## DOWNTIME STUDY OF COTTON SWAB MACHINES D. V. Parikh and Timothy A. Calamari USDA, ARS Southern Regional Research Center New Orleans, LA Ray Rigat Yushin America, Inc. Cranston, RI Robert Briggs Hosposable Products, Inc. Somerville, NJ

## Abstract

Generally, absorbent cotton swabs are made from byproduct cotton fiber, gin motes (length 0.5"-0.75"), comber noils (less than 0.5") and other mill waste. The mill waste is bleached and finished and the bleached cotton fiber is carded. Cotton swabs of uniform weight and quality are produced from uniform weight carded sliver (coil).

A trouble-shooting investigation was undertaken at a leading Healthcare Products Manufacturing Company to decrease the downtime and increase the efficiency of manufacturing cotton swabs while improving or maintaining the quality of the swabs produced. The causes of downtime (DT) were categorized as line jams, bad tips, marked sticks, equipment repairs, out of material, sealing table, and coil breaks. Eleven (11) cotton swabs manufacturing machines of three different makes were monitored for 44 hours to determine which of the above identified causes affected DT. The DT data were categorized, DT charts were made, machine efficiencies were calculated, and the product quality was visually inspected. The compiled information was then presented and brain stormed with machine operators, line supervisors, maintenance engineer, and organizational administrator to create action items to reduce high magnitude DT. The evaluation was repeated after 4 weeks to show the benefits.

DT study thus becomes an effective tool to increase productivity and machine efficiency. Such a study can easily be made on any nonwoven manufacturing operation to increase its productivity and production efficiency.

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