Optimization Model for Support Decision for Maximizing Production of Mixed Fresh Fruit Farms

Authors : Andrés I. Ávila, Patricia Aros, César San Martín, Elizabeth Kehr, Yovana Leal

Abstract : Planning models for fresh products is a very useful tool for improving the net profits. To get an efficient supply chain model, several functions should be considered to get a complete simulation of several operational units. We consider a linear programming model to help farmers to decide if it is convenient to choose what area should be planted for three kinds of export fruits considering their future investment. We consider area, investment, water, productivity minimal unit, and harvest restrictions to develop a monthly based model to compute the average income in five years. Also, conditions on the field as area, water availability, and initial investment are required. Using the Chilean costs and dollar-peso exchange rate, we can simulate several scenarios to understand the possible risks associated to this market. Also, this tool help to support decisions for government and individual farmers.