

ABSTRACT

The possibility of improving the efficiency of the cylinder-concave assembly of spike-tooth thresher (Indian type) to permit the implementation of lower cylinder speed for threshing low moistured (8-9%) soybean crop, thereby reducing the risk of damage to the grain, was investigated. A test rig was used and the effect of different machine parameters such as projected length, thickness, shape, spacing and number of spikes; rib spacing in upper concave; clearance and bar spacing in lower concave on threshing performance were studied by varying cylinder speed from 361-518 m/min and feed rate upto maximum intake capacity. Prediction equations incorporating machine and operational parameters were developed. Parameters were optimized on the basis of quality and quantity of threshed material and on that basis a soybean thresher was developed.

Key words: *Thresher, Multicrop, spike-tooth, soybean, cylinder speed, cylinder, concave, cylinder-concave, drum, concave clearance, cost economics, predicted equations, performance.*