

TECHNICAL NOTE NUMBER 159

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

PRONOUNCED BENEFITS FROM PRELIMINARY IMPREGNATION OF PULPWOOD CHIPS

Impregnating pulpwood chips with cooking liquor under pressure before the cooking action has commenced has been found decidedly advantageous in the soda and sulphate processes of pulping. The required pressure is obtained by pumping cooking liquor into the digester after it has been completely filled and closed. The amount of pressure necessary, duration of treatment, and other factors vary with the type of cooking process, kind of chips used, quality of paper sought, etc. Details of the process may be had upon application to the Forest Products Laboratory.

Laboratory cooks of treated chips on a 50-pound scale showed greater uniformity of cooking, increased yields, reduced bleach consumption, increased concentration of cooking liquor, and reduced cooking time.

Mill trials of the improved method on a three-ton scale resulted in increased concentration of the cooking liquor, reduced time for cooking, a reduction of the steam required for cooking from 9,000 pounds to 6,000 pounds per digester charge, and an increase in the concentration of black liquor from the digester from 15° to 18° Baume.

The saving in the time required for cooking was estimated to be sufficient to offset the time required for impregnation. The saving in steam consumption made possible an increase of from 12 to 20 cooks per day from a 250 HP steam boiler. The increase in the density of the cooking liquor was estimated to make possible an increase of 25 percent in the output of the recovery unit.