

Optimal Production Planning in Aromatic Coconuts Supply Chain Based on Mixed-Integer Linear Programming

Authors : Chaimongkol Limpianchob

Abstract : This work addresses the problem of production planning that arises in the production of aromatic coconuts from Samudsakhorn province in Thailand. The planning involves the forwarding of aromatic coconuts from the harvest areas to the factory, which is classified into two groups; self-owned areas and contracted areas, the decisions of aromatic coconuts flow in the plant, and addressing a question of which warehouse will be in use. The problem is formulated as a mixed-integer linear programming model within supply chain management framework. The objective function seeks to minimize the total cost including the harvesting, labor and inventory costs. Constraints on the system include the production activities in the company and demand requirements. Numerical results are presented to demonstrate the feasibility of coconuts supply chain model compared with base case.

Keywords : aromatic coconut, supply chain management, production planning, mixed-integer linear programming

Conference Title : ICIME 2014 : International Conference on Industrial and Management Engineering

Conference Location : Tokyo, Japan

Conference Dates : May 29-30, 2014