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WOOD WASTE AND WOOD FACTS

by

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The wood-using industries of the United States as a group rank third in value of output among the industries of a nation noted for its industrial activity. Wood is the raw material which supplies this group and a shortage of wood more than any other factor would quickly place these industries on the inactive list. A plentiful supply of timber, therefore, is essential to the continued activity of these and related industries and to the well being of our population.

In the United States we are using our timber over four times as fast as it grows. The increment of wood through growth is six billion cubic feet per year while the annual drain on our forests amounts to something over twenty-five billion cubic feet annually. Our supply of soft wood saw-timber alone is being cut 8.6 times faster than we are growing it. In Idaho the annual growth roughly estimated at 1/4 billion board feet, is only a fourth of the annual drain, 1.07 billion board feet (1923 data), which does not include the loss due to destruction of reproduction. However, Idaho forests under proper management, could be made to produce about six times the present annual growth. What will happen as the annual cut steadily increases and our forest supply dwindles?

Such figures are convincing enough to make lumbermen pause and consider what the future holds for the industry. The Nation's needs

for wood must be met. How, then, shall we proceed to meet the emergency? Shall we draw on the supply of foreign woods, neglect our own industries and pay exorbitant prices for our lumber? American enterprise is not likely to select this way out. There are three lines of action by which timber and wood products can be produced to meet the demand. The first, by increasing forest growth; second, by reducing losses from fire; third, by reducing waste and promoting better utilization of forest products. Of the three lines the last offers possibilities for immediate relief. Improvements in methods of manufacture and in the use of forest products can be made without great delay since the information is already available. The Forest Service states that "If present best practices and knowledge were put into effect to the fullest extent economically feasible, it is estimated 2/9 of the present drain on the forests could be accomplished". This, it must be noted, refers to the economies already proved to be feasible. Further economies at least equaling these are bound to be developed through research.

When we reflect that in the United States as a whole the total loss annually of forest products by decay during storage and in service is estimated to equal over four billion cubic feet of standing timber, nearly a fifth of the annual drain upon our forests, and that in Idaho alone the loss due to decay in the standing timber is estimated at approximately thirteen million board feet annually, we begin to realize the part that waste plays in our

conservation problem.

The total of all losses in the United States due to waste in the woods operations equals about 5.5 billion cubic feet per year of standing timber or about 24 per cent of the forest drain. The losses in the mill total over 2.8 billion cubic feet of standing timber with a net loss of considerably less where conversion into other products are effected. Loss in conversion of wood into paper sometimes reaches 33 per cent of the net value, while losses due to seasoning practices represent over one billion cubic feet of standing timber or more than 4 per cent of the forest drain. About $\frac{1}{2}$ billion cubic feet of standing timber represents the losses in the remanufacturing process and double this amount occurs in a variety of unclassified losses such as improper design, unsuitable grading rules and sap stain in lumber.

Wood waste prevention, therefore, offers a means of attack whereby we can reduce by $\frac{2}{9}$ the annual drain upon our present resources. This attack can be carried on by the use of available knowledge. In other words, wood facts may be used immediately to prevent wood waste. For example the Forest Service has found that a large number of resinous softwoods can be used in the manufacture of and paper. Ordinarily all the resinous volatile products are wasted. A process designed to remove and recover the distillation products from the chips without injury or loss in amount of fiber for pulp not only would prevent waste but would furnish materials such as rosin needed for the manufacture of paper. It would also increase the utilization of logging debris and cull for pulpwood purposes and thus aid in reducing the fire hazards on the logged-off areas. Many illustrations could be given but most of them are obvious.

The School of Forestry has been active in promoting forest growth, and particularly active and helpful in promoting forest protection, principally from fire. It now remains for it to enter the third field and promote less wasteful production, manufacture and use of forest products. With this object in view the forest products laboratory of the School of Forestry offers to all interested in the logging, milling, manufacture and use of wood and its products a class of informational service of particular value in waste prevention. This laboratory is ready to furnish wood facts that may be applied to the prevention of wood waste. This service will include information regarding the identification of woods, the properties and use of woods, wood preservation, wood utilization, diagnosis of decay and stain in wood, detection of early decay and other defects of wood products, lumberyard sanitation and the other diseases of trees. It is believed this type of service can be made extremely useful to the many who are interested in forests and forest products. Laboratory tests, informational data and personal services by staff members on logging area, in lumber yard and mill will be available in the attempted solution of a particular problem.

There are a great many industrial problems connected with the harvesting of wood and its manufacture into useful wood products. Many of these problems deal with the specific properties and of individual woods. Another group is concerned with the defects found in wood and wood products. Among these decay and sap stain have never ceased to be serious problems and sources of great loss. Lumberyard sanitation looms large as a ready means of preventing annual waste and the innumerable

problems connected with tree diseases, particularly heart rots, are ever recurring ones. Proper chemical treatment of mill, pile, and tram foundations and other timbers may often prevent costly replacement charges. Better practices in lumber air seasoning or kiln drying may prevent the appearance of defects which seriously degrade the stock and constitute a large percentage of our seasoning losses. Heart rots formed in the living tree may continue to develop in the railroad tie, bridge timber, pole or post and in structural timber and lumber in some cases in spite of treatment with wood preservatives. How is this to be remedied? Again we are faced with the problems of silviculture and management which may develop as a result of the attack by the white pine blister rust. How can we continue to grow sufficient white pine in spite of the disease? What about the utilization of the less desirable species immune from blister rust? These are random problems that serve to bring home the importance of waste prevention. Many of them can be solved almost immediately by the practical application of wood facts. Others will need the slower process of scientific investigation for their solution.

NOTE:--All wood samples sent in for examination should measure at least six inches long, four inches wide and one inch thick and be accompanied by notes giving detailed information as to whether the wood is green, air dried or kiln dried, region from which obtained, etc. All inquiries and samples should be addressed to the School of Forestry, University of Idaho, Moscow, Idaho.

WOOD FACTS.

Thinner Saws.

A California box factory has recently installed new sawing

equipment which cuts six box slats out of stock which previously yielded only five slats-- a direct saving of one slat for each piece resawed. Here is a case where saw kerf waste was turned into box material by the use of thinner saws.

End Coating for Stored Logs.

Preparations for coating the ends and barked sides of logs to prevent end checks, sap stain and decay recommended by Loughborough and Hubert in an article published in the Southern Lumberman for December 20th, 1924, were tested recently on freshly cut logs in the southern hardwood region. The results of the tests indicated that one of the mixtures containing filled hardened gloss oil and cresol prevented end check, sap stain and decay in red gum logs left on the logging area or in the mill yard for eight weeks. The more promising end coatings should be tried on the commercially important lumber producing species of Idaho in an effort to prevent the waste due to end checks and to log stain which occurs during prolonged log storage.

Wood Preservation.

The savings realized from the universal preservation of railroad ties hold promise of a reduction in renewals of 35 million ties annually aggregating a net profit of seventy million dollars annually. (Railway Age, Feb. 16, 1924). This would mean a substantial reduction of the annual forest drain.

Farmers in Illinois require annually 20,530,000 fence posts for renewals. The average life of a post is 10 years or less. By the universal preservation of these renewals the average life will be increased to 20 years or more thereby requiring annually only 10 million posts where 20 million are now needed. (Wood Preserving News, Nov., 1924).