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TIMBER TALK

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In This Issue

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The Nebraska Forest Service publishes ***Timber Talk*** four times annually (February 1, June 1, September 1, and November 1) to serve 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, 203E Forestry Hall, P.O. Box 830815, Lincoln, NE 68583-0815. Phone (402) 472-5822, FAX (402) 472-2964.

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Lumber Market

HARDWOODS

NEWS

Northern. The seasonal leaning toward Oak production by mills and yards has shifted the supply balance within the regional mix of species. The increased volumes of Red Oak are weighing on prices. However, mills and yards are reluctant to aggressively pursue additional whitewood, e.g. Maple or Basswood, production because of the risk of stain during this time. North American markets are mostly flat; Mexico is showing some gains this year; business in Europe has not yet emerged from the traditional vacation season; and China continues to work through excessive supplies within its domestic distribution stream. In spite of listless demand, the supply situation is stimulating price movement for selective species, grades and thicknesses.

Southern. Markets have done little to spur excitement this summer. Housing construction in the U.S. has shown some life, though increased starts will take months before requiring interior fittings and furnishings. Still, the rate of construction is extremely low by historical standards. Sales operations are experiencing greater competition for orders, which usually pressures prices lower. That has been the case for Red Oak and White Oak. Poplar and Ash have fared better, due to limited supply rather than strong demand.

Appalachian. Limited capital and weak demand are common concerns resulting in restricted logging and sawmill production. In fact, weather conditions have been ideal for logging this summer, though uncertainty about domestic and international demand has impacted the supply stream. The controlled rate of production has prevented widespread supply gains and severe price deflation. For some, the availability of Oak is exceeding market needs, and pricing has slipped. On the other hand, stain-inducing weather conditions have limited production for whitewoods, and prices are firming for these items.

(Source: Condensed from *Hardwood Market Report,* August 13, 2011. For more information or to subscribe to *Hardwood Market Report,* call (901) 767-9216, email: hmr@hmr.com, website: www.hmr.com)

Hardwood Lumber Price Trends—Green

	FAS				#1C				#2A			
Species	**6/11**	**3/11**	**12/10**	**9/10**	**6/11**	**3/11**	**12/10**	**9/10**	**6/11**	**3/11**	**12/10**	**9/10**
Ash	800	790	800	800	570	570	570	570	405	405	405	405
Basswood	705	705	705	730	375	375	375	385	205	205	205	205
Cottonwood	635	625	625	625	435	425	425	425	220	220	220	220
Cherry	1415	1480	1530	1530	655	655	655	655	330	330	330	330
Elm	635	635	635	635	420	420	420	420	235	235	235	235
Hackberry	475	475	475	475	455	455	455	455	265	265	265	265
Hickory	655	640	640	655	540	530	530	530	405	405	405	405
Soft Maple	870	870	870	930	570	570	570	585	325	325	325	325
Red Oak	985	985	1040	1095	680	680	680	770	525	555	555	575
White Oak	1020	1020	1035	1035	635	635	645	645	470	470	480	500
Walnut	2155	2130	2105	2060	1160	1140	1125	1095	770	755	740	675

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, northern soft grey elm, unselected 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

	FAS				#1C				#2A			
Species	**6/11**	**3/11**	**12/10**	**9/10**	**6/11**	**3/11**	**12/10**	**9/10**	**6/11**	**3/11**	**12/10**	**9/10**
Ash	1145	1130	1155	1165	835	835	860	890	670	670	680	695
Basswood	965	940	950	985	575	575	585	575	415	415	415	415
Cottonwood	725	725	—	740	530	530	—	545	—	—	—	—
Cherry	1970	2140	2260	2260	990	990	1005	990	625	625	625	615
Elm	—	—	—	—	—	—	—	—	—	—	—	—
Hackberry	—	—	—	—	—	—	—	—	—	—	—	—
Hickory	1145	1110	1110	1110	960	945	945	945	790	790	790	790
Soft Maple	1160	1120	1140	1200	770	760	775	830	585	595	595	595
Red Oak	1410	1355	1435	1550	1025	1000	1050	1140	820	835	865	865
White Oak	1600	1560	1625	1650	970	940	955	955	780	780	795	795
Walnut	3185	3185	3110	3045	1820	1800	1765	1750	1235	1235	1235	1185

Note: Kiln dried prices in dollars per MBF, FOB mill, is an estimate of predominant prices for 4/4 lumber inspected and graded before kiln drying. Prices for cottonwood and hackberry from Southern Hardwoods listings. Prices for ash, basswood, northern soft grey elm, unselected 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.)

Timber Stumpage Prices

The Nebraska Forest Service does not have a reliable system of collecting data on timber stumpage prices paid for Nebraska timber. Since current timber stumpage price information would be useful to landowners, loggers, sawmills and forester's in Nebraska, timber stumpage price information will be summarized from selected states and periodically presented in Timber Talk. Although this data is not collected from Nebraska timber sales, it may serve as a general guide in tracking stumpage trends. Prices quoted in $/MBF.

	(1) Illinois (Nov. 2010 - Feb. 2011)		(2) Missouri (Jan. - March 2011)	
Species	**Sawtimber**	**Veneer**	**Sawtimber**	**Veneer**
Ash	50-150 (130)			
Basswood	70-175 (110)			
Cherry	100-750 (270)	150-1500 (580)		
Cottonwood	40-150 (70)			
Elm	50-100 (80)			
Hackberry	50-100 (80)			
Hickory	70-220 (140)		*10-180 (70)	
Soft Maple	70-225 (130)			
Red Oak	70-300 (200)	150-2000 (360)	*90-220 (135)	
White Oak	70-450 (360)	400-2000 (1240)	*100-290 (145)	
Sycamore	50-150 (90)			
Black Walnut	500-1600 (840)	400-4000 (2450)	*210-835 (755)	*2665-2665 (2665)
Redcedar				

(1) Source: Illinois Timber Prices. Stumpage price range for Sawtimber reported from the Prairie Unit (Zone 3). Sawtimber price average, in parentheses, and veneer price range and average reported from Statewide statistics. Doyle Scale.

(2) Source: Missouri Timber Price Trends. Stumpage price range and average, in parentheses, reported from the North Region or Statewide (indicated with *) statistics. International 1/4" Rule.

Timber Culture Act

As settlement began, it was immediately obvious Nebraska Territory was an alien landscape to many of its immigrants who were used to forested land or, at least, land with some trees. With statehood in 1867 the legislature considered but did not enact a law that would require each settler to plant a minimum of 20 acres of trees to provide shelterbelts, promote rainfall and provide firewood and building lumber. The original state constitution did provide that "improvements resulting from tree planting should not be included in assessment for tax purposes," and an 1869 law excluded $100 worth of property from taxation for every acre of trees planted. In 1872, Arbor Day was enacted as a further encouragement for tree planting.

On March 3, 1873, Nebraska Sen. Phineas W. Hitchcock sponsored "An Act to Encourage the Growth of Timber on the Western Plains," which was often simply called the Timber Culture Act. It was generally believed settlers would then be able to secure land adjacent to their existing claims, but the act failed to realize that by 1873, most of the available land in the eastern quarter of Nebraska already had been claimed.

The Act, which went into effect in 1874, granted up to 160 acres of land per section of which 40 acres had to be planted in trees. There was to be only one grant per person, and the land could not be mortgaged, sold or taxed until final certification. The original Act also had no requirement for residency or minimum age requirement, and claimants did not even have to be U. S. citizens. It also was possible, in the more open western portion of the state, to "take three claims of 160 acres each simultaneously — homestead, preemption and tree claim — 480 acres" in total.

Implementation was fairly detailed, requiring five acres to be plowed the first year. The second year, that plowed land had to be planted with crops. During the third year, the original five acres was to be planted with trees and another five acres plowed. This continued with trees being planted on the second five-acre plot, resulting in 10 acres devoted to trees, which had to have a minimum of 270 trees per acre. At the end of 13 years, a minimum number of trees had to have survived. Then with written and witnessed statements, a final land certificate was issued.

Many settlers, particularly ranchers, saw this as an opportunity to simply apply for a timber grant; after 13 years, they would not bother to apply for certification and let the land revert to the federal government. In effect they would have had 13 years of tax-free, rent-free land use. Additionally, without residency requirements, every ranch employee could apply or false names could be employed and vast areas of land used free for more than a decade.

Although it was illegal, some also discovered that an original claimant could sell an improvement, like a well or building, on the property to a second party, then give up the

land claim, allowing the land to be reclaimed by that other party. In 1874, the law was modified, making the requirements for timber claims the same as for homesteading: The person had to be 21 years old, head of a household and a U.S. citizen. Unfortunately, this did little to prevent fraud.

Despite a claim by Gov. Furnas in 1883 that the law was a success, a representative of the General Land Office reported that a "majority of entries (were for purely) speculative purposes." The next year, A.R. Green of the Land Office found that timber claims without trees ranged from 10 percent to 90 percent and referred to the "farcical absurdity of the Timber Culture Act."

Although in 1890 it was claimed that "Nebraskans had planted several hundred million trees," the Act was repealed in 1891, an almost universal failure. It was then pointed out that the Act failed to even specify what a tree was and there was almost no enforcement because the government could not directly initiate foreclosure. An individual had to file a complaint.

Ultimately, 20 percent of homesteaders filed tree claims, more in Nebraska than any other state, and about a fourth of the 8,876,351 acres claimed under the Act were ultimately given final certification. In 1974, C.B. McIntosh randomly visited 49 of the tracts given final certification and found that exactly one still had trees planted.

(Source: Lincoln Journal Star Newspaper, Sunday, July 17, 2011. Article written by Jim McKee, local historian, who still writes with a fountain pen)

Powderpost Beetles

The economic slowdown has caused many companies to hold lumber in inventory longer than usual.

The longer dry lumber remains in storage, the greater the potential for moisture gain and a powder post beetle infestation.

It seems that every spring the question comes up as to whether kiln drying kills powderpost beetles and if one can determine exactly when the wood became infested.

Usually a beetle infestation is not noticed until the adults emerge out of a finished product — commonly flooring already installed in a home. The homeowner wants to know how the beetle got into the flooring, if they will infest other wood in the home, whose fault is it and how do they get rid of it.

There is a great deal of information published about what to do when powderpost beetles are found in wood products in homes.

I would like to focus this column on how the industry can prevent infestations in lumber. To answer that question we must know: what are powderpost beetles, how do they infest lumber, how long does it take for them to emerge, does kiln drying kill the insects, and what are the prevention strategies.

Three Beetle Families

There are three distinct families of powderpost beetles in the U.S: the true powderpost beetles (family Lyctidae), the false powderpost beetles (family Bostrichidae), and the deathwatch beetles (family Anobiidae).

Lyctidae

The lyctid beetle most commonly infests large-pore hardwoods, like oak, hickory and ash; however, they have been known to attack black walnut, elm, locust, maple, osage orange, persimmon, poplar, sycamore, sassafras, and cherry. Imported tropical hardwoods such as mahogany are also prone to attack.

Lyctids typically infest well air dried or kiln dried hardwoods than are less than five years old. When adults emerge from the wood they are 3-5 mm in length and leave a very fine loose powder, known as frass, around the exit hole. These exit holes are circular and very tiny 1-2 mm in diameter. The average life cycle varies between six to 12 months.

Anobiidea

The anobii beetle will feed on hardwoods (such as maple, beech, or poplar) or softwoods (commonly pine). They usually attack older wood with higher moisture contents (typically moisture contents below 13% are unsuitable for anobii development or re-infestation. The adult exit hole is 2-3 mm in diameter, and they produce a powder with a pallet type of frass. The life cycle of these beetles is between one and five years.

Bostrichidae

The bostrichid beetle also feeds on both hardwoods and softwoods. It prefers wood that is less than 10 years old. The adults range between 3-7 mm in length and their exit hole can be up to 3mm in diameter with tightly packed, grainy frass. These beetles are commonly found in tropical hardwoods such as lauan and mahogany.

The vast majority of damage in lumber is done by the lyctid beetle, so the remainder of this column will focus on its lifecycle, habits and prevention.

Infesting Lumber

An infestation begins when an adult female lays her eggs on the surface or slightly under the surface of wood. Typically, the eggs are laid in the large pores present in ring porous hardwoods.

While powderpost infestations have been noted in lower moisture content lumber, most infestations occur in lumber between 9-15% moisture content. Hence, dried lumber that has picked up moisture and well air-dried lumber are prime candidates for infestation.

The damage is done when eggs hatch and the larvae begin to create tunnels in the wood as they feed. These larvae generally bore parallel to the grain, extracting starches in the wood as a food source. These starches are only present in the sapwood; hence, the larvae only attack the sapwood.

They reduce the wood to a fine powder, called frass, as they digest the starch. The damage can be extensive. When the insects reach the adult stage, they emerge from the wood, leaving holes and frass behind. When you see the holes and powder on lumber, the damage already has been done. While the larvae attack only the sapwood, adults may emerge from the heartwood.

Determining When

The eggs of a lyctid beetle typically hatch in one to three weeks. The lava stage can last between a few months to several years, with the average being nine to 12 months. The pupa stage lasts about two to four weeks, afterword the insect will emerge from the wood as an adult. The rate of development is influenced by the starch and moisture content and temperature. Therefore, it can be difficult to determine exactly when the infestation occurred.

However, an infestation must have occurred at least three to seven months prior to the emergence of an adult from the lumber.

Kiln Drying

The process of kiln drying lumber when temperatures used are at least 130 degrees Fahrenheit or higher has been proven to be effective to kill lyctid in all life stages.

While the time required for lumber to remain at temperatures of 130 degrees varies based on the lumber thickness and humidity used, these time periods are all less than 24 hours. Most standard kiln schedules include several steps well above 130 degrees for a time period that exceeds the minimum sterilization standard.

The potential for problems with sterilization in the kiln drying process occur when lower temperature kiln schedules are used or if kilns are not in proper working order, which can be determined and prevented by good quality control in drying operations. A quick check of the kiln control chart is one good way to determine if proper temperatures are achieved. Also, poor air-flow or low temperature zones in a kiln will usually also result in high moisture content variability within a load.

Prevention Strategies

Good general hygiene in the lumber yard and storage areas is a must to prevent powderpost beetle problems. Old lumber, stickers and bolsters in the yard or hidden in old inventories are often a culprit of infestation problems.

Prevention strategies also include the application of first-in, first-out inventory management. Maintaining moisture contents between 6-8% in hardwood lumber will also help as most beetle infestations occur with lumber that has picked up moisture to between 9-12%.

Since the lyctid beetle uses the sapwood of lumber as its food source, quickly moving wood with high sapwood contents can also be beneficial. In my experience, almost all infestations originate in a stored pack of lumber that is long forgotten and spreads to more valuable and recent inventory.

If you believe some material is infested, it should be removed immediately and heat sterilized to prevent further infestation. Heat sterilization is the most effective method of killing beetles in all life stages in wood.

Treatment with insecticides is occasionally done on well air-dried material. Surface treatments of liquid insecticides by dipping, spraying or brushing can create a toxic barrier that kills beetles. However, these topical treatments only penetrate a few millimeters into the surface and will only kill larvae or emerging adults as they come into contact with the pesticide. Also, when the wood is planed, the planer shavings and dust will contain the pesticide, a potential health hazard for employees.

Summary

While there are three beetle families considered as powderpost beetles, the lyctid beetle is responsible for the majority of problems in dried hardwood lumber. Practicing good hygiene and moisture control in stored inventory will go a long way to preventing powderpost beetle infestations. Determining the exact time and location of infestation can be difficult; however, the kiln drying process, if done with temperatures at or exceeding 130 degrees, kills the eggs, larvae, pupa, and adult beetles. I recommend that kiln control charts be kept with other quality control information so that a company can demonstrate, should the need arise, that the sterilization temperatures were reached in the drying process. Make sure that if lumber needs to be stored for any period of time that it is done so in a clean environment and that low moisture contents are maintained.

(Source: *Pallet Enterprise*, July 2009. Article by Dr. Brian Bond, Virginia Tech University)

End-Coating Logs and Lumber Makes "Cents" (Or Dollars!)

Let's take a look at the actual benefits of end-coating logs and lumber, why such coatings work, and what make a good end coating.

When wood was plentiful and supplies seemed unlimited, the North American wood products community tended to waste wood, making profits on high productivity and cheap resources. It should not be a shocker to anyone that times have changed. Although there is still a plentiful wood supply, with more hardwood sawtimber volume in the U.S. every year, the resource has become expensive. Further, we know that the message sent by a few perceptive foresters such as Gifford Pinchot nearly 100 years ago is true—wood supplies are not unlimited. As I taught my students 20 years ago, "wood is an amazing material that is too good to waste."

Consider an 8-foot-long piece of lumber. Consider that it has small end checks on both ends that will require a cabinet shop or furniture plant to cut off 1 inch from each end to eliminate these cracks. This is a loss of 2 inches out of 100 inches, which is a 2% loss. End trim for a pack of 8-foot lumber will be the equivalent of 20 BF for every 1,000 BF of kiln-dried and processed lumber. This loss is equivalent to $20 per MBF in many cases. This is indeed a tragic waste, is certainly not economical, and might be considered unethical in today's world with its growing population. The good news is that such damage could be virtually 100% prevented at a very low cost by using end coating.

Logs

When a log is first cut, the exposed ends, which are initially soaking wet, begin to dry. As the wood dries, the wood will begin to shrink. But only the wood at the end where significant moisture loss is occurring will begin to shrink. Wood several inches away from the end will remain at its initial green size. This size difference, from the shrinking end to the non-shrinking inside, creates stress. This stress is a splitting type of force. Wood is actually quite weak in splitting strength (technically called cleavage strength). In fact, once a small split or crack begins on the end of the log, it is very easy for that split to grow in size, in length and width.

In addition to shrinkage, as the wood dries, air moves into the log. In the living tree, there is generally not enough air to support fungal growth. But as the log end dries, the incoming oxygen, along with warm temperatures, water and food (sugar in the sap), makes ideal growing conditions for the blue stain fungi.

In order to measure the extent of end-checking loss and stain in uncoated logs and also to show the benefit of end coating, a graduate student from the University of Wisconsin-Madison, Alberto Linares, obtained red oak logs from four Wisconsin sawmills in the late spring. These logs were freshly arrived logs. He then coated one end of each log with a commercial wax-type end-coating product, making sure to apply the coating thick enough to essentially stop any drying from the log ends. (Comment: We learned that end-coating with a thin coating is almost worthless.) The logs were then put in a non-sprinkled log yard. Every few weeks he selected several logs from the pile and had them sawn in 4/4 lumber. The extent of any stain in the maple and checking in the oak lumber was measured before the lumber was stacked for dry-

(continued on page 7)

Nebraska Forestry Industry Spotlight

SAWLE MILL

Sawle Mill, a well-known sawmill in the Niobrara Valley, is under new ownership and has moved to a new location. The new owner, William Abbott, kept the business name "Sawle Mill", but relocated the sawmill operation from near Meadville on the Niobrara River about 8 miles northeast to Springview, NE . Day to day sawmill operations are overseen by mill manager, Micky Hunt.

Bill Abbott has over 20 years of experience in the wood preservatives business. He also owns Copper Care Wood Preservatives, Inc. in Platte County Nebraska. He has been an active member in both the American Wood Protection Association (AWPA) and the International Research Group on Wood Protection (IRG) for over twenty-five years. Mr. Abbot is currently serving on the AWPA Executive Committee. He is drawing from his knowledge of wood characteristics and preservation techniques to develop a line of products that will serve existing and potential new markets for the wood products produced in Nebraska.

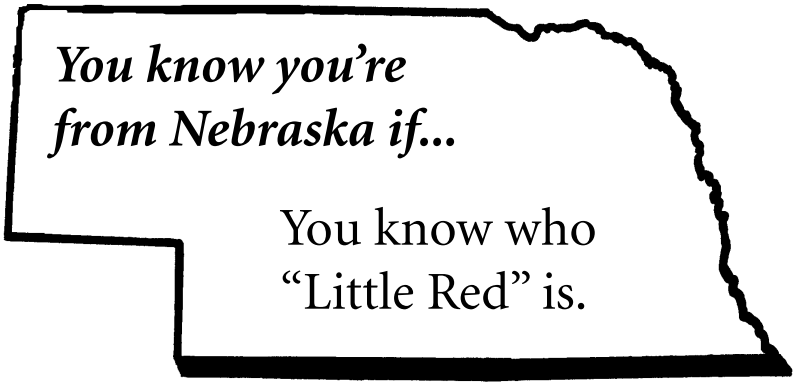
Bill Abbott (left) and Micky Hunt (right)

The headrig, a portable Baker 3635 band-sawmill, manufactured by Baker Industries of Ellington, Missouri, was moved from the old mill location to the Springview site along with the other core mill machinery — a DIEHL DL205 molder, Baker Type A re-saw, Timesaver model 325 twenty-four inch belt sander, and a large edger. Recent additions to the new mill include a Baker 3650E band-mill, and a dual blade Baker Edger, which will edge boards up to twenty inches wide and two and one-half inches thick. A new 22,000 square feet building is being constructed to house the mill's product line. Part of this structure includes two dry-kilns, which have a combined capacity of more than 50,000 board feet. An outdoor wood gasification furnace heats all existing buildings with heated water circulated through insulated underground pipes. Hydronic floors in the kilns will also allow heat from the wood-fired boiler to be used in the wood drying process.

Sawle Mill manufactures a variety of products, primarily processed from the local eastern redcedar resource. In addition to producing traditional lumber, other markets are being explored and developed. Eastern Red Cedar posts and poles are among the current products offered, and work with wood preservatives will help develop a new product line. Mr. Abbott is also optimistic about the future of the wood fiber markets. The local demand for redcedar mulch, produced from wood waste from the sawmill and woods operations, has been encouraging.

Sawle Mill is a welcome economic benefit to the Niobrara Valley. Local support for the mill has been strong.

Sawle Mill can be contacted at: 89748 U.S. Hwy 183, Springview, NE 68778; phone: 402-497-3571; FAX: 402-564-9508; Email: manager@sawlemill.com; Website: www.sawlemill.com.



End-Coating Logs (continued from page 5)

ing. Data analysis compared the coated end of a piece with the uncoated end. The results are shown in the table below.

Length Of Splits In Logs

(One End Of The Log Was Coated, The Other Was Not)

Time (Week)	Uncoated End (Cm)	Coated End (Cm)	Savings ($/Thousand Board Ft)
2	0.44	0.11	1
3	0.64	0	4
4	0.87	0.16	4
5	1.37	0.02	8
7	2.87	0	17
9	3.98	0	24
12	6.14	0	37

Length of splits and economic benefit of end-coating red oak logs stored for 12 weeks during the summer in Wisconsin.

These results show that for the first four weeks of storage, the loss due to end checking was quite small. As the cost of end-coating logs is around $3 per MBF, the benefit of $4 per MBF hardly seams to justify the coating. For expensive veneer logs or high-quality logs, however, the savings would likely have been larger; making the coating of such logs mandatory. Beginning at the fifth week and going onward, the benefit of end coating is overwhelming and needs no further discussion.

A similar study was conducted using hard maple logs, but this time, the test was for staining. The difference in the length of the stain between coated and uncoated ends up through seventh week showed less than ¾ of an inch

More stain in the uncoated end. However, in the ninth week, the uncoated end had 2 ½ inches more stain. By the twelfth week, the difference was over 9 inches. Again the conclusion is clear that storage in warm weather for more that six weeks requires the use of end coating.

Incidentally, for end coating to work best, the coating must be applied to the log ends before any stain or checking occurs. Although it was not part of this study, a delay in coating will quickly negate the use of end coating.

Lumber

Certainly all species of lumber have a risk of checking during drying. But the lower density species of hardwoods and most softwoods seen to have a much smaller risk. Likewise, thinner lumber has less risk than thicker lumber. Nevertheless if an inexpensive coating will essentially stop all checking for starting, its use can be justified for all species and all thicknesses.

To try to establish the benefits of end coating and also to study the effect in delaying the application of a coating, 5/4 red oak lumber with freshly sawn ends were e obtained from a sawmill in Virginia. One end of each piece of lumber was coated and the other left uncoated. The coated ends were alternated, end for end, when the stack was piles for air drying. Two months of air drying in the summertime, the lumber was unstacked and 1/4 inch-thick wafers were cut from all the ends. If the wafer broke or showed that there was a check or crack, another wafer was sawn, and so on, until solid wood was obtained. In this way, the lengths of the checks were measured.

The results were that the differences in the lengths of the checks between coated ends and uncoated ends were an average of 2-1/8 inches. Stated another way, coated lumber has over 4 inches more useable wood than uncoated. The results also showed that 62% of the coated ends had no checks or cracks at all.

As part of this study, some lumber ends were not coated until the lumber had already been air-dried for three, six and ten days. After three days of air drying, only 22% of the end-coated pieces had no checks. The difference between coated and uncoated was down to 1 inch. The benefit of coating continued to drop as the delay in coating lengthened.

As with logs, the coating must be put on thick enough. Sometimes, in practice, the coating is sprayed on the lumber, and the coating job is poor and does little good. In this case, it is not unusual to see the company stop end coating, as they cannot see the benefit.

Summary

The benefit of using a wax-based end coating, properly applied, for reducing or stopping end checking in logs and lumber is clear. The cost of materials and application is so low and the benefits so high, that it is advantageous to coat almost all species of logs and lumber. (Lumber from logs that were coated probably does not need re-coating if the original coated is still intact.

The benefit of coating stain-prone species was shown to be clear, especially for logs stored over seven weeks.

Anecdote

In the old days, logs were always a little bit longer than needed. This provided enough extra on the ends of lumber so that a double end trim saw could cut the lumber to its exact required light and trim off any staining or checking. This is certainly wasteful. Also, if a log is 6 inches longer than needed, this means that when considering the tree, the next log that will be cut will be located 6 inches further up the stem and this will make this second log a bit smaller in diameter, reducing yield. The effect on the third log will be even greater. Using end coating to reduce log overlength is a certainly another benefit to add to the list.

Finally, I do get questions now and then about using old paint for an end coating. To be effective, the end coating must adhere to the ends and stop drying of the ends. Paint will not adhere well and may also not provide much of a moisture barrier. The disposal of painted ends in the furniture or cabinet plant may also pose an environmental concern; the commercial wax coatings evaporate from the ends when drying temperatures exceed 130 degrees F so do not carryover into the dry lumber manufacturing process.

(Source: *Independent Sawmill & Woodlot Management* magazine, Oct/Nov 2007. Article written by Gene Wengert, Professor Emeritus, Univ. of Wisconsin-Madison, and President of The Wood Doctor's Rx, LLC, in Madison, WI. For more information or to subscribe to IS&WM, phone: 1-800-762-8426 or www.sawmillmag.com)

Planning Tool Available to Loggers

A new planning tool is available to assist loggers in making decisions on the type and size of equipment they may be considering for purchase. The computer based planning tool was designed by Consulting Forester, Steven Bick and is published by the Northern Loggers' Association & The Forest Enterprise Institute, Ltd. The program known as PATH and is short for "Planning and Analysis in Timber Harvesting". The program allows users to analyze their existing business and explore "what if" scenarios. For example, a logger could compare the production from their current equipment to another type of harvesting equipment. Based on the productivity of the equipment, the program would then calculate the amount of volume that would need to be harvested to break even. The program can also be used to calculate equipment costs, individual job costs, trucking alternatives and many other prices and costs associated with the timber harvesting industry. The program can be downloaded for free at the following website: http://northeastforests.com/.

The Trading Post

The Trading Post is provided as a free marketing service for forestry industry. Only forestry-related advertisements will be accepted with the exception of products manufactured in the normal course of your business. 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

Sawmill. Mighty Mite band sawmill. 20 horse electric motor, tandem axles with brakes on one axle, 36" x 24' log capacity, (I have cut 46" beams) hydraulic operation includes winch, knees, taper, near arm, dogging arms, far arm, dogging spike, log loading arms, and electric clutch and blade lift. Also includes automatic blade sharpener, setting machine, 12 used blades and 4 new blades. Excellent condition. Never been used commercially. $17,500. Contact: Gary Fisher, Crawford, NE. Phone: (308) 665-1580; email: fisher@bbcwb.net.

Tree Shear. 14" Dymax Model 2135D1, Double grapple. Used very little. Excellent condition. Fits universal skid loader mounts. $4,000. Contact: Gary Fisher, Crawford, NE. Phone: (308) 665-1580; email: fisher@bbcwb.net.

Lumber Dry Kiln. 2007 Nyle L300 Lumber Dry Kiln. 8000 bf capacity. Single phase, 100A, 220V, comes with 3 fans, 3 motors, 3 shrouds, wet and dry bulbs. Never been removed from shipping crate. $9,800. Contact: Dave Champlin, 1842 N. 210th Rd., Concordia, KS 66901. Phone: (785) 275-2181; email: trees2trim@ncKcn.com.

Sawmill. Circular sawmill. Includes power unit and two 48-inch insert tooth blades. Contact: Monte Reynolds, R&R Sawmill, 75455 Rd 409, Farnam, NE 69029. Phone: (308) 569-2345.

Planer. 24" Goodall & Waters planer. 2 knives. Includes 5 HP electric motor. Manufactured about 1890 in Philadelphia. $250 OBO. Contact: Carl Hinds, 450 Gulf Rd., S. Sioux City, NE 68776. Phone: (402) 494-2127 or cell (712) 281-1472.

Lumber. Rough cut. Air dry. Approximately 500 bf – Black Walnut, 290 bf – Pecan, 100 bf – Poplar, 500 bf – Cherry, 500 bf – Soft Maple, 100 bf – Hickory, 300 bf – Ash. Contact: R&R Sawmill, 75455 Rd 409, Farnam, NE 69029. Phone: 308) 569-2345.

Walnut Logs and Walnut Boards. Shedded for 20 years. Boards up to 3 inches thick. Near Pleasant Dale, NE. Contact; Ernie Rousek at 402-488-9032 or email: erousek@neb.rr.com.

Wanted

Logs and Slabwood. Cottonwood, cedar and pine. 4" to 26" diameter and 90"-100" lengths. Below saw grade logs acceptable. Contact: American Wood Fibers, Clarks, NE at (800) 662-5459; or email: Pat Krish at pkrish@AWF.com

Straight Line Ripsaw. Also, **Powder Wedge or Dynamite Wedge** for splitting large logs. Contact: Carl Hinds, 450 Gulf Rd., S. Sioux City, NE 68776. Phone (402) 494-2127 or cell (712) 281-1472.

Services and Miscellaneous

Woodshop Services. Millwork made from your lumber on my planer/molder. Chris Marlowe, Butte, NE (402) 775-5000. Marlowepasture@nntc.net.

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. North America's largest source of used portable sawmills and equipment. Contact: Sawmill Exchange (800) 459-2148, website: www.sawmillexchange.com.

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 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. **Black Walnut** (12 trees) 1,983 bf Veneer - 253 bf Lumber 1 - 480 bf Lumber 2 - 941 bf Lumber 3 - 309 bf		Karloff 6/2011	Charles Newlin 4238 Red Fox Lane Fort Calhoun, NE 68022 (402) 468-5641 Location: Washington County
2. **Black Walnut** (40 trees) 4,064 bf Veneer 3 - 352 bf Lumber 1 - 369 bf Lumber 2 - 1,048 bf Lumber 3 - 2,295 bf		Karloff 6/2011	Kent Hippen 71917 608 Avenue Virginia, NE 68358 (402) 520-0807 Location: Gage County
3. **Black Walnut** (2 trees) 30" - 34" diameter			Emmett Albenesius (712) 490-0280 email: ecafarms@aol.com Location: Dakota County