Energy Consumption Modeling for Strawberry Greenhouse Crop by Adaptive Nero Fuzzy Inference System Technique: A Case Study in Iran

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Abstract : Agriculture as the most important food manufacturing sector is not only the energy consumer, but also is known as energy supplier. Using energy is considered as a helpful parameter for analyzing and evaluating the agricultural sustainability. In this study, the pattern of energy consumption of strawberry greenhouses of Jiroft in Kerman province of Iran was surveyed. The total input energy required in the strawberries production was calculated as 113314.71 MJ /ha. Electricity with 38.34% contribution of the total energy was considered as the most energy consumer in strawberry production. In this study, Neuro Fuzzy networks was used for function modeling in the production of strawberries. Results showed that the best model for predicting the strawberries function had a correlation coefficient, root mean square error (RMSE) and mean absolute percentage error (MAPE) equal to 0.9849, 0.0154 kg/ha and 0.11% respectively. Regards to these results, it can be said that Neuro Fuzzy method can be well predicted and modeled the strawberry crop function.