

Title            A Modified Threshing Unit for Soya Beans  
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### **Abstract**

Seed damage caused by impacts of the moving parts of crop threshing units and incorrect clearances between the stationary and moving parts of the units is of concern to seed merchants and farmers. Higher thresher unit rotor speeds favour higher threshing efficiencies, throughput and output capacities; but results in an increase in seed damage.

A threshing unit which reduces seed damage by combining lower rotor speeds with less severe impact of modified threshing fingers and appropriate clearances between the moving and stationary components, has been developed. The performance of the threshing unit with modified rotor pegs was compared with that with conventional pegs, using the same rotor drum as that for the modified pegs to serve as a control.

The performance of the modified pegs was compared with that of the conventional pegs at a 5% level of significance. Soya bean *TGX 144-22E* variety of an average moisture content of 14.6% wet basis (wb) was used. For the conventional pegs, and at a rotor speed range of 300–550  $\text{min}^{-1}$ , seed damage ranged from 1.94–2.43%; threshing efficiency from 99.09% to 99.37%; throughput and output capacity ranges of 1493–1658 and 482.4–504.8 kg/h, respectively. For the modified pegs, and at the same speed range, seed damage was from 0.83% to 0.98%; threshing efficiencies from 99.26% to 99.47%; throughput and output capacity ranges of 1525–1642 and 412.5–506.1 kg/h, respectively.

The difference in seed damage between the conventional pegs and the modified pegs was significant at 5% level of significance but those for threshing efficiency, throughput and output capacities were not.