317/C

An improved design of a string hopper machine to suit the local requirements

B S U Mendis, M T Medagedara* and D C Wijewardena

Department of Mechanical Engineering, The Open University of Sri Lanka, Nugegoda

String hoppers are a popular food in Sri Lanka and recent trends indicate a significant increase in the demand for string hoppers from food outlets. Catering for such high demands using the traditional hand press has become a tedious process and a strong need exists for mechanized or automated string hopper preparation mechanisms/machines. In Sri Lanka, string hoppers are prepared using the traditional string hopper presses or with modern hand operated lever type presses which are tedious and time consuming processes. However, there are several types of mechanized string hopper machines also available in Sri Lanka. One such type is a rotary type machine which has a piston connected to a rack having the capacity to produce around 100 string hoppers at a stretch. The main disadvantage of this machine is that the cylinder needs to be removed after each batch of string hoppers for re-filling, which tends to fatigue the operator with prolonged usage. There are many power operated machines used for the preparation of string hoppers and these are mainly manufactured in India. These machines mainly employ compressed air for actuation. The disadvantages of these types of machines are that the string hoppers produced can be irregular in shape and the need for separate equipment for supply of compressed air which makes the machines relatively expensive. The re-design of a string hopper machine was thus carried out, taking into consideration the deficiencies identified in machines currently used and the affordability to a medium scale string hopper producer. A string hopper machine which is electrically powered and having a piston-cylinder type feeding mechanism was proposed and designed, also overcoming the need of bulky additional equipment such as air compressors. A 5 cm extruding die, a mold rotator and a cutting mechanism were incorporated in the design to make the spread of string hoppers more uniform. Also, the machine can be manufactured using locally available materials, making it more affordable than its counterparts, especially for medium scale string hopper producers in Sri Lanka.

Keywords: String hopper machine, improved design

nimalim@yahoo.com Tel: +94 718571135