

Title Power Requirement and Performance Factors of a Sunflower Thresher
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Abstract

A prototype sunflower thresher was designed, fabricated and tested. The performance of the machine by a PTO tractor at five levels of drum speeds; 650, 700, 750, 800 and 850 rpm and three feed rates; 2,000, 2,500 and 3,000 kg(head)/h, were used. The results showed that the no load power requirement of the sunflower thresher at a drum speed of 750 rpm (10.99 m/s) was 1.8 kW. At feed rate of 3,000 kg(head)/h and drum speed of 750 rpm; the thresher capacity was 1,098 kg(grain)/h with a threshing efficiency of 99%, grain damage was less than 1%, cleaning efficiency of 99%, grain loss of 0.82 to 1.07% and specific energy consumption of 3.86 to 4.38 kW-h/ton.