



Improvement of IITA Multi-crop Thresher for Sorghum Threshing Tekalign Bedada*

Oromiya Agricultural Research Institute, Fedis Agricultural Research Center, Harar, Ethiopia

Email: bedada.tekalign@yahoo.com;
tekalignbedada9@gmail.com

Abstract

The improved small-engine driven sorghum thresher was produced at Fadis Agricultural Research Center with an intention to solve critical threshing problem of farmers consecutively reducing cost of threshing, labor power and grain loss. The machine was produced in the work shop according to its improved design of drum; concave, and other machine parts. Drum and concave diameter, length, thickness of row materials made of and other machine parts were diminished. Consequently the weight of the machine and its cost was decreased. The machine was tested in East Hararghe Zone, Haramaya District at a place called Ganda Haqaa. The variables considered were grain variety (Muirra and Fendisha), three levels of drum speed (500,700 and 900 rpm), three concave clearances (15, 19 and 23 mm) and three feed rates (30, 45 and 60 kg/min). The selected experimental design was split-split plot design with three replications. During testing grain moisture content was maintained at 14-16% wet basis. After the test it was observed that the threshing efficiency varied from 88.97 to 97.08%. The obtained output capacities were between 6-8.36 qt/h for the evaluated two sorghum varieties. The average specific fuel consumption was acquired 0.096 lit/qt and 0.103 lit/qt for Muirra and Fendisha respectively.

Keywords: Sorghum; threshing; threshing machine; Improvement; threshing performance/ efficiency.

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