



Definition of mating based on body morphometry in native chickens created extensively on field

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In extensive breeding of native chickens in tropical environment is recommended that mating females have to express compatibility of body size with males involved. In this perspective, this research evaluated the use of multivariate analysis including characteristics related to Morphometry of the bird, seeking define mating methods to animals. Used 210 adult females and males of ecotypes Teresina, Graúna Dourada, Brejeira and Nordestina, created at Center of Agrarian Sciences of the Piauí, UESPI, from União – Piauí. Animals were weighed, measured for perimeter (thoracic, abdominal and thoracic-abdominal) also ventral, dorsal and body lengths. Simple correlation was estimated between the characteristics and also performed multivariate analysis by principal components. Divided animals into 21 batches (10 males and 10 females) based on the weight in descending order for each gender. In each batch was held four types of grouping analysis, using the hierarchical algorithms simple binding, complete, binding medium and Ward, including characteristics body weight, thoracic-abdominal Perimeter and ventral Length of body (which had higher variation in principal component analysis). There was great variation amplitude of body weight in the roosters (1.0 to 4.2 kg), while in females was 1.0 to 2.4 kg. The found positive correlation between high weight and morphometric measurements of the body ($P < 0.01$) and weight were the characteristics with greater participation in the first principal component, responsible for 98.45 % of the variability present in the data. Therefore, this characteristic was more indicated to assist the formation of batches of females to know the need for compatibility sizes animals. The sexual dimorphism in size of birds was confirmed by analysis of clusters being generated dendrograms with males and females becoming in different classes in each batch of animals, however the combination of weight with body size contributed to the dispersal. It is considered more appropriate on the recommendation of males to mate with particular batch of females, should not be made just based on body weight, but based on cluster analysis using Ward's algorithm or similar, to pair the largest reproducer with batch of females larger. However, this procedure provides meet the proportionality between the size mated pairs, but deserves attention, because in the long term can result in increased value consanguinity in the breeding.

Keywords: cluster analysis, principal components, Mahalanobis distance, body size.

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