B-124: Improvement of cinnamon processing technology through appropriate mechanization

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A mechanism was developed to rub the cinnamon sticks to reduce the heavy labour involvement in cinnamon rubbing: system has 6 spindles, mounted on springs, which are circularly positioned in a drum. Springs for the system were constructed using steel wires of 3 different gauges viz. 0.8, 1.0 and 1.4 mm. Tension by different springs was tested by inserting the cinnamon sticks having different diameters to the device. Displacement of the springs due to an applied

load when cinnamon sticks having different diameters were inserted was measured using a Platform Balance.

It was revealed that springs of the 0.8, 1.0 and 1.4 gauges exert a load of 3.6, 5.0 and 12.6 N over an average cinnamon stick respectively. Rubbing time of an average stick with a diameter of 24 mm and length of 1.4 m by the respective springs of 0.8 and 1.0 mm gauges were measured as 87 sec and 22 sec respectively. Cinnamon bark was heavily damaged by the 1.4 mm gauge springs due to its high tension. Thus 1.0 mm gauge springs gave the optimum tension required for cinnamon rubbing.

Results revealed that the device having 1.0 mm gauge springs helps to reduce the labour involvement in cinnamon rubbing by 4 times compared to manual rubbing.