

Productivity of crushing forest residues with mobile wood grinders

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We aim to build an optimal system for transporting forest residues from forests to an energy plant.

In order to clarify some of the related parameters, in this study we measured the productivity of crushing forest residues (*Cryptomeria japonica*) by Japanese mobile wood grinders having three different engine sizes. The grinders crushed the forest residues (i.e. bottom-end and short logs, branches, top-end) and the mixtures thereof. And that time, the grinders were equipped with screens having different mesh sizes. As a result, when using the 50 mm mesh size, the productivity of crushing bottom-end and short logs was 1.43 dry-t/h at maximum engine output power of 145 kW, and thus much higher than 107 kW (1.25 dry-t/h). When using the 70 mm mesh size, the productivity measured 2.29 dry-t/h (at 145 kW). The power output of a grinder's engine is typically higher, and becomes even higher when using a larger mesh size.

Keywords: forest residues, wood grinder, screen mesh size