DESIGN OF A MATHEMATICAL MODEL FOR AN ECUADORIAN PHARMACEUTICAL INDUSTRY

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Abstract

This research considers a problem on the production planning of the pharmaceutical company LIFE. The objective is to optimize production plan resources to maximize profit. The operations research methodology is a technic that supports the decision making from a mathematical approach, which avoid any company making decisions based on intuition and experience. However, the mathematical model of a real problem is complex because it implies identification of decision variables, parameters and constraints, which are directly correlated to optimize resources in addition to maximize or minimize the objective as the case may be. The mathematical model designed in this research considers the installed production capacity, maximum and minimum inventory levels, units to import capacity, and market demand.

The results obtained shows the company LIFE can increase profit up to 17%, decrease inventory units 92%, and reduce import units to 62%.

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Keywords

Aggregate Planning, Disaggregated Planning, Linear Programming, Pharmaceutical Industry