

# Ways To Stop Losses of Tanbark

*Marvin E. Fowler*

One way to husband our limited resources of vegetable tannin materials is to utilize them as fully as possible. That, in turn, calls for cutting out the wastes now resulting from practices that do not prevent deterioration.

Chestnut wood is the most important source of domestic tannin for making heavy leather. Nearly all this wood now being utilized is from trees that have been killed by an introduced fungus blight. Although dead trees can be used for extracting tannin, they will eventually succumb to windthrow, decay, or other deterioration if left in the forests. Extract plants can no longer supply the tanneries with all the chestnut extract they need. After the tannin has been extracted, many plants utilize the spent wood for pulp in making paper and other pulpwood products.

Bark from the chestnut oak and hemlocks comes next to chestnut wood in importance as domestic sources of tannin. Their average tannin content is about 11 percent for hemlock and 12 percent for chestnut oak. The shortage in chestnut tannin increases the existing need for oak and hemlock tannin. Tanneries that use those barks have been unable to obtain as much bark as they need, even at higher prices. For some years we have had to import large quantities of tannin materials—more than two-thirds of the amount we need to make our leather.

Bark will probably provide most of

our domestic tannin when chestnut extract is no longer available. As additional supplies of bark tannin are needed, it is important to handle peeled bark so as to prevent loss from improper curing.

The time when the bark of chestnut oak and hemlock separates easily from the wood differs from year to year, depending on the condition of the tree, rainfall, altitude, exposure, and temperature.

Chestnut oak bark peels when there is abundant soft sappy tissue beneath it and before the bark and wood tissues are bound together by interlocking growth projections. Usually that is from just before the time when the buds swell until the leaves reach mature size. The period normally lasts 6 to 8 weeks, but is sometimes shortened by a long spell of dry weather.

In hemlocks, the growth projections do not form and bind the bark to the wood, and usually the sappy tissue beneath the bark is sufficient to permit peeling from early spring until autumn.

The bark tightens earlier on oaks and hemlocks of low vigor than on fast-growing trees. During the peeling season, the bark peels most easily right after a tree has been cut. It tightens rapidly as the tissues dry. Hemlock cut in the winter, however, usually peels satisfactorily the following May or June. Bark peeling of both chestnut oak and hemlock can begin early in spring at lower elevations and on southern slopes. The operations can finish on higher and northern slopes where the bark is slower to tighten.

The heavy bark at the base is usually peeled before the tree is felled. The trunk is girdled about breast high and is peeled to the ground. Some peelers remove the bark from the stumps after the trees have been cut. It is easier to peel the bark from the underside of the

trunks if they are felled across a log or on uneven ground.

After trees are felled into open spaces, encircling cuts are made with an ax every 3 or 4 feet on chestnut oak and every 4 or 5 feet on hemlock. Then, with an ax or the sharp side of a spud, the bark is split lengthwise between the girdling cuts on the top of the felled log.

Chestnut oak bark that has begun to stick can be loosened, and peeling made easier, by pounding it with the butt end of a poleax or with a sledge hammer. The bark is peeled from the tree with a blunt instrument, such as a spud. Bark 8 to 18 inches wide is easiest to handle. Smaller pieces increase labor costs, because the bark is moved by hand in the woods and at the tanneries or extract plants. Such bark may also deteriorate more in storage.

During a good bark-peeling season and with mature trees, a man can fell and peel an average of a ton or more of bark a day, but production varies with weather and woods conditions. Hemlock bark generally peels more easily than chestnut oak bark. It is taken off the tree in larger pieces. A ton of bark is usually obtained from 1,500 to 2,000 board feet of hemlock, depending on the size of the timber and the thickness of its bark. Sometimes a ton of bark can be obtained from 1,000 board feet of large virgin hemlock.

Under normal conditions, if the bark is handled properly, it will cure satisfactorily without developing mold or decay. Long rainy seasons or frequent periods of dense fogs may create conditions favorable for the development of molds on even the best handled bark. The results of experiments conducted cooperatively by tanneries, extract plants, and the Department of Agriculture indicate a relationship between curing methods and quality of bark. Under adverse curing conditions, bark may remain very wet and start severe molding. In controlled experiments with chestnut oak bark in the East and with hemlock bark in the

East and in the Lake States, improperly cured bark was found to contain less tannin than properly cured comparable bark. Under the most adverse conditions the badly molded bark contained up to 25 percent less tannin.

Under normal weather conditions, no significant difference exists between bark spread out to dry for several days before being placed in ricks and bark ricked immediately after it is peeled. But wet bark should be spread out until the free surface moisture has evaporated before it is placed in ricks. Bark placed in ricks while the outer, or ross, side is wet may mold and deteriorate.

OPEN, DRY, and well-ventilated places are best for bark ricks. A rick of bark in a damp, poorly ventilated place may mold and cause a loss of tannin. Ricks are usually 3 to 4 feet high and 6 to 8 feet long. They are built off the ground. Bark may be stacked across two logs, so that air can circulate under the rick. The outer, or ross, side of the bark should be turned up. Occasional narrow pieces inserted crosswise at the front and back of the rick will separate the bark and improve ventilation. Raising the front of the rick with a few extra pieces of bark permits drainage of rain water. Large pieces of bark placed shinglewise on top will keep out water.

Bark left scattered in the woods, even if the inner side is turned down, does not cure so satisfactorily as that placed in ricks. In some operations the crew peels bark during the morning and early afternoon and then stacks the bark peeled that day. In other operations the bark is not stacked until the second day. In still others one man stacks it continuously. Thin hemlock bark should be stacked soon because it curls easily while drying.

Bark should be left in ricks in the woods until it is dry enough to break with a clean fracture—usually 2 weeks or longer. After drying, it may be left there for several months, if more convenient to the operator and bark buyer. Bark is usually allowed to age for at

least 3 or 4 months after peeling before being used for tannin.

Properly cured bark is clean, has a bright flesh on the inner side, and is free from excess moisture. It breaks clean and not in strings, and it is not molded or mildewed. But improperly cured bark may be dark and covered with molds. Such bark is likely to contain less tannin than if it had been properly cured.

It is customary to arrange with a tannery or with a bark buyer for the sale of an estimated quantity of bark before peeling is begun. The distance the bark must be hauled to market or to a railroad siding for shipment by rail is an important consideration.

Bark is usually purchased by weight. A cord (4 x 4 x 8 feet) of cured bark weighs approximately a ton. Bark buyers generally dock the price for bark improperly cured, compensating at least for the weight of excess moisture. Bark so wet that it may decay or otherwise deteriorate in a bark stack may be entirely unsuitable.

Dirt and black mold on bark are objectionable. Logs from which bark is to be peeled should not be skidded through mud or floated in streams or ponds.

Leaving peeled logs on the ground until the peeling season is over or until the following winter results in very little deep checking and most of the cracks are removed in the slabs when the logs are sawed into construction lumber. Peeled wood also may be used for railroad ties, mine props, posts, and paper pulp.

Your regional or extension forester or county agricultural agent can give you information on markets for bark and peeled trees, and on areas in which tanbark stumpage is available.

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THE BUREAU OF AGRICULTURAL ECONOMICS of the Department of Agriculture has undertaken studies of consumers' preferences among selected crops and products. The basic aim is to help find ways for improving the consumption of agricultural products by exploring new markets or better utilization of existing markets. Or, as set forth in the report of one study of potatoes (issued in May 1949): "Producing potatoes is only part of a farmer's job. Potatoes must be sold. Growers and shippers want to know as much as possible about markets for potatoes. They want to produce and sell potatoes in line with what consumers want. People naturally buy more when they get what they want. If farmers and handlers have a knowledge of consumers' likes and dislikes they can try to get just the right potatoes moving to the group wanting them." Funds for the research were provided under the Research and Marketing Act of 1946.

Among the available reports are: *Citrus Preferences among Household Consumers in Louisville and in Nelson County, Kentucky*; *Potato Preferences Among Household Consumers*; *Men's Preferences Among Selected Clothing Items*; *Women's Preferences Among Selected Textile Products*; *Potato Preferences Among Restaurant and Hotel Buyers*; *Potatoes in Hotels and Restaurants*; *People and Potatoes*; *Consumers' Taste Reactions to Three Experimental Blends of Orange and Grapefruit Juice*; *Mothers' Preferences Among Selected Items of Children's Clothing*; *Rice Preferences Among Household Consumers*; *Consumer Preferences for Apples and Pears*; *Men's Preferences Among Wool Suits, Coats, and Jackets*; *Preferences for Citrus Among Household Consumers*.—Raymond C. Smith, Bureau of Agricultural Economics.