Design of a Production Plan and Inventory of Silk Skeins from the Breeding of Bombyx mori Worms

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Abstract

The design of a production plan and inventory of silk skeins from the breeding of Bombyx mori worms is contemplated for the company Seda y Fibra S.R.L. which separates its activities into three main processes, mulberry planting and harvesting, worm rearing and silk cocoon harvesting, and raw silk production and inventory. The purpose of the investigation is to satisfy the demand raised for the 9 periods that the 1st year contemplates, for them the process 3 is raised with the model of Capacitated Lot Sizing Problem - CLSP with multiple products, it is elaborated for programming with an initial inventory zero and a variable with resulting initial inventory for a proposed demand, taking into account that the initial inventory will not always be zero. The process gives as a final product three types of threads: raw silk, schappe thread and waste, inventory for each period, and as the main product the volume in kg of raw material necessary to satisfy the demand for each type of thread in each period. It is concluded that the model with the proposed CLSP covers the operating restrictions of the process with all types of inventories.

Keywords: Production plan, Inventory, Silk skeins, Worm farming, Mulberry.

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