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## In This Issue

Lumber Market News .....	1
Hardwood Lumber Price Trends—Green .....	2
Hardwood Lumber Price Trends—Kiln Dried.....	2
Hardwood Lumber Market History ....	3
Hardwood Log Bucking Tips .....	4
Do You Know Your True Costs? .....	4
Controlling Humidity Helps Helps Increase The Bottom Line ...	5
Nebraska Forestry Industry Spotlight .	6
The Trading Post.....	7
Timber Sales.....	8

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## Lumber Market

U.S. housing starts fell in December 14.2% from November, and 38.2% from December, 2006.



### HARDWOODS

**Northern.** The pricing climate is competitive for species and grades key to this region. In particular, the common grades of Soft Maple are being pressured lower for both green and KD stocks. Sel and Btr Red Oak is also facing limited demand and stiff price resistance. However, log decks are low across much of the territory; along with conscious efforts by area mills to reduce production, the volume of green lumber entering the marketplace is down and susceptible to further reductions. Consequently, supplies are tight for many green lumber items, keeping prices firm despite challenging markets for KD stock.

**Southern.** The marketplace remains competitive, but the rate of orders and shipments has improved recently. However, the increase has been driven by inventory replacement after buyers allowed supplies to work down for year-end. Consequently, most expect the largest flurry of activity to settle down until a significant turn in business or supplies occurs.

**Appalachian.** Contacts report an uptick in orders and shipments the past few weeks. Though increased activity is attributed to inventory repositioning, which is not uncommon at the first of the year, it is a relief to mills and resellers faced with cash flow needs and full warehouses. Many lumber items remain oversupplied, particularly #1C Cherry and Soft Maple, keeping prices pressured lower. Markets for industrial timbers and ties remain solid and are limiting the value of #2C lumber entering the market.

(Source: Condensed from *Hardwood Market Report*, January 19, 2008. For more information or to subscribe to *Hardwood Market Report*, call 901-767-9216, email: hmr@hmr.com, website: www.hmr.com)

The Nebraska Forest Service publishes *Timber Talk* four times annually (September 1, November 1, February 1, and June 1). The purpose of the newsletter is to serve and promote the forest industry of Nebraska. All questions and correspondence concerning *Timber Talk* should be directed to: Dennis M. Adams, *Timber Talk* Editor, Nebraska Forest Service, University of Nebraska, 109 Plant Industry Building, P.O. Box 830815, Lincoln, NE 68583-0815. Phone (402) 472-5822, FAX (402) 472-2964. E-mail: dadams2@unl.edu. *Timber Talk* is partially supported by University of Nebraska–Lincoln Extension funding.

## Hardwood Lumber Price Trends—Green

Species	FAS				#1C				#2A			
	3/07	6/07	9/07	12/07	3/07	6/07	9/07	12/07	3/07	6/07	9/07	12/07
Ash	600	600	600	600	440	440	430	430	315	315	305	305
Basswood	705	705	695	695	375	375	365	365	210	210	205	205
Cottonwood	600	600	600	600	400	400	400	400	220	220	220	220
Cherry	2350	2290	2290	2290	1335	1230	1230	1230	655	640	640	640
Elm (soft grey)	635	635	635	635	420	420	420	420	235	235	235	210
Hackberry	475	475	475	475	455	455	455	455	265	265	265	265
Hickory	755	745	735	735	660	660	640	610	450	450	425	425
Soft Maple (UNSD)	1185	1170	1130	1130	750	675	600	600	380	380	320	320
Red Oak	945	945	945	945	640	630	630	630	500	500	500	500
White Oak	1070	1090	1105	1105	610	610	620	620	400	400	400	400
Walnut	2100	2180	2180	2180	1210	1300	1300	1300	885	940	940	940

Note: Hardwood prices quoted in dollars per MBF, average market prices FOB mill, truckload and greater quantities, 4/4, rough, green, random widths and lengths graded in accordance with NHLA rules. Prices for ash, basswood, elm, soft maple, red oak and white oak from Northern Hardwoods listings. Prices for cottonwood and hackberry from Southern Hardwoods listings. Prices for cherry, hickory and walnut (steam treated) from Appalachian Hardwoods listings. (Source: *Hardwood Market Report Lumber News Letter*, last issue of month indicated. To subscribe to Hardwood Market Report call (901) 767-9126, email: hmr@hmr.com, website: www.hmr.com.)

## Hardwood Lumber Price Trends—Kiln Dried

Species	FAS				#1C				#2A			
	3/07	6/07	9/07	12/07	3/07	6/07	9/07	12/07	3/07	6/07	9/07	12/07
Ash	900	900	900	890	665	665	650	650	580	560	560	560
Basswood	990	990	990	990	605	605	605	605	395	395	395	395
Cottonwood	755	755	755	755	520	500	520	520	—	—	—	—
Cherry	3000	3000	3000	2985	1625	1550	1010	1465	1010	1000	985	960
Elm (soft grey)	—	—	—	—	—	—	—	—	—	—	—	—
Hackberry	—	—	—	—	—	—	—	—	—	—	—	—
Hickory	1260	1230	1200	1185	965	965	920	900	830	880	810	790
Soft Maple (UNSD)	1650	1635	1635	1635	950	900	890	870	570	540	540	540
Red Oak	1540	1540	1500	1435	990	990	990	990	760	760	760	760
White Oak	1670	1695	1720	1720	935	945	980	980	725	725	725	725
Walnut	2765	2885	2905	2905	1785	1860	1875	1875	1475	1540	1555	1555

Note: Kiln dried prices in dollars per MBF, FOB mill, is an estimate of predominant prices for lumber inspected and graded before kiln drying. Prices for cottonwood and hackberry from Southern Hardwoods listings. Prices for ash, basswood, elm, soft maple, red oak, and white oak from Northern Hardwood listings. Prices for cherry, hickory and walnut (steam treated) from Appalachian Hardwoods listings. (Source: *Hardwood Market Report Lumber News Letter*, last issue of month indicated. To subscribe to Hardwood Market Report call (901) 767-9126, website: www.hmr.com.)

# Hardwood Lumber Market History—Green

This hardwood lumber market summary is presented to provide a historical perspective of lumber prices since 1979 with emphasis on the preceding 5 years.

Hardwood prices quoted per MBF, FOB mill, truckload or carload quantities, 4/4, rough, AD, RL & W. Prices for ash, basswood, elm, soft maple, red oak & white oak from Northern Hardwoods listings. Prices for cottonwood and hackberry from Southern Hardwoods listings. Prices for cherry, hickory, and walnut (steam treated) from Appalachian Hardwoods listings. #2C column indicates price for grade 2A lumber unless otherwise indicated. Prior to 1990, the #2C column listed only #2C prices.

SPECIES	DATE	FAS	#1C	#2C	SPECIES	DATE	FAS	#1C	#2C
ASH	1/79	565	440	230		12/03	475	455	265
	12/85	600	445	210		12/04	475	455	265
	12/90	745	585	215		12/05	475	455	265
	12/95	765	630	325		12/06	475	455	265
	12/00	755	615	380		12/07	475	455	265
	12/03	640	510	365	HICKORY	4/79	310	290	165
	12/04	730	565	420		2/85	325	305	160
	12/05	730	565	415		12/90	335	315	195
	12/06	620	470	335		12/95	455	435	265
	12/07	600	430	305		12/00	625	515	340
BASSWOOD	4/79	455	315	170		12/03	765	630	350
	12/85	560	310	182		12/04	750	610	330
	12/90	550	295	170B		12/05	770	650	405
	12/95	620	365	195B		12/06	755	660	450
	12/00	720	425	225		12/07	735	610	425
	12/03	700	425	225	SOFT MAPLE (UNSD)	4/79	390	310	185
	12/04	710	435	225		12/85	400	335	200
	12/05	710	435	225		12/90	420	335	200B
	12/06	750	415	225		12/95	600	490	205B
	12/07	695	365	205		12/00	850	640	340
COTTONWOOD	4/79	455	315	170		12/03	935	615	315
	12/85	320	267	142		12/04	1055	700	370
	12/90	400	285	150B		12/05	1200	790	400
	12/95	605	405	185B		12/06	1185	750	380
	12/00	600	400	220		12/07	1130	600	320
	12/03	600	400	220	RED OAK	4/79	505	415	215
	12/04	600	400	220		12/85	715	450	225
	12/05	600	400	220		12/90	815	645	295
	12/06	600	400	220		12/95	1025	840	475
	12/07	600	400	220		12/00	1095	910	660
CHERRY	12/83	760	580	285		12/03	1125	965	695
	12/85	785	615	305		12/04	1150	1000	705
	12/90	965	620	285		12/05	1150	740	500
	12/95	1185	845	445		12/06	1020	675	500
	12/00	1605	1115	585		12/07	945	630	500
	12/03	1775	1515	705	WHITE OAK	4/79	535	415	212
	12/04	1805	1575	775		12/85	660	355	225
	12/05	1570	1320	625		12/90	800	445	215
	12/06	2350	1335	655		12/95	800	565	340
	12/07	2290	1230	640		12/00	770	535	340
ELM (soft grey)	12/83	313	293	183		12/03	830	645	510
	12/85	410	390	255		12/04	880	685	515
	12/90	665	440	165B		12/05	910	625	400
	12/95	665	440	210B		12/06	1015	600	400
	12/00	635	420	235		12/07	1105	620	400
	12/03	635	420	235	WALNUT	1/79	1250	795	480
	12/04	635	420	235		12/85	1565	855	255
	12/05	635	420	235		12/90	1605	855	290
	12/06	635	420	235		12/95	1535	810	290
	12/07	635	420	210		12/00	1455	785	315
HACKBERRY	4/79	387	367	262		12/03	1885	930	505
	12/85	345	325	220		12/04	1965	980	580
	12/90	390	370	240		12/05	2040	1030	650
	12/95	485	465	275		12/06	2100	1210	885
	12/00	475	455	265		12/07	2180	1300	940

(Source: *Hardwood Market Report Lumber News Letter*. To subscribe to Hardwood Market Report call (901) 767-9126, email: hmr@hmr.com, website: www.hmr.com)

## Hardwood Log Bucking Tips

### Value And Volume Trade-off: When Is Shorter Better?

When does it make sense to cut a log shorter in order to make a step up in grade? A common assumption is that the more scaled volume in a log, the more valuable the log. In situations where the producing the most value is the goal, however, it often makes sense to sacrifice volume in favor of upgrading a log into a higher-paying grade.

A good rule of thumb is that a log should be shortened by two feet (such as a 12-foot log bucked back to 10 feet) as long as the increase in price of the resulting grade is at least 30 percent. This is true in Doyle, Scribner and International ¼" log rules alike. This "30 percent rule" assumes that the shortened log does not increase in diameter. If the diameter increases by one inch, a smaller increase in price is all that is needed to justify shortening the log. Specifically, increases of 18% for International ¼" rule, 15% for Scribner rule and 16% for Doyle rule are all this is necessary with a one-inch diameter increase.

Let's consider an example: Suppose you are debating whether to buck out a 12-foot Number One grade hardwood sawlog that is 14 inches in diameter (100 board feet, International Rule). At a Number One grade price of \$600 per MBF, this log is worth \$60 (0.100 MBF x \$600). Alternatively, you could buck it into a shorter, ten-foot Select grade log. Assuming that this shorter log is also 14 inches in diameter, it would yield 80 board feet. If the Select grade log sells for \$900 per MBF, this smaller log is worth \$72 (0.080 x \$900) and the two feet that you didn't put on the end of this log are probably the butt end of the next log.

Are all of these calculations necessary before make the bucking decision? Not really. All you need to know is that Select pays 50 percent more than Number One, and that you're cutting off less than 50 percent of the volume to bump the grade up. It is often possible to jump more than one grade by shortening a log, resulting in even more dramatic value increases.

Communication with log buyers is important. Some would prefer to buy the log in a longer length, but would be willing to pay you for the shorter, higher value log.

When a logger is working on a production-based contract, the focus is going to be on providing the highest volume of logs, negating the whole question of volume versus value. Mills and buyers who contract out production should take a close look at their price incentives to ensure that maximizing log value is the logical course of action for the contractor.

*(Source: Excerpt from The Northern Logger and Timber Processor, January 2007)*

## Do You Know Your True Costs?

After being in the pallet business for 13 years, I find it interesting that so many companies have what seems to be a wide disparity in pricing. Since most of our costs are comparable for raw lumber and/or recycled cores, it makes sense that our basic costs are similar. Raw materials (or cores for recycles),

labor, freight, overhead and other miscellaneous expenses contributed to your cost factor, whatever it may be. Granted, there may be more efficient saw lines, locations, labor markets, overhead, etc. However, this does not change the basics.

During my experience as a pallet broker, I realized there are many businesses that would do anything for a sale, even though we knew they couldn't make money.

I have been fortunate enough to be a broker and the owner of a few pallet businesses, and I am still mystified by the crazy (for lack of a better word) pricing that goes on. Our industry is swamped by competitors looking to get a share of the business no matter what the price is. These companies are usually the ones that don't make it, change their names several times, or simply hold on.

There is nothing wrong with holding on. However, the problem is it leaves the rest of us reeling. The customers are holding all of us hostage to these low prices and non-realistic competitors.

How many of us know our true costs when pricing a pallet: It is nearly impossible to get it down to the penny, but we should be able to come close. With lumber or cores as our primary cost, we then have labor, freight, fixed and variable overhead, followed by sales, general and administration, and other miscellaneous expenses. The order may change according to your particular structure, but the basic costs are the same.

Looking at these expenses, there isn't much we can do about our raw material costs. Lumber is what it is, and core prices depend on your relationships and other factors.

However, when you price a pallet, are you considering your scrap? Not every board foot will be utilized nor will every core. For example, if your average core price is \$1.50 and you have a scrap factor of 10-15%, every pallet you sell has a raw material cost of approximately \$1.71.

As for new lumber, it depends on the cut. One thing is for certain: you can't get it right every time. Therefore you must have some scrap factor. This will vary quite a bit from one saw line to another and assuming your head sawyer takes the best cut every time.

What about your labor costs? You should be calculating in workers compensation, state and federal employment taxes, FICA and Medicare, health insurance, vacations, sick leave, 401K or any other benefits. It is important to realize that if you pay a person \$8 per hour or a piece rate, there are additional labor-related costs per unit. It obviously varies by company, but it is certainly a major factor. Even if you pay builders a piece rate, you have to account for the additional costs and consider the support they receive, such as the forklift driver who brings them material.

Freight is probably the easiest to figure. If you are using an outside trucking company, then your freight costs are usually straight forward. If you are using your own trucks, the most common way is to identify your costs per mile. Remember, there is a catch to this: shorter runs cost more per mile than long runs. Also, mileage numbers don't take into consideration down time, either at a customers' dock, your dock or breakdowns. One way to avoid this is to figure trucking by the hour. Either way works relatively well.

Fixed and variable overhead, selling, general and administrative, depreciation, along with other miscellaneous expenses vary from company to company. You must identify how much they are and figure the costs into your quote. If you do not, the result may be a pallet that is priced below your costs. This is a very important part of our business, and must be reflected in our sale price.



Obviously, fixed overhead, no matter what the form, does not apply to every pallet equally, but variable overhead and other miscellaneous cost do. I believe this is where most companies go wrong. They do not understand or apply a certain figure to the cost of each pallet for their own labor, office labor, telephones, office supplies, waste removal, postage, interest expense, professional fees, taxes, and others costs of doing business. This is a certain percentage of each pallet you sell, regardless.

It seems that one of the largest misconceptions in our industry is that we can sell new pallets based on board footage, sell recycled pallets at market price and in turn make a profit. I assure you, it is not that simple.

To be successful in this business you have to consider the way you price your pallets. We can not just sell a product and hope that it all works out!

Of course, you have to figure in profits along the way – that is, if you expect to make a profit. But, that is another issue.

(Source: Your Machinery Source, February 2004. Article written by Ernie Riling, President of Tri-State Pallet, Inc., a new and recycled pallet supplier, and President of Profession Pallet Services Inc., a full-service pallet consulting company. He may be contacted in Ohio at (937) 746-8702)

## Controlling Humidity Helps Increase The Bottom Line

Furniture manufacturers, cabinetmakers, and other manufacturers of wood-based products throughout the United States routinely face manufacturing and air quality problems caused by dry air during the “Heating Season.” Manufacturing problems include warping, shrinkage and other dimensional problems with painting, finishing and gluing; and a variety of static electricity-based problems. All can affect product quality, part reject rates, throughput speeds, run times and overtime, which can cut into profits.

Air quality issues commonly related to dry air are mostly health-related and include dust and respiratory problems, colds, flu, allergies and dermatitis. Each of these translates into lost work time and sick days. Under some circumstances the combination of dust and static electricity can also lead to the potential for fires and explosions.

If you carefully investigate manufacturing and employee health problems you had during the last heating season, you will probably find that reducing these problems is easier than you think. The solution is not usually expensive. The return on investment is often faster than two years and the solutions are usually permanent.

**The Nature of Wood** - Maintaining proper relative humidity (RH) throughout the entire cycle of transportation, storage, manufacturing, finishing and finished goods storage will have a substantial impact on the moisture content of the wood you use in your manufacturing and finishing operations.

Most woodworking begins with kiln-dried lumber containing 6% to 11% moisture content. Wood is hygroscopic in nature, readily absorbing and releasing moisture, depending on humidity levels. Wood that is stored and worked at humidity levels that ensure stable moisture content usually stays dimensionally stable and should give you relatively few manufacturing problems. However, retaining 11% moisture content in kiln-dried wood requires an RH level of 55% to 60%.

When air is heated, humidity levels often drop to as little as 10% RH or less. RH levels under 40% reduce moisture content in wood and lead to changes in wood dimensions, including shrinking or swelling, cupping or warping, and checking or splitting. Once the damage is done, it is usually impossible to correct it. Machine stops or reduced machine speeds, problems with setting and production quality are likely results. This leads to predictable drops in production efficiency, increased machine and tool wear and tear, and a higher number of parts rejects.

**Dry Air Problems** - Ideal humidity for both woodworking productivity and employee health is 40% to 60% RH, at a temperature of 68F to 72F. As air is heated, humidity drops. Water must be added to the air for humidity to stay at desirable levels. For instance, maintaining 50% RH at 70F requires having four times as much water in the air as at 32F.

Since many problems are seasonal rather than year-round, their causes are often misdiagnosed. The blame is often put on wood quality, glues, paints, finishes or machinery problems when dry air is the real culprit.

Static electricity problems occur when dry air causes surfaces to become charged with static electricity. It causes a variety of problems including dust fires and static explosions. In some cases, static electricity can also affect the way paints and finishes adhere to wood.

Dimensional changes can affect all aspects of a wood's size. Dried-out wood blanks or parts can shrink, cup or warp, check and split causing a host of problems when the wood's shape or size no longer fits proper dimensions for planing, shaping or assembly.

Gluing and laminating issues are common. Glues often do not cure as completely and uniformly in dry conditions. Ill-fitting pieces also are frequently subject to gluing problems. Dry air can often lead to glue joints separating or veneers popping off the base wood as dimensions change or pieces twist or “pop.”

**Industrial Air Quality (IAQ)** - Years ago, woodworking managers did not worry much about on-the-job air quality. Indoor RH was considered almost entirely a production issue. More recently, however, research into IAQ has show a direct link between the physical and psychological well-being of employees and the environments in which they work.

Dry air and the dust generated in manufacturing can cause a host of problems for people, including safety issues. Research shows workers can suffer from far higher incidences of colds, flu, viruses, respiratory problems and allergies, as well as headaches, dry skin problems and general lethargy, as well as shocks from static electricity discharges.

Maintaining proper in-plant humidity will provide a healthier work environment for everyone, minimizing respiratory problems and allergies. For instance, airborne dust is greatly reduced by controlling humidity. Relatively speaking an RH of 40% to 60% is the best range for minimizing bacteria, fungi and viruses. The incidence of respiratory infections, allergic rhinitis and asthma will be lowest with RH in that range. In most cases, proper humidity levels will reduce sick days and increase productivity.

In addition, with a little planning humidification systems can also be part of your evaporative cooling system in warm, dry climates.

(Continued on age 7)

# Nebraska Forestry Industry Spotlight



## VAN HOUSEN LOGGING AND SAWMILL



Todd Van Housen began farming in 1990 in the Bradshaw/Polk area and entered the logging business in 1993.

Started as a part time business, Todd explains, "Logging not only brought in a little extra money, but a major windstorm in 1993 damaged trees in both windbreaks and woodlots in the area. Logging the damaged trees was a way to salvage and utilize a resource that would otherwise have been thrown away." Todd started with cottonwood as his primary species to log, but has added eastern redcedar over the years.

Cedar is marketed to several outlets including American Wood Fibers near Clarks. Two to three semi-loads a day are delivered to American Wood Fibers that has a contract with Wal-Mart for cedar chips as pet bedding. Nebraska cedar logs are also cut to specific lengths and shipped to Asia.

As Todd's logging business has grown, additional equipment has been purchased to help the operation to be more efficient. In 1996, Todd bought his first delimeter followed by a feller/buncher to harvest trees faster. Both have made a big difference in his logging operation. Equipment to speed up loading trucks and build logging roads are additional purchases that help to address other needs in the operations.

With the acquisition of 600 acres along the Platte near Clarks over a year ago, the Van Housen logging operation is

able to harvest timber year around. Currently Todd is harvesting the red cedar on his property and leaving the hardwood trees for future use. Also through proper management the property will be enhanced for wildlife and hunting.

When harvesting trees from windbreaks, Todd uses an excavator to remove trees and utilizes the trees as a source of lumber for his small sawmill. Purchased in 1998, this sawmill is an Australian built "Lucas Mill." Todd read about it in a logging magazine and purchased it from Bailey's Forestry Equipment in California. He says the mill does a great job, "It's light weight and portable. It's cheap to run and has a four-stroke gas engine." Todd adds that he has handled logs as big as 54 inches wide and 20 feet long.

Van Housen offers lumber for sale including red cedar for decks. In fact, he and his wife Carlene have added some to their rural Polk County home. The sawmill operation is located north of Bradshaw.

Todd Van Housen can be contacted at: 12272 D Road, Polk, NE 68654. Phone:402-765-6411 or 402-366-9278 (cell).



Todd with Lucas Mill



Van Housen Mill products.

# The Trading Post

**T**he Trading Post is provided as a free marketing service for forestry industry. Only forestry-related advertisements will be accepted. Please submit written ads to the *Timber Talk* editor at least 15 days before scheduled *Timber Talk* publication dates. Ads may be edited to meet space constraints.

## For Sale

**Electric Bandsaw Mills.** One M-324 (\$1200) and one M-267 (\$2195). Contact: 4M Lumber, Ravenna, NE. Phone: 308-452-4032; e-mail: fourm57@Charter.net

## Wanted

**Logs.** Cottonwood, cedar and pine. 4" to 26" diameter, 90"-100" lengths. Below saw grade logs acceptable. Contact: American Wood Fibers, Clarks, NE at (800) 967-4789; email: mvanskike@AWE.com

**Hardwood Cross Ties and Switch Ties.** Size 7" x 9" – 8' only. **Mixed Hardwood Timbers.** All sizes. **Logs.** C4S, Veneer and C1S, C2S; and C3S logs. Must be able to load 40' containers. Cherry, Walnut, Red Oak, White Oak, Ash, Hard Maple and Poplar logs. **Timbers for Log Homes.** **Car Decking.** Oak or mixed hardwoods. 3" x 6" x 10'. **Switch Ties.** Oak and mixed hardwood, 7" x 9" – 15', 16', 21', 22', 23'. **White Pine Plank.** #2C, 5 T/LS per month, Rough, green, 1 3/8" x 7 3/8" or 2 1/2" x 9 3/8", up to 1/3 – 8', bal. 10' - 16' lengths. 6 1/4" x 12" - 10 to 16'. 4" x 12" rough KD. **Walnut Sawlogs.** Woods run, #1, #2, #3 grades. **Log Inspector** to inspect logs before shipment. **Cross Tie Buyers.**

Good incentive arrangements. **Man to Inspect Logs Before Shipment.** Various locations. **Mills to Produce Oak Car Decking.** Surface, drill – oak or mixed hardwoods. Contact: W. Preston Germain, Germain Lumber Co., Inc., Pittsburgh, PA 15251; 402-782-3240; FAX: 412-781-2551; e-mail: germainlumber@verizon.net.

## Services and Miscellaneous

**Sawmill Service and Supplies.** Saw hammering and welding. Precision knife and saw grinding. Certified Stihl chainsaw sales and service. Contact: Tim Schram, Schram Saw and Machine, PO Box 718, 204 E. 3rd St., Ponca, NE 68770, (402) 755-4294.

**Used Portable Sawmills.** Buy/Sell. Contact: Sawmill Exchange (800) 459-2148, (205) 661-9821.

**Forest Products Equipment Magazine.** FREE monthly trade publication for the forest products industry. For a sample magazine or free subscription call 1-800-422-7147, email: jfoastera@mrpllc or visit the website: www.mrpllc.com and click on Forest Products Equipment Magazine.

## Control Humidity Helps Increase The Bottom Line *(continued from page 5)*

**A Simple Solution: Humidity Control**-All of the aforementioned problems can be avoided or mitigated by maintaining humidity levels at 40% to 60% RH in your office, warehouse, and manufacturing and finishing departments.

Manufacturers have developed a wide array of technologies and products aimed at resolving humidity problems. Each type converts water into droplets, which are evaporated into the plant's air.

In general, the smaller the particles, the faster and more efficiently they increase the RH. Virtually any one of the leading technologies can provide adequate humidification, but all methods are not created equal for every situation. Each method has its strength and weaknesses in terms of cost, efficiency and effectiveness based on individual circumstances.

In each instance it is important to use clean, soft water in your system. Depending on water quality in your area, it may be necessary to consider use of conditioned, reverse osmosis or de-mineralized water.

Steam systems produce very fine droplets of 0.3 to 1.0 microns, which evaporate quickly and effectively, but steam systems also produce heat, something that most plants don't welcome.

Most new steam systems use electricity to heat the water. Because electricity is a high-cost source of heat, electric steam humidification usually involves the highest energy costs. Maintenance costs to prevent build-up or corrosive residues on heating elements can also run high.

Centrifugal systems use centrifugal force to atomize water. Units have low installed costs and relatively low operating costs. However, this technology creates larger droplets, which do not evaporate as efficiently as smaller ones. This can lead to excessive condensation problems and wetness. Air quality and health concerns have been raised over the use

of the open water baths used in centrifugal systems because they may promote bacteria growth.

Ultrasonic humidifiers use high-frequency electricity to break droplets away from the surface of a shallow water bath. Ultrasonic systems are more energy efficient than steam or centrifugal humidifiers. They share some of the same basic health issues as centrifugal systems.

Compressed air systems use high velocity air to convert water from a nozzle into fine droplets. Since no heat is involved, energy costs are lower, as are maintenance costs. Compressed air systems can be a drag on compressed air capacity, reducing the amount available to run production equipment or requiring plants to increase their compressor capacity.

High-pressure humidifiers use a high-pressure electric pump to drive water through a fine nozzle at pressures of 900 to 2,000 psi, creating a fine mist of "fog", droplets averaging about 10 to 15 microns in diameter. Since no heat is required, energy costs are reduced.

The biggest selling points for high-pressure humidification systems are simple installation, low maintenance cost and low operating costs due to energy efficiency.

The greatest shortcoming of high-pressure systems is that the fog they create requires a longer distance to evaporate than some of the other humidification methods previously described. This can be overcome by using a system with a built-in fan. Units with fans distribute moisture with greater uniformity throughout the area. A built-in fan also allows high-pressure systems to work effectively in spaces with ceiling heights as low as 8 feet, without any drain water.

(Source: Wood and Wood Products, April 2004. Article written by Pierre A. Husson, president of Husson, Inc. of Sturtevant, WI. He can be reached at (262) 884-4669.)



# Timber Sales

The following listings are for stands of timber or logs being offered for sale by owners or persons of delegated authority. Timber was cruised and/or marked for harvest by Nebraska Forest Service or other professional foresters. Volumes in board feet (Doyle scale unless otherwise indicated) are estimates by the forester. If no volume is listed, the trees or logs were not appraised or marked by a forester and the listing is included only as a marketing service to the owner. Listings are prepared according to information at the time of publication.

Item		Forester/Date	Contact
1. <b>Black Walnut</b> (49 trees)	14,031 bf	Schmidt	Merle White
Veneer 2 -	4,284 bf	1/08	604 Stage Coach Rd.
Veneer 3 -	2,074 bf		South Sioux City, NE 68776
Lumber 1 -	3,559 bf		(402) 494-6460
Lumber 2 -	1,929 bf		Location: Dakota County
Lumber 3 -	2,185 bf		
SEALED BIDS. BID OPENING FEBRUARY 29, 2008.			
2. <b>Mixed Hardwoods</b>			Joan Dawson
12 acres of native timber includes			223 N. 16th St.
8 <b>Black Walnut</b> plus <b>Oak</b>			Nebraska City, NE 68410
			(402) 873-7600
			Locations: Otoe County
3. <b>Black Walnut</b> (12 trees)	578 bf	12/07	Mark Kuhr
Lumber 2 -	180 bf	Karloff	441 N. 16th
Lumber 3 -	398 bf		Blair, NE 68008
			(402) 426-5112
			Location: Washington Co.
4. <b>Bur Oak</b> (96 trees) -	7,850 bf	12/06	Tom Scheffert
<b>Hackberry</b> (3 trees) -	450 bf	Karloff	1057 CR 1300
<b>Green Ash</b> (2 trees) -	230 bf		Dorchester, NE 68343
			(402) 641-1148
			Location: Saline Co.
5. <b>Black Walnut</b> (18 trees)	1,756 bf	1/08	Frances McCord
Veneer 3 -	68 bf	Karloff	70550 569 Ave.
Lumber 1 -	112 bf		Fairbury, NE 68352
Lumber 2 -	729 bf		(402) 729-6025
Lumber 3 -	847 bf		Location: Jefferson Co.
6. <b>Black Walnut</b> (47 trees)	4,136 bf	1/08	Harold Hunzeker
Veneer 3 -	322 bf	Karloff	RFD 1
Lumber 1 -	477 bf		Falls City, NE 68355
Lumber 2 -	916 bf		(402) 245-4788
Lumber 3 -	2,421 bf		Location: Richardson Co.
7. <b>Black Walnut</b>			Ted Kinnison
5 trees, 27"- 31" DBH			POB 752
			Wisner, NE 68791
			(402) 529-6695
			kinnisons@cableone.net

*You know you're from  
Nebraska if....*

*your local Dairy Queen is closed  
from September through May.*