Optimization of feed composition on the dairy cattle performance by using of Fuzzy goal programming

Abstract

In milk production, the most important part of the cost is related to animal feed cost. For this reason, to reduce the price of milk, the use of diets with the lowest price is essential. In this research, in order to provide an optimal ration based on 1398 data of Zabol Dairy farms, simple linear programming, goal programming and fuzzy-goal planning were used. The model was optimized for four different types of livestock including fresh cows, low production cows, cows between production and super cows. Also, according to the objectives of the research and in order to provide a flexible diet with fuzzy-goal method, First, an optimal program using the definitive Linear program method which minimizes the cost And then, by adding two other target functions (maximizing the nutrients and minimizing water consumption), the ideal programming model was obtained. The results showed that, considering the flexibility in fuzzy-goal method, in most of the groups, the lower cost of this method has led to the method of linear programming as an optimized ration. After performing the program in order to show the optimal program in terms of cost, a comparison between the costs obtained from the program was carried out in each group in the study unit The results showed that at least the cost of the program was less expensive. Thus, using appropriate methods can be achieved more appropriate management patterns in order to achieve the manager of the unit for better decision making. To lead to increased productivity in the production units.

Key words: Multi-criteria decision making, Ration, Dairy cows

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