

## عنوان مقاله:

New Method of Artificial Neural Networks (ANN) in Modeling Broiler Production Energy Index in Alborz Province

## محل انتشار:

مجله بین المللی تحقیقات پیشرفته زیست شناختی و زیست پزشکی، دوره 2، شماره 5 (سال: 1393)

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## خلاصه مقاله:

During the past few years, modeling in agriculture has attracted considerable attention. New modeling methods including neural networks are employed in various industries, and it is necessary that their use in agriculture be also considered. This research addressed the trend of energy use in broiler farms in Alborz Province and sought to model the trend of energy consumption and production in these farms. For this purpose, 45 questionnaires were distributed among broiler producers of the province. The reported levels of energy consumption and production were 218.40 and 30.13 GJ per thousand broilers, respectively. The largest share of the energy consumed, 40%, 25%, 23% and 9%, was related to gas-oil, feed, natural gas, and electricity inputs. Indices of ratio, productivity, special energy, and net energy gain were reported to be 0.15, 0.01 kg per MJ, 76.28 MJ per kg and 188268 MJ per thousand broilers, respectively. Modeling of energy inputs and the index of energy ratio as the inputs and outputs, respectively, of various artificial neural networks indicated that the network having two hidden layers with 12 and 9 neurons in the first and second hidden layers, respectively, was the most suitable network for modeling. Results of evaluation of networks suggested that the values for the R2 and MAPE indices for the 12-9 neuron network were 0.98 and 3.078, respectively, which showed that about 98 percent of the actual data could be estimated with the help of this artificial neural network

## کلمات کلیدی:

Broiler, Alborz Province, Energy efficiency, Sustainable agriculture, Artificial Neural Network

## لینک ثابت مقاله در پایگاه سیویلیکا:

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