

Abstract

Research Title Development of Washing System for Removing of Mealy Bug in Rambutan

Researcher Busarakorn Mahayothee¹, Pramote Khuwijitjaru¹, Chaiwat Bandaiphet², Sarawut Phupaichitkun³

Office ¹Department of Food Technology, Faculty of Engineering and Industrial Technology, Silpakorn University

²Department of Biotechnology, Faculty of Engineering and Industrial Technology, Silpakorn University

³Department of Materials Science and Engineering, Faculty of Engineering and Industrial Technology, Silpakorn University

Research Grants Research and development Institute, Silpakorn University

Year 2012

One of the most important obstacles for rambutan (*Nephelium lappaceum*) exporting, especially to European market, is a contamination of mealy bug. This study aimed to develop a washing system for removing of the mealy bug in rambutan. Effects of pretreatments with hot air and water, pressurized water at 2-4 bar, and combination of pressure spraying and a surfactant containing vegetables cleaning solution were investigated. Results showed that the hot air and water pretreatments were ineffective for removing of the mealy bug. In addition, these pretreatments adversely affected the quality of the fruit because the brown color developing on the peel. Using a full cone nozzle for spraying water at 4 bar from 4 directions (the fruit was horizontally placed), i.e., above, under, and 2 sides of the fruit, for 30 sec was the most effective mean with the removal percentage of 96.25, while spraying from above the fruit was not able to remove the bug presented around the stalk and the bottom part. No physical change was observed by this method. Therefore, the developed washing system showed a potential for implementing in an industrial scale.

Keywords: Water spraying; Rambutan washing machine; Mealy bug; Exporting