

Researches Regarding the Existence of Phenotypic Correlations between Different Body Measurements at Males from Romanian Mioritic Shepherd Dog

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Abstract

Romanian Mioritic Shepherd Dog was selected from a natural population breed in Carpathian Mountains. The aim of this paper was to estimate the correlation coefficients between 6 characteristics, using 26 males from Romanian Mioritic Shepherd Dog breed. The animals were registered with the Romanian Mioritic Association Club from Romania. Following the analysis of the phenotypic correlation, we identified some strong positive correlations between the length of the head and the length of the skull, and between the length of the head and the length of the snout. The correlations between the others characters were weak positive and weak negative.

Key words: phenotypical correlation, characteristics, body measurements

1. Introduction

For the animal genetic improvement knowing the correlations between characters has a special importance. He has to predict before starting the selection what will be the development of the entire organism, if one or more characters, that are the objective of the selection, will modify during the generations. Knowing the genetic correlations between trades is offering to the specialist the possibility to quantify the changes [1].

On the other side the genetician that sets to change the genetic structure of the animals must know the connection degree and the regression coefficient between trades, in order to estimate the direct and indirect selection effect, in order to estimate the degree in which one linked character is altered

when another character is altered by a unit when subjected to direct selection. The selection effect

decreases with $\left(\frac{1}{\sqrt{n}}\right)$ where n is the number of

characters taken into selection. This means that is the selection is considering only one character, the selection effect is maximized. This is suggesting that from the multitude of characters that give economic value to the animal the breeder is forced to choose only some. If we know the value of correlations between the regression coefficient, the selection will not address directly all the characters that are correlated, and will only chose one (considered the independent character x) and will modify it though selection, the correlated character will modify according to the correlation with the independent character [1].

The genetic correlations between trades help the genetician to choose and consider fewer trades. In order for the selection to be efficient it is

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extremely important that the objectives of the selection (characters) to be fewer. It is known that the selection effect (Δg) is decreasing with the number of characters considered in the same time [1].

The aim of the present paper was to estimate the phenotypical correlation coefficients between 6 characters, on an effective of 26 males from Romanian Mioritic Shepherd Dog from the Romanian Mioritic Association Club.

2. Materials and methods

Romanian Mioritic Shepherd Dog is an excellent shepherd, watch and company dog, at which breeding is important to remember the factors that contribute to its success [2].

Romanian Mioritic Shepherd Dog was selected by from a natural population breed in Carpathian Mountains, for which reason they are resistant and rustic for feeding and maintenance [3]. The food can be comprised from diverse components animal and vegetal both and it can be administered as mush or granules.

Romanian Mioritic Shepherd Dog has the ability to adapt at different breeding conditions which are accepted easily. The better it feels when it is maintained in the yard, where it has enough room to move, play and rest.

The correlation coefficient is a quantitative value that describes the relation between two or more values. It shows the measure which the variations of one variable is correlated with another variable. At 26 males from Romanian Mioritic Shepherd Dog from Romanian Mioritic Association Club, body measurements were performed for the 6 characters taken into study, the high at withers, body length, head length, skull length, skull wide, and snout length, the values were statistically analyzed [4]. For the estimation correlations the Pearson (r) correlation coefficient was calculated and for the signification Student test was applied.

3. Results and discussion

In table 1, the correlation coefficients are presented, for the 6 trades taken into study, from the 26 individuals from Romanian Mioritic Shepherd Dog. From the analysis of the table data it can be noticed that the high at withers, is weekly correlated with the length of the body ($r=0.084$), head length ($r=0.090$) and skull length ($r=0.382$), and also weekly correlated with the wide of the skull ($r=-0.321$) and the length of the snout ($r=-0.281$).

Table 1. The correlations between the 6 body measurements at 26 males from Romanian Mioritic Shepherd Dog

	High at withers	Body length	Head length	Skull length	Skull wide	Snout length
Body length	0.084 ($p=0.683$)	-	-	-	-	-
Head length	0.090 ($p=0.663$)	0.389* ($p=0.049$)	-	-	-	-
Skull length	0.382 ($p=0.054$)	0.136 ($p=0.508$)	0.699*** ($p=0.000$)	-	-	-
Skull wide	-0.321 ($p=0.110$)	0.100 ($p=0.628$)	-0.086 ($p=0.677$)	-0.048 ($p=0.816$)	-	-
Snout length	-0.281 ($p=0.164$)	0.394* ($p=0.047$)	0.580** ($p=0.002$)	-0.147 ($p=0.475$)	-0.092 ($p=0.654$)	-

The length of the body is positively correlated with the length of the head ($r=0.389$; $p<0.05$), length of the skull ($r=0.136$), wide of the skull ($r=0.100$) and the length of the body ($r=0.394$; $p<0.05$).

The length of the head is positively correlated with length of the skull ($r=0.699$; $p<0.001$) and the

length of the snout ($r=0.580$; $p<0.001$), also poorly collated with the length of the skull ($r=-0.086$).

The length of the skull is poorly collated with the skull ($r=-0.048$) and the length of the snout ($r=-0.147$).

The length of the snout is poorly negatively correlated with the length of the snout ($r=-0.092$).

4. Conclusions

Following the analysis of the phenotypical coefficient values obtained between the two characters taken into study on 26 males Romanian Mioritic Shepherd Dog from Romanian Mioritic Association Club, we underlined the existence of intensely positive between the length of the head, the length of the snout, between the others characters taken into study the correlations were poorly positive or negative, respectively. We recommend for the dog owners from this breed, that in the male's selection these correlations and their intensity, demonstrated in this paper, should be taken into consideration.

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