Using serum amino acids composition to predict livestock growth

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Abstract

In recent years, artificial intelligence technology is widely used in various fields. In the animal husbandry field, the feeding cost of livestock can be reduced by using artificial intelligence technology. Animals grow by ingesting these nutrients from their diets. As the three main nutrients for animal growth carbohydrates, proteins and fat are known. Protein is broken down into amino acids which are building blocks of protein. It is well known that animal growth is inhibited while fat metabolism changes by reducing the content of protein or amino acid in the diet.

In this paper, we propose to use serum amino acids concentration to predict the weight of livestock. Learning models are performed using two major artificial neural network models: Self-organizing map (SOM)[1] and multi-layer perceptron (MLP)[2]. 20 amino acids and weight of livestock are used as input vector. The results show that the prediction accuracy is improved by feature selection.

Keywords: Self-Organizing Map (SOM), Multi-Layer Perceptron (MLP), Amino Acids

References

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