

Cutting tests of oil palm empty fruit bunches

ABSTRACT

The process of decomposition of oil palm empty fruit bunches (EFB) can be accelerated by chopping the bunches into small pieces. In this study, EFB cutting tests were carried out using knife blades and an experimental cylinder-type chopping machine. The knife edge angle had a significant effect on the specific cutting force and the cutting energy. For the impact cutting, the specific torque requirement was affected by the peripheral cutting speed. Increasing the speed from 5.3 to 14.3 m s⁻¹ reduced the cutting torque by 14.3%. An experimental chopping machine with a capacity of 3540 kg h⁻¹ has been developed and tested for the empty fruit bunches.

Keyword: Agricultural machinery; Agricultural waste; Chopping machine; EFB