

عنوان مقاله:

Optimization of Energy Use of Broiler Production Farms by DEA Approach

محل انتشار:

کنفرانس بین المللی توسعه با محوریت کشاورزی، محیط زیست و گردشگری (سال: 1394)

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خلاصه مقاله:

This study applied a non-parametric method to analyze the efficiency of farmers, discriminate efficient farmers from inefficient ones and to identify wasteful uses of energy in order to optimize the energy inputs for broiler production. Data were collected from 44 broiler farms in six villages in Mazandaran province (Iran) by using a face-to-face questionnaire performed in January– February 2015 period. The data were collected from 44 broiler farms in six villages from Mazandaran province, Iran. Average capacity of surveyed farms was 18142 birds. Maximum, minimum and average meat production of farms was 2000, 3000 and 2601 kg (1000bird)⁻¹, respectively. Total energy used in various operations during broiler production was 186885.87 MJ (1000bird)⁻¹. We determined TE (Technical Efficiency), PTE (Pure Technical Efficiency) and SE (Scale Efficiency) of energy use in broiler farms using Data Envelopment Analysis (DEA). Two basic DEA models (CCR and BCC) were used to measure the TEs of the farmers based on five energy inputs and two outputs. The CCR and BCC models indicated 10 and 16 farmers were efficient, respectively. The average values of TE, PTE and SE of farmers were found to be 0.90, 0.93 and 0.96, respectively. The results also revealed that about 11% of the total input resources could be saved if the farmers follow the input package recommended by the DEA.

کلمات کلیدی:

Broiler, Data envelopment analysis, Energy savings, Management, Technical efficiency

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