Development of Groundnut Threshing Machine for Sri Lankan Varieties

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Groundnut threshing is a fundamental process in post-harvest management. The threshing process is done using manpower and machinery. The majority of groundnut growers separate the groundnuts by their hands. But the manual threshing process is inefficient and it is a very time-consuming process. At present, imported threshing machines with various capacities are used by Sri Lankan farmers for threshing the groundnut of Sri Lankan varieties with the limitations of those imported machines. The main reason is for the low productivity of imported threshing machines is that the machines are designed based on the specifications of the groundnut types available in those countries. The objectives of this project are (i) to design and develop a machine for threshing the groundnut pods from the groundnut bushes after harvesting and (ii) to develop a low-cost and efficient groundnut threshing machine for local varieties. Several field visits were made to find short coming of the available machines. Based on the field visit information, a three-dimensional design of the threshing machine was designed to avoid those short comings. The designed threshing machine is powered mechanically and size of the machine is smaller (L=1750mm) than the others. New improvements in the current design are being made by analyzing farmer's data and their ideas. In this process, two to three days after the groundnut harvesting, the bushes are threshing, which reduces the force required to separate the pods from the bushes that should be minimized damage to the pods internally and externally. This developed threshing machine can adjust the scale of air blower input area, that air input requirement scale depending on the type of groundnut. The main difference between groundnut varieties is the mass of pods. This threshing machine gives positive feedback to groundnut farmers to grow several types of groundnut in large quantities and contributes to the growth of the local economy.

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