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Design and development of a battery operated rubber tapping machine

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There is and acute shortage of rubber tappers in the areas where rubber trees are grown. This situation has arisen because of the migration of the labour within Sri Lanka to urban areas to work in factories and the exodus of labour to Middle East, Korea, and many other countries.

This necessitates the introduction of some sort of machinery in rubber plantations so that a large number of trees can be tapped by a lesser number of workers. The rubber tapping machine described here has been designed and constructed with that intention.

The developed tapping machine consists of tapping head, motor, battery and frame. The cost of production of the machine is Rs 5512.00.

Working capacity, latex yield, quality of tapping and number of blades use in tapping head were considered as criteria of evaluation of the tapping machine. Testing was done at Yatiyana, Matara.

Working capacity of battery operated tapping knife and conventional knife are 2.21, 2.52 respectively. Therefore the working capacity of the battery operated tapping machine was 12.3% higher than the conventional knife.

Yield variations of two treatments are not significant. Average latex yield of designed tapping machine and tapping knife are 106.28ml and 109.7ml respectively. Therefore it was observed that the yield of mechanically tapped trees were some what lower than the knife tapped trees.

Although few performance criteria's of the designed tapping machine are not significantly different with the conventional knife, it is beneficial for the local farmers due to high working capacity of new designed tapping knife.

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