

standard genuine product, recognizes three kinds of turpentine, (1) gum spirits of turpentine, made from the gum from living pine trees, and the first kind of turpentine known, (2) steam-distilled wood turpentine, made by steam distillation of pine wood, such as old stumps and resinous knots remaining on cut-over land after removal of the timber; and (3) destructively distilled wood turpentine, made from such pine wood by the destructive-distillation process.

Secretary May Establish Standards

The act further provides that the Secretary of Agriculture may modify the standards established by the law when the interests of the trade so require and may establish new standards for turpentine for which no standards are provided in the act. Although the law, like most other Federal laws, apparently applies only to the sale of products in interstate commerce, any purchaser can materially assist in its enforcement, and at the same time protect his own interest, by specifying in his order the particular kind of turpentine which he desires in the terms just given, which are used in the act, insisting also that it be labeled and billed in the same terms. If he will buy turpentine in this way, and have it billed in the same way, the Federal naval stores act will protect him, even though the transaction is conducted wholly within one State.

Many of the States have laws governing transactions in paints, varnishes, turpentine, and linseed oil. These too are for the protection of the citizens of the State. In case a purchaser has reason to think the article bought is not what it is represented to be, he should first take the matter up with the proper State authorities, usually the food and drug commissioner or the commissioner of agriculture, whose office is usually at the capital of the State. In order that the United States Department of Agriculture may afford a purchaser legal protection under the Federal naval stores act a representative of the department must draw the sample and obtain from the purchaser the necessary documents having to do with the sale of the turpentine. However, when the purchaser has good reason to think that the article in question is not what it is represented to be, the department is glad to receive samples, accompanied by full information giving the name and address of the seller. Such samples will enable the department to more actively and effectively enforce the act, thus gradually putting an end to the adulteration of turpentine.

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NAVAL-STORES Yield Much Affected by Methods of Chipping It is customary for naval-stores operators to count on a steadily declining yield from the first year of working the trees, amounting in many cases to as much as 5 barrels of spirits to the crop annually for the first four or five years. But with efficient work under Government specifications on the Florida National Forest the annual loss during eight years continuous operation of front faces has been kept to less than one-half of that. At the Starke (Fla.) branch of the Southern Forest Experiment Station the yield during the fifth year of conservative work on young slash pine timber has been between 85 and 90 per

cent of the first year's run. This represents an annual decline in yield of only about $1\frac{1}{2}$ barrels of spirits to the crop on 40-barrel timber.

The loss in dead trees and trees abandoned because of dry face has also been very much reduced through conservative chipping. In commercial practice whole stands of timber are sometimes wiped out by fire and windbreak, following heavy turpentineing, and it is not uncommon to see down timber and abandoned faces scattered through old turpentineed stands. With light work the mortality during a four-year period in second-growth timber can be kept to 0.3 per cent annually, as has been demonstrated on 1,000 trees operated by the Forest Service at Starke.

It is good practice to place faces under the heaviest part of the tree crown. Experience has shown that on that side of the tree the wood is apt to be more productive than on the side under a thin top, where dry face is likely to develop.

The cut for inserting tins should be very light, barely cutting the wood. At most it should not exceed the greatest depth of the streak. Any cut which interferes with the circulation of the sap also tends to interfere with the functioning of the resin ducts.

Depth of Chipping

Among the variations in chipping methods which affect the yield, the most important is depth of chipping. During four years of work deep chipping in long-leaf timber at Starke has resulted in 10 per cent greater decrease in yield than shallow chipping. In crowded stands of young slash pine the difference has been even more marked, amounting to 23 per cent in four seasons. There has also been a great deal more dry face in the deeply chipped groups. Results so far obtained indicate that chipping between one-half inch and one-fourth inch deep for long-leaf pine and about one-half inch deep for slash pine will give the best sustained yield.

Tests conducted by the Forest Service have shown that hacks which cut away one-half inch or less of wood for each streak produce a greater yield over a four or five year chipping period than hacks cutting streaks three-fourths inch wide or greater. At Starke, Fla., two groups of trees were chipped one-fourth inch wide and three-fourths inch wide, respectively. Although the wide chipping gave slightly more gum during the first year, the narrow chipping is yielding at the rate of 8 barrels of spirits to the crop more than the wide during the fifth year. The faces in this narrow chipping test were not "turned to a puller" until the middle of the fifth season, whereas it is not uncommon in commercial practice for faces to be so high that a puller must be used before the end of the third year. The narrow chipping prolongs the working life of the face by one to three years, with an increase in cuppage value of \$500 a crop for each additional working year.

Close Cupping Causes Loss

Heavy loss is brought about by close cupping; that is, the chipping of trees that are too small, the placing of two faces on trees that should have only one, and the use of wide faces. A group of small two-face trees at Starke has been compared with a similar group with only one narrow face to a tree. During the first year the yield

per face from the two-face trees was 92 per cent as much as from the single-face trees. During the fifth year, however, the yield per face from the double-face trees dropped to 62 per cent of the yield obtained from the trees with only one face, and is now only 53 per cent of the first year's yield. Single faces cutting away one-half of the bark circumference yielded 24 per cent more than single faces cutting only one-quarter of the circumference during the first year, but only 16 per cent more during the fourth season. There was much breakage and dry face in both the wide-face and the double-face groups, whereas the conservatively faced group had very little loss from this cause.

Other variations in naval-stores practice result in variations in yields; but deep chipping, wide chipping, and close cupping, account for a very large proportion of the damage done to young stands of timber. Through the use of conservative chipping as described above, damage may be avoided and yields held to a high figure. The result is greater profits with no extra operating costs and young timber kept in the best possible condition to produce timber products as well as naval stores.

LENTHALL WYMAN.

NEGRO Extension Work Much Aided by Use of Movable Schools The use of the movable school in negro extension work was first developed in Alabama in conjunction with the extension activities of Tuskegee Institute. To-day it is an important feature of the extension work among negroes in Alabama. The object of the movable school is to present to the farmers concrete illustrations of a kind that will prove to them that they can do better work, that they can make more produce on a small number of acres of land at less expense, and that at the same time they can beautify their homes, thus dignifying and making country life more attractive and remunerative.

The equipment and personnel of the movable school is moved from place to place in a large specially designed truck, demonstrating in each community visited the latest methods recommended by the extension service. The truck carries a complete stock of farm implements and home conveniences such as the average farmer would be able to purchase or construct and operate. Accompanying it are three trained workers—a man to demonstrate the use of the farm equipment and teach improved methods of farming; a woman to show how to make and use the home conveniences, how to care for poultry, and how to cook, can, and conduct the home on a more healthful and economical basis; and a nurse who gives demonstrations in simple practices of home sanitation and hygiene and in care of the sick. The truck also carries a complete motion-picture outfit and a phonograph. The workers conduct practical and constructive agricultural, home-economics, and health teaching in a most effective manner.

The movable school owing to its novelty and practical aspect apparently is of sufficient interest to cause negro farmers to assemble in large groups at homes strategically selected in the communities visited. It is here that the movable school and its working force go to the bottom of the negro rural problem. The first thing that happens at the home chosen for the school site is that the head of the family usually begins cleaning up around the oft-times miser-