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ترد بالاصل



**The Effect Of The Engineering Parameters Of The Threshers
On The Seeds Quality In Different Cereal Crops**

By

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B.Sc. Agric. (Agricultural Engineering)

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ABSTRACT

Seeds quality and the performance efficiency of some stationary threshing machines were evaluated under different engineering parameters; drum speed; moisture-content; feed rate and drum-concave clearance. The thresher productivity, grain-damage (visible and invisible), grain losses, machine efficiency, power required and the operation costs were calculated.

Field results showed that the percentage of damaged grain increased as the drum speed increased. Meanwhile, moisture-content, feed rate and the concave clearance decreased under all types of threshing machines. The invisible grain damage was higher (about 4.5-5 folds) as affected by engineering parameters compared with visible grain damage. Germination percentage was less in rice crop than wheat crop in regard to cracking the seeds due to the invisible grain damage. The optimum operation condition - with less grain damage - for threshing wheat, was found to be 700-800 rpm (28.94-33.11 m/s) for drum speed, 14% moisture-content of grain, feed rate 1 ton/h and 2.5 cm concave clearance, while in rice was found to be 600-700 rpm (23.24-27.11 m/s) for drum speed, 16% moisture-content of grain, feed rate 1.2 ton/h and 2.5 cm drum-concave clearance. The average cost to thresh one ton of wheat grain was 19.23 L.E., compared to in rice grain 15.08 L.E.

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