

DESIGN AND EVALUATION OF A FINGER MILLET CLEANING MACHINE

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Finger millet is one of the most valuable food in human diet in the past as same as at present; because it contains large amount of nutrients. At the same time finger millet has a high demand in the society because most of diabetic patients are recommended to include finger millet in their diets. At present cleaning of finger millet is done manually, but it is rather difficult because it takes more time to separate impurities from the threshed finger millet. However there is no machine has been developed to separate impurities from the threshed finger millet. As a solution for this, a finger millet cleaning machine was designed, fabricated and evaluated at the Institute of Post Harvest Technology, Anuradhapura. The evaluation of the machine performances was done based on the following parameters: Machine capacity, Grain separation efficiency, Cleaning efficiency, Grain losses and Power consumption these parameters was measured at different blower speeds of 27 rpm, 32 rpm, and 37 rpm. The data obtained were analyzed by using the descriptive analytical method. The preliminary study showed that, the best performance of the finger millet cleaning machine was given at a blower speed of 32 rpm. Therefore speed of the blower was fixed as 32 rpm. At 32 rpm blower speed the machine capacity was 177 kg/hr, cleaning efficiency: 98.77%, Grain separation efficiency: was 96.85% and Grain losses were 3.14%. The power consumption of the machine was 1.39 KW. Therefore this machine can be introduced as a low cost and easy to operate finger millet cleaning machine for small scale farmers.

Key words: Finger millet cleaning machine, Design, Fabrication