

# STUDY REGARDING SOME MORPHOLOGIC CHARACTERS AT STALLIONS BELONGING TO ROMANIAN SPORT HORSE BREED

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## Abstract

*Forming of Romanian Sport Horse started from 1962, first at Sâmbăta de Jos Stud, and from 1970 at Jegălia Stud. From the beginning up to present to increase the energetic capacity, respectively of the performances regarding sport competitions, breed is subjected to a complex and continuous improving process through specific breeding works. The current study was conducted on a number of 16 stallions belonged to Romanian Sport Horse breed, with the age between 4.5 and 18 years, state (Jegălia Stud) and private owned. All the stallions were subjected to qualification and classification actions, for including into "National Stud", respectively breeding stallions category. Characters which were studied are: waist, thoracic perimeter and shinbone perimeter, corporal dimensions which are taken into account in classification works. For a good appreciation of those morphological characters were calculated the afferent corporal indexes, respectively: dactyl-thoracic index, bone index and massive index. Statistical processing of the data obtained after the done measurements show that for the studied characters of the studied stallions result the following mean values:  $1165.84 \pm 1.82$  cm ( $V\% = 2.00$ ) for waist,  $188.31 \pm 1.94$  cm ( $V\% = 2.95$ ) for thoracic perimeter and  $21.47 \pm 0.66$  cm ( $V\% = 1.31$ ) for shinbone perimeter. Regarding the studied corporal indexes was obtained the following average values:  $113.55 \pm 1.51\%$  ( $V\% = 0.85$ ) for massive index,  $11.40 \pm 0.48\%$  ( $V\% = 0.35$ ) for dactyl-thoracic index and  $2.50 \pm 0.51\%$  ( $V\% = 0.37$ ) for bone index. For all the studied characters the results enlightened that the studied stallions re presenting as a homogenous batch, aspect very important for selection and breeding works, respectively for consolidation of breed characters.*

**Key words:** horse, sport, stallions, dimensions, Jegălia

## INTRODUCTION

To ensure the performance of sport horse, with properly equine material in the development of tangible and specific skills, beginning from 1962 was constituted a breeding batch, consisting of 40 easy-type mares (horse riding and traction).

After an eight year stagnation period at Sâmbăta de Jos, while the batch increased to 57 heads, the sports stud was transferred to Jegălia.

The initial batch of mares was very heterogeneous. At least, regarding the withers height variability went from 145 to 161 cm, with mean of 150.81 cm.

The main objectives for the new sport horse type proposed included the waist lifting to over 160 cm and body development commensurate with the waist.

Now, this was largely achieved, but is still one of the main objectives for selection and improvement activities.

## MATERIAL AND METHODS

The biologic material was represented by a number of 16 stallions, aged between 4.5 and 18, state propriety (Jegălia Stud) and private (different breeders, which we thank for their cooperation).

All the stallions taking into study were subjected to qualification and classification actions, being classified as "breeding stallions", which allows the inclusion in the "National Stud" [12].

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To determine the morphological, were made a series of measurements (waist, thoracic perimeter, shinbone perimeter) using the usual tools, respectively zoo-meter, and ribbon [2, 4, 7, 8, 9].

Data obtained were subsequently statistically processed [1] and served as a basis for calculation of some indexes:

- dactyl-thoracic index, calculated using the formula (shinbone perimeter/thoracic perimeter) × 100;

- bone index, calculated using the formula (shinbone perimeter/height at the withers) × 100;  
 - massive index, calculated using the formula (thoracic perimeter / height at the withers) × 100.

**RESULTS AND DISCUSSIONS**

Data obtained from measurements were statistically processed and summarized in table 1.

Table 1 Mean values recorded for the „Waist”, „Thoracic perimeter” and „Shinbone perimeter” characters

Specification	Waist	Thoracic perimeter	Shinbone perimeter
n	16	16	16
$\bar{X}$	165.84	188.31	21.47
s <sup>2</sup>	3.323958	5.5625	0.282292
s	1.82	2.36	0.53
$\pm s_{\bar{x}}$	1.82	1.94	0.66
V%	2.00	2.95	1.31
MIN	163.00	183.50	20.50
MAX	169.00	192.00	22.50

Regarding the waist, this character provides information on the animal body development, and also served as a comparison for assessing the development of its other dimensions, giving indications on proportionality, the mean value being  $165.84 \pm 1.82$  cm.

The studied batch was quite homogeneous from this point of view (V% = 2.00).

In most individuals (81.2%) waist ranged between 163.5 and 167 cm (fig. 1).

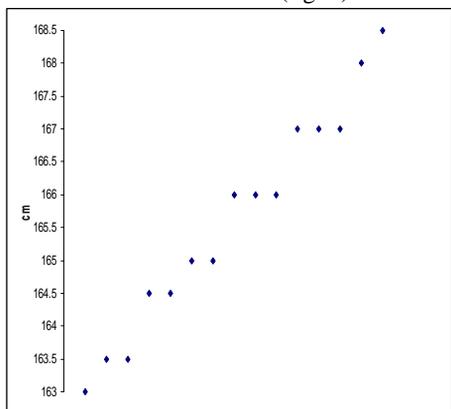


Fig. 1 Recorded values for the „waist” character

Regarding the thoracic perimeter, which provides information on the development of thoracic cavity and body, in overall, there has been a mean of  $188.31 \pm 1.94$  cm and a lower variability of 2.95%, the character ranged within the population between 183.5 and 192 cm.

Most individuals, 62.5%, had a thoracic perimeter of 187-189 cm (fig. 2).

The shinbone perimeter had a mean value of  $21.47 \pm 0.66$  cm. The character provides information on the degree of the skeleton development.

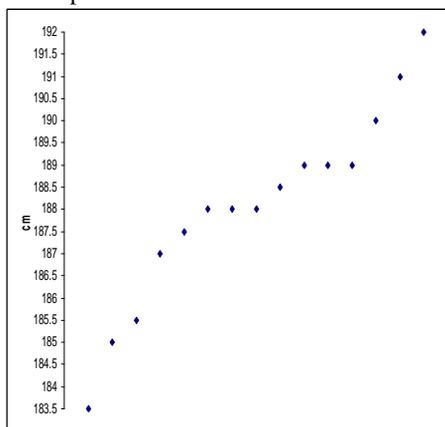


Fig. 2 Recorded values for the „thoracic perimeter” character

In most studied individuals (75%), the shinbone perimeter ranged between 21 and 21.5 cm, the population being very homogeneous from this point of view ( $V\% = 1.31$ ).

Most individuals, 50%, had the shinbone perimeter of 21.5 cm (fig. 3).

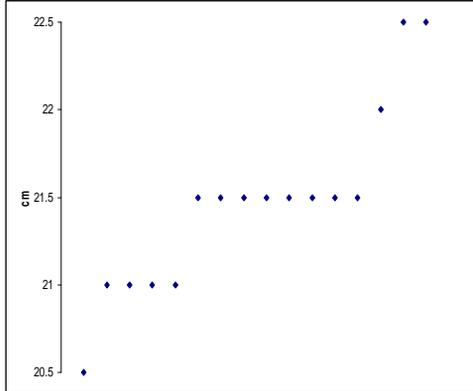


Fig. 3 Recorded values for the „shinbone perimeter” character

Regarding the studied corporal indexes was obtained the following mean values:  $113.55 \pm 1.51\%$  ( $V\% = 0.85$ ) for massive index,  $11.40 \pm 0.48\%$  ( $V\% = 0.35$ ) for dactyl – thoracic index and  $12.50 \pm 0.51\%$  ( $V\% = 0.37$ ) for bone index (tab. 2).

The obtained results show that in Romanian Sport Horse selection and improvement works, carried out over time had a positive effect, the breed approaching, greatly (very much) for the proposed standards set up at the beginning of training.

We mention that these data are comparable to those presented by other authors [2, 3, 5, 6, 10, 11].

Table 2 Values of corporal studied in different populations of sport horses

Specification	Own results	Sport horse from Germany	Sport horse from France	Sport horse from Hungary	British sport horse	Sport horse from Romania (Dulugeac I. 2005)
Massive index	$113.55 \pm 1.51\%$	115.29	111.76	114.14	112.03	113.79
Bone index	$12.50 \pm 0.51\%$	13.19	12.06	12.16	11.41	12.15
Dactyl-thoracic index	$11.40 \pm 0.48\%$	11.44	10.79	10.65	10.18	10.68

## CONCLUSIONS

The values of corporal body sized registered at horse population taken into study meet the current criteria of evaluation, falling within the breed standard, which allows promoting or maintaining, by case, of individuals in „National Stud”.

For all the studied characters the results enlightened that the studied stallions are presenting as a homogenous batch, aspect very important for selection and breeding works, respectively for consolidation of breed characters.

The obtained results are comparable to those presented by the literature.

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