

Pornnalin Jarrujarreet 2019: The Determination of the Optimal Collection Center Location for the Lady Finger Banana Processing Plant. Master of Science (Agro-Industrial Technology Management), Major Field: Agro-Industrial Technology Management, Department of Agro-Industrial Technology. Independent Study Advisor: Associate Professor Pornthipa Ongkunaruk, Ph.D. 68 pages.

Lady Finger Banana is a local fruit in the southern Thailand. Especially, in Chumphon Province, it has unique taste and aroma. Sripa is a manufacturer in Chumphon operated by Tha Mapring Group in Lang Suan. The factory supply chain is analyzed using IDEF0 these problems are identified and the solution is proposed for the major. We suggested that the optimal collection center location should be determined to solve the increasing of demand for raw materials and reduce the transportation cost of farmers. The collectors buy the banana from farmers at very low price and discourage them to grow banana. This study determines the optimal collection center location by Mixed Integer Linear Programming so as to minimized the total cost while satisfices the demand and capacity constraints. Currently, there is no collection center in Chumphon. We also suggest to have 5 collection centers in each area: Pathio, Tha-Sae, Thung-Tako, Lamae and Sawi. After that the spreadsheet is constructed and the problem is solved by Solver function in Microsoft Excel. The optimal solutions in Pathio is Pathio sub district, in Tha-Sae is Rap-Ro, In Thung-Tako is Thung-Takhraj, In Lamae is Suan Taeng and the last is Napho in Sawi. This research can manage the strategic supply planning for a factory help farmers to reduce transportation cost. Futhermore, the famers can ensure that their products can be sold

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