product information to potential purchasers of Louisiana secondary wood products, locally, nationally and internationally.

A prototype containing furniture products for 20 Louisiana artisans has been completed. This project could have a profound impact on this industry sector by creating an opportunity for small, rural companies (in terms of marketing promotion and strategy) to conduct promotional activities across a wide geographic scope. Participating companies would not incur costs or be required to have marketing expertise. The ability of these firms to engage in promotional activities can stimulate

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Louisiana State University
Agricultural Center
Louisiana Agricultural Experiment Station

Louisiana Forest Products Laboratory Comments

by Ramsay Smith

It's been a busy but rewarding year at the Louisiana Forest Products Laboratory. We now have three faculty plus five additional staff and research associates who have begun numerous new projects. One of these is this newsletter designed to help keep you informed about the Laboratory, industry activities, new information available and workshops and meetings of interest. Most importantly, we also hope to enhance communication between you and the Laboratory staff so we can learn more about your needs to better address them.

Louisiana Forest Products Lab faculty from left, Dr. W. Ramsay Smith, Program Leader; Dr. Victor Harding, Assistant Specialist, Cooperative Extension; Dr. Rich Vlosky, Assistant Professor; and Dr. Niels de Hoop, Assistant Professor. (Ag Center photo by John Wozniak)

Louisiana Forest Products Lab staff seated from left, JoAnn Doucet, Ag Lab Assistant; Pat Lefeaux, Secretary; standing from left, Susan Kleit, Research Associate; Dr. Rado Gazo, Post Doctorate Researcher. (Ag Center photo by John Wozniak)

Our primary mission is to help enhance the wise use of our forest resources by helping Louisiana forest product industries. Our focus is to provide information to help expand production of value-added products and work with companies to help them become more competitive in the marketplace. As these are accomplished, expansion of this industry will create greater employment opportunities in the communities and, therefore, improve the economic conditions in these communities. This will also create more in-state market opportunities for the primary industries producing lumber and veneer.

For us to be able to accomplish this mission, we need to produce the right information and have it available in a format that is usable. This is why it is so important to hear from you. The surveys we send out provide us information on how you are doing and the issues we should be addressing. When we provide information you request, we need to hear from you how well it suits your needs or, just as importantly, if it didn't cover your needs and why. That way we can do a better job next time.

I am excited about our staff and their abilities. They have a lot of energy and ample technical expertise - all available to you. We are trying to get out and visit as many facilities as possible, so please let us know if you would like us to come by. This type of interaction also helps us learn more about what you want from us so we can better provide it.

This first newsletter contains brief information on some of the projects we have undertaken. Please take a look and see what you think. I am very much looking forward to hearing from you and receiving comments on how we are doing.

LFPL at Louisiana Tech University

by Mark Gibson

The north Louisiana location of the Louisiana Forest Products Laboratory is housed in the Forestry Laboratory Building on the South Campus (Farm Campus) of Louisiana Tech University in Ruston. Funding for the Louisiana Tech Lab is arranged through a research project grant from the LSU Ag Center. This funding comprises 10 percent of the overall state allocation for the Lab.

Personnel associated with the Louisiana Tech Lab include Dr. G. H. Weaver, Dr. Mark D. Gibson and Dr. George A. Grozdits. Dr. Weaver, Director of the School of Forestry, is the project director and has a background in forest economics and administration. Dr. Gibson is an Associate Professor in wood utilization. His expertise and interests are in primary and secondary wood processing, microscopy and wood identification, wood anatomy-properties-product performance relationships and silviculture-wood quality relationships. Dr. Grozdits, is a full-time Research Associate. His expertise includes adhesives, basic wood products (including lignin, veneer, plywood, fiberboard and oak flooring), wood chemistry and biomass (dry bagasse) technology.

Current projects include attempting to identify and quantify the effects of silvicultural treatments (spacing, fertilization, thinning, pruning, etc.) on the wood quality of hardwoods and plantation-grown southern pines. We are specifically looking at ways in which changes in wood quality can affect both primary and secondary wood products manufacturing processes.

The Ruston branch of the Laboratory welcomes any comments or suggestions the industry may have concerning our activities. Please call on us at any time and stop by to look over our facilities if you are in our area.

Direct industry technical assistance includes:

- assisted in evaluation and recommendation of pallet perfomance,
- verified calculations for optimum utilization of low-grade lumber for stake production,
- recommended utilization strategies for pecan orchard by-products,
- visited numerous primary and secondary forest products manufacturing facilities for discussions of ways the Lab might be of assistance in their operations,
- located strip flooring manufacturers willing to process mesquite for a major resin manufacturer,
- assisted with a production problem involving longitudinal warping of plywood produced with a high moisture process for a major plywood manufacturer,
- provided information regarding utilization of oak and mechanical production of oak chips to a company interested in flavoring alcoholic beverages,
- assisted with the preparation of a proposal to use Louisiana bagasse fiber for the production of phenolic resins and low-BTU gas production,
- provided information regarding the chemical extraction of logging residues for the production of various products,
- provided information regarding the utilization of urban tree stump removals for mulch and extraction of usable chemicals,
- investigated sources of funding for utilization of pecan orchard residues for various products,
- suggested solutions for a wooden pallet fungal contamination problem and
- provided advice on wood technology and wood products availability, use and performance for the general public.

LFPL Faculty and staff at Louisiana Tech University from left, Dr. Mark Gibson, Associate Professor; Dr. G. H. Weaver, Director of the School of Forestry; and Dr. George Grozdits, Research Associate.

Louisiana Forest Products Laboratory

SERBEP Study Yields Unexpected Results

by Susan Kleit

Agriculture and forestry are the second largest employers in the state of Louisiana. Natural by-products of these industries are biomass waste in the form of bark, wood chips, sawdust, cotton gin trash, rice hulls and sugar bagasse. Disposing of these wastes can pose environmental problems for air and water. One popular waste management solution is to use them for fuel. To measure their fuel and other use potential, the Louisiana Forest Products Laboratory conducted a study to determine quantities generated in Louisiana from primary and secondary wood processors, sugarcane processors, cotton ginners and rice processors. The study was done for the Southeastern Regional Biomass Energy Program (SERBEP). The original intent of the study was to measure the use of biomass for energy. Surprisingly, the study revealed that while some firms use residues for their own boilers or sell it to others for fuel, there is still a considerable amount of unused wood residue. According to the Lab's estimates based on the survey responses, there are approximately 6.2 million tons of used and unused wood residue throughout the state. Of that amount, approximately 125,000 tons go unutilized each year.

There are many reasons for the preponderance of wood waste, including the cost of competing energy sources, lack of marketing innovation and the economies of scale. The Lab seeks to facilitate the reduction of this waste. To expedite this process, two tools have been developed. The first is through the use of a geographic information system (GIS). GIS maps all the primary producer sites claiming to produce and/or consume wood waste. In addition, secondary processors making the same claim are mapped by parish. These data are layered with timber supply data from the U.S. Forest Service. In addition to the GIS, a directory of biomass sites was developed for public distribution. This directory is geared to bridge buyers and sellers of biomass by listing the site, contact, telephone number and the type and amounts of biomass produced, used and sold.

The directory is available free of charge. To obtain a copy, or to make use of the GIS for free, please call:

Niels de Hoop (504) 388-4242 or Susan Kleit (504) 388-4133.

Knowing Your Accidents

by Niels de Hoop

All aspects of the forest products industry, from logging to finishing, is fraught with hazards to workers. High accident rates lower employee morale, increase employee turnover, reduce the number of experienced workers, reduce efficiency and increase costs. Businesses with good, aggressive safety programs are generally more profitable in spite of the extra cost and time put into safety management and loss prevention.

Good information is needed for a successful safety program. If you know the causes of the most common accidents and the worst accidents, you know where to concentrate your safety efforts. Gathering good information is what we've been doing at the Lab, along with Drs. John Pine (LSU Public Administration Institute) and Brian Marx (LSU Department of Experimental Statistics). We've looked at logging accident data in Louisiana and found lots of interesting tidbits of information.

Here are some of the most significant.

1. As logging gets more automated, accident rates go down, but the accidents get more serious and costly.
2. The newest employees have the most accidents.
3. Vehicle accidents are a significant factor.
4. Many accidents are very simple, such as slipping and falling.

The results of this study, along with the Lab's knowledge of OSHA regulations, is being used as introductory material in logging safety workshops conducted by the Louisiana Forestry Association. Over 2,350 loggers have attended these workshops.

With the help of the Lab's research associate Susan Kleit, the team is now looking at accident data for the secondary forest products industry. With this information and resulting implementation of our work in this area, we would like to determine how workers' compensation rates may be lowered.

For more information please call Niels de Hoop at (504) 388-4242.

Software for the Rough Mill

by Rado Gazo

A computer software program for both crosscut-first and rip-first rough mill production systems was developed with Dr. Philip Steele at Mississippi State University. This computer program is better known as RAM which stands for Rough Mill Analysis Model. It can be used to design new rough mill operations or model existing operations. It also helps to observe influences of design changes in the operation. Changes may include material grade and mix, cutting order part sizes and volume or number of machines. RAM can also examine changes in plant layout, processing and handling times. As changes take place, effects on yield, throughput, processing time and machine utilization can be determined.

An IBM PC or compatible computer is needed to run this software. The user of the program does not need to have programming and simulation skills since it is designed for easy use. The program also allows various rough mill layouts and production scenarios to be examined. The RAM contains a database of digitized red oak boards and a program simulating cutup of these boards to base its analysis on. In addition, the grade mix may consist of a single grade or any mix of the six grades. It is also possible to use randomly sampled lumber from a previous run or to use a new random sample of lumber. This insures that any difference between simulation runs is caused by changes in input parameters and/or changes in the system rather than by variation between the boards. Quality of produced parts can be clear two face, clear one face or sound two face. The user can enter a feed rate for the unstacker, a number of parallel machines for each operation, transportation times, machine processing times, surge deck capacity for each machine and sorting operation times.

The RAM was used on existing crosscut-first and rip-first rough mills. Results from these tests proved that RAM closely describes yield, processing time and machine utilization of these existing rough mills, which makes it valid for examining changes.

In the next issue we will discuss the use of the RAM for determining benefits of sorting lumber by grade prior to processing in the rough mill. For more information about this program call Rado Gazo at (504) 388-6432.

Two Computer Programs Available

A computer model was developed by Randal Beasley and Vic Harding which will allow a shop owner or manager to perform equipment and employee evaluations. All evaluations are based on best use of time which is dependent on type of equipment used and number of employees. This software also allows the manager to estimate extra machinery and employees that would be required for hypothetical increases in production or effects on production when a better piece of equipment is used. Randal is currently finishing his Masters degree in Industrial and Systems Manufacturing and Vic is our Wood Products Specialist in Cooperative Extension.

RIP-X is another piece of computer software developed by Vic to determine the best grade mix of lumber to use for a particular cutting order. The program "cuts up" lumber from different grades stored in the program and determines the yield from each. It then compares the costs of each grade and combines with the yield to provide the lowest cost grade mix of lumber which will produce the cutting order. The output lists which parts to cut from each grade, as well as a summary of the costs needed to produce the cutting order. This program, therefore, determines the most efficient grades for your cutting bill. To use either program or for more information, call Vic Harding at (504) 388-4087.

Right Workshop For You

Based on suggestions from a recent survey of Louisiana secondary manufacturers, we have put together the following list of workshops that may be offered. If you are interested in any of these topics, we would like to hear from you. If there is sufficient interest in any particular workshop, we will present it at a mutually convenient location. Contact Rado Gazo or Vic Harding at (504) 388-4255.

1. **Ways To Expand Your Business** (business plan, financing, shop layout)
2. **Types Of Equipment** (use of right tool for the job, safety)
3. **Wood Finishing** (surface preparation, types of finishes, application methods)
4. **Wood Identification**
5. **Wood Drying**
6. **Joint Construction** (types, use, comparison, construction)
7. **Cost Cutting** (controlling costs in maufacturing)
8. **Computer Education** (select hardware and software that suits your needs, demonstration of selected programs)

Calendar of Events And Workshops

May 22 **Hardwood Lumber Grading Workshop**; LSU School of Forestry, Wildlife and Fisheries, Room 228, Baton Rouge, LA. Cost - $60 (includes lunch, lumber measuring sticks and grading books). Registration is essential! For more information call Vic Harding at (504) 388-4087.

May 23-24 ***Managing Forests For Water Quality***; Holiday Inn, Alexandria, LA. For additional information call Dr. Stanley B. Carpenter at (504) 388-4131.

May 24-27 **Mid-South Section of the Forest Products Society**; *Partnering for Quality: Competitive Advantage Through Closer Buyer/ Supplier Relationships*, Diboll, Texas. For more information call the Louisiana Forest Products Laboratory at (504) 388-4255.

May-June **Louisiana Furnishings Industry Association** (LFIA) holds a monthly meeting at different locations around the state. If you are interested call LFIA at (504) 386-0471 for location and time.

Helping Producers Promote Products

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demand for Louisiana wood products. Increased demand often translates into company expansion and increased employment expansion. Community and regional economic growth can ultimately be stimulated, an attractive proposition for the rural communities in which most of these companies reside.

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Louisiana State University Agricultural Center provides equal opportunities in programs and employment.

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