FORESTRY

Tree Farming Is New Business

This form of agriculture is conducive to rocky land. Markets must be near for by-products although some manufacturing steps can be carried out on the farm.

By A. C. MONAHAN

➤ TREE farming is a new term for a distinctive American business. It refers to a farm devoted to growing trees and obtaining income from lumber and by-products. A tree farm may include a little ordinary farming on the side, but lumber-growing is its principal activity.

The term tree farming has been in use only since the beginning of the present decade, but there are now well over 1,600 recognized true tree farms in the United States and they are well distributed. This is a figure from American Forest Products Industries, an organization encouraging their establishment in the interest of a perpetual lumber supply for the nation.

Some of these units are too large to be regarded as farms, but many are one-family units of a few hundred or a few thousand acres. They provide year-around occupation for the family group, and income for their welfare. Trees are the crop, not grain, cotton, cattle or poultry, as in other farming.

Some of these family-unit tree farmers engage in no activity but planting, cultivating and harvesting trees. Others have small sawmills and other equipment, so that they can turn out finished lumber and other wood products. These are more profitable, particularly if they have facilities for turning into marketable products what otherwise would become waste.

Scientific Forestry

The successful tree farmer must know much about modern scientific forestry. He must be able to recognize when trees have made their maximum growth and will make no further gains if left standing. He must know the best logging procedures to get out the ripe timber without injury to the younger trees still in a growing stage. He must know how to protect his woodlands from all the destructive insects and fungi that can ruin a forest. He must know how to protect it from fire. Fire in a wheat field destroys a one-year crop; fire in a forest may destroy many years of growth.

Selective logging is the number one essential on the tree farm. This means that repeated surveys must be made to determine which trees are ready for harvest. It is a system in contrast with older methods of logging in which everything was cut. This means great waste, and the necessity of reseeding if the land is to be used for future tree crops.

There are many factors that enter into successful tree farming, as there are in all other types of agriculture. The land must be suitable. It is not generally considered wise to use fertile plowland for tree growing because greater profits can usually be obtained from other crops. Inexpensive, rough, hilly and rocky land can be used. The growth may be slower, but the investment is much less, and good forest cover has a tendency to build up soil fertility.

Location is of particular importance. Logs and sawed lumber can be shipped long distances but the tree farmer needs a nearby local market for by-products, such as firewood. One of the greatest wastes in major logging operations in the remaining virgin forests is due to the distance of markets for anything but the lumber.

The ideal location for a tree farm is within trucking distance of a town where there is a market for firewood and factories for treating wood products for fence posts, railroad ties, telegraph poles and piling. It would be well also to be near plants that use such wood wastes as sawdust and stumps, in manufacturing wallboard, plastics, wood flour, molasses for cattle feed, and as a source of organic chemicals derived from wood or made from wood derivatives.

Some of the manufacturing processes can be carried out on the farm itself by the tree farmer where the necessary investment in equipment is not great. Small kilns for charcoal making are now used on some tree farms. A relatively new process of making a fine quality wallboard from sawdust and other wood wastes by chemical treatment requires little skill and only inexpensive equipment. It is a process developed at the Polytechnic Institute of Brooklyn.

Processing Sawdust

In this process, sawdust and other ground-up wood wastes are put in a mixer with the chemicals, and churned for a few minutes. The pulp resulting is then squeezed in a hydraulic press to form strong, grainless boards. A ton of sawdust will make 2,000 square feet of first quality, strong, water-resistant wallboard.

For tree farmers with their own sawmills, and planers to turn out dressed lumber, the shavings may become a source of income by manufacturing them into boards. Molded boards of softwood shavings can be produced at a price competitive with ply-

SELECTIVE LOGGING—When this Washington tree farmer cut the tree from the stump on the left 26 years ago, the Douglas fir on which he has his hand was a seedling.

TREE HARVEST TIME—A crop of cut timber is examined by a New England tree farmer.

wood or lumber under certain conditions. A resin is employed as a binder; heat and pressure do the rest.

A new process of making good pulp for paper from deciduous softwood trees opens up a new possible market to tree farmers for wood that otherwise might be unmarketable. Such woods as beech, birch, maple and poplar can be used. Most paper pulp is now made from evergreen trees, such as spruce, fir, hemlock and pine.

With the present tremendous demand for woodpulp, evergreen pulpwood trees are becoming scarce. With the new process, sponsored by the U. S. Bureau of Standards, woods never before used in quantities can be utilized to relieve the world's newsprint shortage. The process is similar to that used in making other pulp, but the addition of a chemical is required. It is a synthetic resin known as melamine formaldehyde. It is an important discovery because it makes the erection of pulp mills possible in areas with little evergreen but with plenty of other trees.

Chemicals from Wood

The production of organic chemicals from wood has lagged behind possibilities, perhaps because of the ease with which many of them are obtainable from coal, petroleum and other sources. In nationwide programs being formulated for the elimination of wood wastes, the production of chemicals is included.

Wood alcohol, distilled out of wood by heating it in a retort from which air is excluded, is well known. Charcoal is left in the retort. Gases driven off in the process include such usable ones as carbon monoxide, hydrogen, methane and ethylene. A dark-colored liquid that distills off contains acetic acid, acetone and some tar and oils.

The cellulose of the wood may be broken down into many useful products by chemical treatment. Important among these are the wood sugars obtained. Wood sugar can be used to grow feed yeast and to make ethyl alcohol. Perhaps a more important use, and one in which there is great interest at the present time, is in cattle feed.

Wood Molasses

For this purpose, it is used in the form of what is called wood molasses. From 120 to 200 gallons of molasses, 50% sugar, can be made from a ton of wood wastes. Sugarcane molasses, usually blackstrap, has long been used for livestock feed. Cattle seem to do well on wood molasses and like the taste. A commercial process for obtaining wood molasses has recently been developed by the U. S. Forest Products Laboratory, Madison, Wis., and the product compares favorably with blackstrap for many uses in addition to cattle feed.

Tree farming is an activity of far more than local importance. Metal reserves can become exhausted and can not be replaced. With proper acreage devoted to timber growing, there will always be available lumber for all purposes. Also, tree farming promotes other types of land use. Forest-covered lands hold water, and act as reservoirs to prevent floods and to provide moisture for cultivated crops during dry seasons.

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GENERAL SCIENCE

Award to Be Made for Kindness to Animals

➤ BOYS and girls who show kindness to animals ordinarily do so without expectation of praise or reward—other than the gratitude of the animal itself. However, the American Veterinary Medical Association, with headquarters in Chicago, has announced that an award consisting of a framed certificate and a $100 U. S. savings bond will be given to some boy or girl under 18 for an outstanding act of help or mercy to a domestic animal.

This may be a rescue, some project in behalf of animals, or a written essay, Dr. S. T. Michael of San Francisco, chairman of the award committee, stated.

Nominations close May 1, and the winner will be announced on July 11, at the A.V.M.A. national convention in Detroit. Entries should be sent to the American Veterinary Medical Association, Chicago, Ill., or to Dr. S. T. Michael, 2500 Sixteenth St., San Francisco 3, Calif.

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