

TECHNICAL NOTE NUMBER 153

FOREST PRODUCTS LABORATORY - U. S. FOREST SERVICE - MADISON, WISCONSIN

"VIRGIN GROWTH" AND "SECOND GROWTH"

Specifications often call for "virgin growth" or for "second growth" timber, yet the terms are without fixed significance, since the delivered product cannot be positively identified as belonging to one class or the other.

The popular conception of "virgin growth" standing timber is a mature forest in which no cutting has been done. While this conception may be satisfactory from certain standpoints, it does not necessarily convey the idea, in regard to the quality of the timber, intended by the user of the term, since years ago fire, storm, insects, or disease may have opened up such a stand sufficiently to give the remaining trees more or less the characteristics of "second growth" timber -- commonly thought of as timber grown following heavy logging operations.

Considering specifically the quality of the wood, "virgin growth" means timber in or from a fully stocked matured forest, the trees of which have grown during most if not all of their individual lives in active competition with their companions for sunlight and for moisture. This meaning is expressed equally well by the other terms also used, "first growth" and "old growth."

"Second growth," when applied to a forest stand, denotes timber that grew after the removal of a large portion or perhaps even all of the previous stand by cutting, fire, wind, or other means. In connection with individual trees, the term designates any tree growing under conditions approximating those that would produce a "second growth" stand. To the wood user, "second growth" signifies material cut

from either of these sources.

Virgin growth is generally thought of as slow, while second growth, due to more favorable conditions, frequently is relatively rapid, although in a crowded, even-aged stand it too may be slow from the start. A fast rate of growth is evidenced by wide annual rings. These are popularly supposed to indicate stronger and tougher wood in the hardwoods, such as ash, hickory, elm, and oak; and weaker and brash wood in conifers, such as pine and fir. Hence, for uses in which strength and toughness are essential, second-growth is sought among the hardwoods, whereas in conifers virgin growth usually is desired.

As a second growth forest attains maturity, the rate of growth slows up, and consequently the annual rings may then be no wider than in virgin growth timber of the same diameter. On the other hand, when a slow-growing, suppressed forest tree is freed by removing the neighboring trees, it may grow rapidly for a long period. It is possible, therefore, to have in the same tree some wood with the characteristics of virgin growth and some with those of second growth. Furthermore, certain individual trees in a virgin growth forest may have the characteristics of second growth throughout, and vice versa.

Instead of broadly specifying "second growth" or "virgin growth" or depending upon requirements as to the width of annual rings in order to secure good material, the Forest Products Laboratory considers it advisable to disregard rate of growth and rely upon density as a guide to quality.