

Civilize Kanjanarat 2014: The Improvement of Supply Chain Management: A Case Study of an Aromatic Coconut Manufacturer. Master of Science (Agro-Industrial Technology Management), Major Field: Agro-Industrial Technology Management, Department of Agro-Industrial Technology. Thesis Advisor: Assistant Professor Pornthipa Ongkunaruk, Ph.D. 86 pages

An aromatic coconut (AC) is one of high potential agricultural commodities of Thailand. Currently, the AC export quantity has an increasing trend and it is also required for domestic consumption because it is tasty, refreshing and nutritious. Then, this study explores the problem of a case study company which produces and exports AC using SCOR Model. We founded 2 major problems that can be solved. First, at present the company does not have a harvest plan. Hence, raw material quality does not comply with the customer requirement and there is a difficulty of pickup truck allocation. Hence, an integer programming optimization model is proposed such that the transportation cost was minimized while meets the demand, harvest optimum age and production capacity constraints. The result showed that the model could be used as a decision support tool to solve AC harvesting and vehicle allocation problem for micro- and small-sized manufacturers. Second, the productivity of boiled AC production line is low. Then, we recorded the task time of each process and calculated the takt time to identify the bottleneck operation for line balancing. The results showed that the proposed method can reduce 32 operators and increase the efficiency line to 98.30% in the initial stage including peeling coconut husk, removing the fiber, grinding and trimming and 88.75% in the final stage including preparation, boiling, transferring and packaging. Moreover, we analyzed how to increase the efficiency of final stage or the boiler. We founded the efficiency of the final stage can be increased to 94.15% when the boiler contained 450 fruits in 10 minutes. After solving the problems, AC supply chain could satisfy customer demands and had more effective management.

Student's signature

Thesis Advisor's signature