Abstract

In the four decades energy consumption in Iran agricultural sector has increased beyond the rate of growth of this sector. The issue of subsidies and the effects on costs and followed by consumption pattern of inputs should be noted to the optimization of Inputs energy consumption. The purpose of this study is analysis of energy's role in agricultural production and optimize its use in the agricultural sector in the study area. The model used is multi-objective programming with interval parameter. Information needed were collected of data department of agriculture in the Kashmar city. First was estimated energy input of each of the products and each share of energy inputs in production then with regard to the objectives and constraint to optimize energy consumption in the agricultural sector in the study area was considered. optimal cropping pattern was presented with regard to different levels of available inputs. Finally the energy equivalent inputs energy efficiency values for each input was calculated in different levels of risk. The results showed difference between actual and optimal energy inputs in terms of risk-free than is less than two other. In situations that there is risk in the model, difference between actual and optimal energy levels increased. Water at all levels has most of the difference in actual and optimal values and nitrate fertilizer showed minimal differences.

Keywords: Optimization, Energy consumption, Agricultural sector, multi-objective programming

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