

TECHNICAL NOTES

FOREST PRODUCTS LABORATORY

U. S. FOREST SERVICE

MADISON, WISCONSIN

No. E-2

POTASH FROM WOOD ASHES

An investigation concerning the production of potash from wood ashes, conducted by the U. S. Forest Products Laboratory at Madison, Wisconsin, disclosed the following facts;

The ash content of hardwoods ranges from .05% to 3.02% with an average of .61%. The ash content of the coniferae seems to vary from .02 to .82% with an average of .30%. There may, however, be very wide variations in the ash content of the same species, as is instanced by black walnut with a minimum ash content of .21%, a maximum of 1.96%, and an average of .79%; or chestnut oak whose minimum, maximum, and average ash contents are respectively .33%, 1.96%, and .77%.

The potash content of pure, well-burnt ashes may be very high, ranging from 10% up to 35%. These figures are, however, of but little commercial value, since all commercial ashes contain impurities, such as sand, sawdust, or charcoal, and these impurities may make up a very large per cent of the total ash. The potash content of commercial wood ashes may vary over a comparatively wide range, depending somewhat on the wood and the kind of furnace or stove used. The average of 111 analyses made in Connecticut from 1906 to 1915 was 3.6% K_2O .

The initial cost of a potash plant of 24 leachers, including building, is between three thousand and four thousand dollars. The cost of manufacture of potash, not including the cost of the wood ashes, will vary from about 7 to 17 cents a pound, depending upon the kind of ashes obtained and whether or not the plant is running at full capacity.

It is evident, therefore, that the manufacture of potash from wood ashes will not be a paying proposition when normal prices are resumed, except in those cases where the plant has already been paid for and is owned by the potash maker who makes no charge for his own labors but accepts his profit as compensation for his work. Under these conditions the cost of manufacture of potash, exclusive of the cost of ashes, may be reduced to about 5 cents a pound.