

Weight, Volume, and Moisture Content Of Sawdust from Selected Southern Species

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A STUDY OF THE WEIGHT-VOLUME relationships and moisture contents of sawdust from important hardwoods of the Mississippi River bottom lands was recently made by Mississippi State University in cooperation with the Southern Forest Experiment Station. (Sawdust presently is used to a limited extent in the manufacture of wood pulp, and a rise in consumption by this and other segments of the fiber industry is anticipated as technical problems are solved.)

Sawdust from hardwoods of 10 major species, plus baldcypress, was collected from the resaws of six cooperating band sawmills by a system that produced uniform packing between samples. Eight 1-cubic-yard samples, with a total weight of about 2 tons, were taken for each species. The sawdust was from logs of freshly felled trees. From each 1-cubic-yard sample, eight subsamples were collected and oven-dried for determinations of moisture content.

The average moisture contents, along with green and oven-dry weights, are summarized in Table 1. From these results and specific gravity values published by the U.S. Forest Products Laboratory, the oven-dry weight of sawdust appears to be about one-third the oven-dry weight of solid wood.

¹Forest Products Utilization Laboratory, Mississippi State University, State College, Miss., and Southern Hardwoods Laboratory, Stoneville, Miss., maintained by the Southern Forest Experiment Station in cooperation with the Mississippi Agricultural Experiment Station and the Southern Hardwood Forest Research Group, respectively.

Table 1. — AVERAGE MOISTURE CONTENT AND WEIGHT OF SAWDUST FOR 11 SPECIES.

Species	Moisture content of sawdust	Sawdust weight per cu. ft. of green volume		Solid wood: oven-dry weight per cu. ft. of green volume*
		Green	Ovendry	
		%	Lb.	Lb.
Ash, green	49	16.2	10.9	33.7
Cottonwood	126	17.2	7.6	23.1
Cypress	90	16.7	8.8	26.2
Elm, soft	78	19.6	11.0	30.0
Sugarberry	74	17.9	10.3	30.6
Oak, red	77	20.4	11.5	32.4
Oak, white	81	20.6	11.4	37.4
Pecan	83	19.2	10.5	37.4
Sweetgum	103	17.9	8.8	28.7
Willow, black	141	18.8	7.8	21.8
Yellow-poplar	109	18.4	8.8	25.0

*62.4 x specific gravity as reported in Standard Terms for Describing Wood. U.S. For. Prod. Lab. Rep. 1169. 12 pp. 1961.

Variation among sample weights for each species was small, the standard error of the mean generally being less than 5 percent when tested at the 0.05 level of significance. The weights obtained in the study can be used for changing sawdust measurements from weight to volume, or *vice versa*. The reported moisture contents are believed to be characteristic of the 11 species and may be used for converting sawdust weight from a green to an oven-dry basis.

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