

TECHNICAL NOTE NUMBER 154
FOREST PRODUCTS LABORATORY · U. S. FOREST SERVICE · MADISON, WISCONSIN

TREATED WOOD GIVES INCREASED YIELD OF WOOD ALCOHOL

An increase of fifty per cent in the yield of wood alcohol may be obtained by means of an inexpensive treatment consisting of the addition of a small percentage of sodium carbonate to the wood before distillation. Experiments at the Forest Products Laboratory, Madison, Wisconsin, show that this increased yield may be obtained without diminishing the yield of acetic acid. Contact of the carbonate with all of the wood is necessary to secure the full benefit of the treatment; hence the method is likely to prove the most valuable in connection with the distillation of sawdust or small blocks, because of the difficulty of securing thorough impregnation with larger pieces. Saturation with a solution of the carbonate is a sufficient treatment for the sawdust, but a pressure treatment is necessary to impregnate the wood blocks.

Below are some of the actual results obtained at the laboratory.

SAWDUST UNTREATED AND TREATED WITH SODIUM CARBONATE AND BRIQUETTED

Species	Catalyzer	Yield in per cent of original weight		Remarks
		Alcohol	Acetic Acid	
Maple	None	1.61	5.22	Average of 4 runs
Maple	1.5%	2.39	5.26	Average of 3 runs
White oak	None	1.17	4.91	Average of 2 runs
White oak	0.5%	2.58	5.09	

BLOCKS OF WOOD UNTREATED AND TREATED WITH SODIUM CARBONATE

Maple	None	1.67	7.65	
Maple	1.12%	2.16	6.74	Pressure treatment
Oak	None	1.20	5.56	
Oak	1.03%	1.79	5.58	Pressure treatment

Other amounts and other chemicals were tried, but the results given are the most promising of any.