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GENERAL RECOMMENDATIONS REGARDING METHODS  
FOR WOOD WASTE UTILIZATION<sup>1</sup>

By

Forest Products Laboratory,<sup>2</sup> Forest Service  
U. S. Department of Agriculture



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Substantial progress is being made in the development and application of methods of utilizing wood waste. This does not mean, however, that methods are readily available for converting to new merchantable commodities the ordinary sawdust pile or every factory's cut-up waste, or tops and cull logs of all logging areas. Much depends on the individual's resourcefulness and on the conditions of the particular operation.

Utilization possibilities fall in two categories: (1) conversion to some finished product, and (2) use-as-is. Conversion to another product usually requires a sizable daily production of waste, often larger than what the ordinary operation has. Use-as-is or with minor modification often comes the closest to meeting requirements for the average producer.

Conversion

For the more exceptional conditions careful technical and marketing analysis should be made of possibilities lying in fiber or particle products, in certain types of resin pressed-board and molded products and in chemical derived products.

(a) Dry shavings and sawdust for wood flour, fuel briquettes, and certain types of pressed boards and molded products when quantities of waste are in the order of 10 to 20 tons or more per day.

(b) Chipped, flaked, or shredded material from green wood for hardboards and resin particle boards and allied products when quantities are in the order of 30 to 50 tons or more per day. Conventional pulping operations usually require a daily minimum of 50 tons.

(c) Hogged waste and green sawdust for chemical derived products under favorable economic conditions for fodder molasses and yeast, wood sugars and their derivatives when low cost waste is available in quantities in the order of 50 or more tons per day.

<sup>1</sup>Original report dated March 1947, revised October 1953.

<sup>2</sup>Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

Use-as-is

- (a) Slabs and edgings usually free of bark are purchased by some pulp mills for their regular line of production, sometimes as they occur at sawmills and sometimes in the form of chips cut to their requirements.
- (b) Pulpwood, fuelwood, posts, stakes, mine props recovered from logging waste are salable in many areas.
- (c) Green sawdust and coarser waste occurring at plants having steam boiler installations often find most profitable utilization as fuel.
- (d) Green hardwood sawdust for sale to packing plants for smoking meat is advantageous in some localities.
- (e) Green softwood sawdust and pole material are used in some ore smelting plants as a mix or flux.
- (f) Sawdust, shavings, and chipped wood are receiving increased attention when properly handled as a soil conditioning or mulching material. As stable bedding and absorbent of liquid manure for subsequent soil improvement some of this material has long been used advantageously. Extension of this idea to recover and produce fertilizing matter from outdoor cattle feeding pens is taking place in some instances. Also, composting waste wood material with nitrogen additive, bacterial inoculation, and sewage effluent is being done in certain instances.
- (g) Dry sawdust often finds fairly ready sale for a variety of specialty uses, in addition to wood flour and briquettes mentioned under "Conversion," including fur and metal cleaning, sweeping compounds, packing, and stuffing and the like.
- (h) Sale of dry sawdust and shavings through established dealers in metropolitan centers is often advantageous.
- (i) Solid waste, such as slabs, edgings, and factory cuttings, is often recovered most advantageously for sawed products, such as dimension cuttings, handle or turning squares, short lumber, container stock, and the like.
- (j) Solid wood waste, especially of hardwood cordwood, can often be converted to charcoal advantageously, especially for domestic uses for barbecue and picnic purposes.

More detailed discussion of the above measures and allied subjects is contained in other Forest Products Laboratory reports.