Fuzzy optimization of cost function in product mix selection problem

ABSTRACT

The modern trend in industrial application problem deserves modeling of all relevant vague or fuzzy information involved in a real decision making problem. In this paper the usefulness of the proposed S-curve membership function is established using a real life industrial production planning of a chocolate manufacturing unit. The unit produces 8 products using 8 raw materials; mixed in various proportions by 9 different processes under 29 constraints. A solution to this problem establishes the usefulness of the suggested membership function for decision making in industrial production planning. The objective of this paper is to find the optimal cost to produce 8 products using modified S- curve membership function as a methodology. The fuzzy linear programming approach is used to solved this problem. The optimal cost function is obtained respect to two major factors of degree of satisfaction and vagueness