Abstract

The aim of this study was to evaluate the application of Artificial Neural Networks(ANN) in estimating the amount of essential amino acids with using of the nutrients in wheat and corn. General Regression Neural Network(GRNN), Redial Basis Function(RBF) and Three Layer MLP network was models used in this study. Neural networks designed in this study were evaluated by the training and testing data. In neural models used, input variables include crude protein, crude fat, crud fiber, phosphorus and ash, and output variables, including profiles of essential amino acids(methionine, cysteine, leucine, phenylalanine, tryptophan, valine, arginine, lysine, histidine and threonine) was to combine these two types of food. Cofficient of determination was calculated for each nutrient. All three networks were able to acquire The relationship between input and output variables. Results showed that in wheat and corn with input of crude protein+ phosphorus and using of Three Layer MLP network the coefficient of determination was higher than. Coefficient of determination for valin in corn 0.98 and the coefficient of determination for cysteine in wheat 0/98 was estimated. Also in the wheat except methionine, threonine and lysine in the other cases crude protein using general regression neural network and Three Layer MLP network performance was better.The radial basis function in the wheat had not a good performance. But in the corn was the opposite results. Exception of tryptophan, arginine and lysine in the other cases redial basis function whith ash input have a better performance. Using the results of this study recommended that artificial neural networks can be a powerful tool for modeling, forcasting and estimating the nutrient composition of feed stuff used poultry.

Key Words: Artificial Neural Network, Assential Amino Acids, Nutrient, Cofficient of determination