

# ASPECTS REGARDING THE PHYSICAL DEVELOPMENT ASSESSMENT OF PUBLIC BREEDING STALLIONS FROM ARABIAN BREED

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## Abstract

*The assessment of breeding horses aims to determine the value of livestock, this activity being controlled by specific laws stipulating the regulations in force relating to reproduction, growth, care, filing and horses turning. Observation of physical and psychological characteristics established by the standard breed, sports skills and reproductive potential are ways to test breeders. Analyzing the data regarding the waist of public breeding stallion it has been obtain an average of this parameter for the entire population of 157,15 cm. The average variation coefficient of chest area (2.44%) of the horses under study leads to a homogeneity of the bloodlines.*

*Compliance required by law will bring an increase in the average performance of horses raised and exploited in the North-East region of the country. Horse breeders have the obligation to use for breeding only public stallions authorized by A.N.A.R.Z.*

**Key words:** horses, physical characteristics, public breeding stallion, breeding

## INTRODUCTION

Growth and horse's exploitation for sport, traction, and various works in agriculture require detailed knowledge of breeding problems [3].

Some of the items followed in case of breeding stallion's appreciation refer to conformation, constitution and physical development. The product must go through certain steps to show how valuable it is physically and reproductively, in order to achieve a maximum potential prior to final ranking [2].

In order to use a stallion for public mount it must be authorized by the competent authority of each country, in this case it is the National Agency for Amelioration and Reproduction in Zootechnics [4].

The appreciations of breeders by their exterior is materialized through the analytical and synthesis examination, which aims direct and indirect methods, in order to determine, in function with the standard breed or other groups of individuals from the population, different morphological characteristics value [1].

The purpose of this study was the determination of the characteristics of some parameters regarding the exterior of Arab bred stallions, waist, chest area and the whistle perimeter.

## MATERIAL AND METHOD

The biological material used was represented by 28 Arab bred stallions, existing in the Depot Dumbrava, on which were performed measurements to determine some characteristics related to external appearance and comparison with the values specified in the instructions for the assessment of breeding material.

Chest perimeter was determined with a ribbon, on the vertical line passing tangentially through the superior-posterior angle of the shoulder.

Whistle perimeter was determined using the same measuring instrument, from the level where the middle third of the flute unites with its upper third, where the whistle has the smallest perimeter.

## RESULTS AND DISCUSSIONS

The stallion's waist was analyzed on the entire population and separately for each genealogical line.

Regarding the waist it has been recorded an averaged for the entire population (157,15  $\pm$  0,69 cm) with 7,15 cm higher than the average of Arab race (150 cm) (Tab. 1). The coefficient of variation of 1,36% determined

shows a homogeneity of the population regarding the analyzed parameter.

Analyzing the obtained values in function of genealogical lines it was observed that the maximum was determined at the Hadban line ( $158,82 \pm 0,62$  cm), with 1,67 cm higher than the average value of the population (Fig. 1).

From the analysis of the dates regarding the chest area it was observed a population average value of  $177,28 \pm 1,47$  cm, being noticed that the last two studied lines (El-Sbaa, Hadban) had higher average values (Tab. 2).

The highest average value was obtained at the stallions from the El-Sbaa line ( $178,00 \pm 0,89$  cm), with 0,72 cm higher than the population average (Fig. 2).

The highest variability was recorded at Mersuch line, 3,38%, the value determined for the entire population studied was 2,44%. The limits of variation for Hadban line, in terms of

chest perimeter, ranged from a minimum of 171 cm and the maximum of 183 cm.

From the analysis of the obtained data on the chest area it can be observed that the studied population was within the limits of the race standard ( $164 \div 180$  cm).

The whistle perimeter presented the highest average at the line Hadban  $18,82 \pm 0,12$  cm, superior with 0,9 cm to the average population value (Tab. 3).

The minimum average of this parameter was obtained for Mersuch bloodlines,  $18,57 \pm 0,20$  cm (Fig. 3).

The coefficient of variation showed low values, indicating a high homogeneity of the population and also of the bloodlines.

Breed standard requires limits of 17,50÷20,50 cm of the whistle perimeter, the obtained values falling within the specified limits.

Table 1 The waist of Arab bred stallions

Genealogical lines	n	$\bar{X} \pm s_{\bar{x}}$ (cm)	V (%)	Variation limits (cm)	
				Minimum	Maximum
Hadban	11	$158,82 \pm 0,62$	1,28	155	161
El-Sbaa	10	$156,20 \pm 1,08$	2,19	153	163
Mersuch	7	$156,43 \pm 0,37$	0,62	155	158
Population average		$157,15 \pm 0,69$	1,36	154,33	160,66

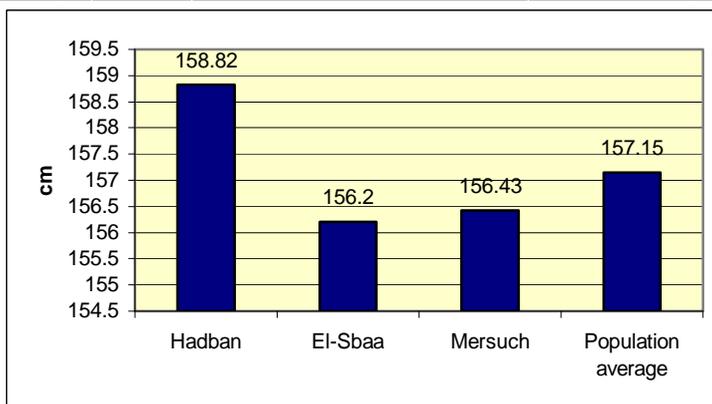


Fig. 1 The waist variation at Arab bred stallions

Table 2 Waist perimeter at the Arab bred stallions

Genealogical lines	n	$\bar{X} \pm s_{\bar{x}}$ (cm)	V (%)	Variation limits (cm)	
				Minimum	Maximum
Hadban	11	$176,55 \pm 1,26$	2,37	171	183
El-Sbaa	10	$178,00 \pm 0,89$	1,59	174	182
Mersuch	7	$177,29 \pm 2,26$	3,38	170	186
Population average		$177,28 \pm 1,47$	2,44	171,66	183,66

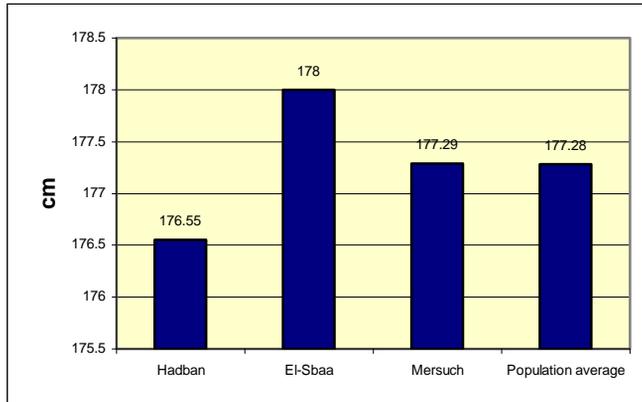


Fig. 2 The variation of waist perimeter at Arab bred stallions

Table 3 The whistle perimeter at Arab bred stallions

Genealogical lines	n	$\bar{X} \pm s_{\bar{x}}$ (cm)	V (%)	Variation limits (cm)	
				Minimum	Maximum
Hadban	11	18,82±0,12	2,15	18	19
El-Sbaa	10	18,80±0,18	2,24	18	19
Mersuch	7	18,57±0,20	2,88	18	19
Population average		18,73±0,16	2,42	18	19

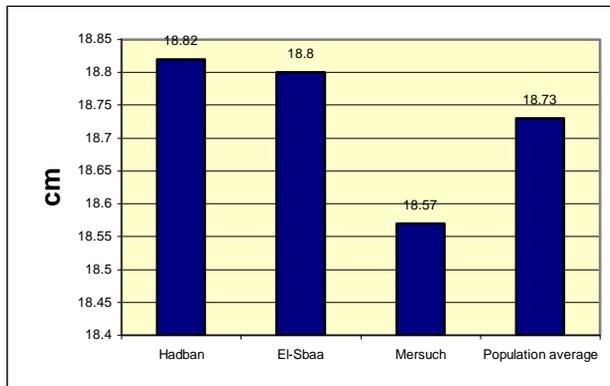


Fig. 3 The variation of whistle perimeter at Arab bred stallions

## CONCLUSIONS

The main body sizes of public breeding stallions are within the limits of the breed standard.

The lines El-Sbaa and Hadban had the highest average values regarding the waist and chest perimeter respectively.

From the data analysis regarding the whistle perimeter it was observed a homogeneity at the level of the entire population and bloodlines also.

Compliance required by law will bring an average increase in horses performance

horses bred and exploited in the North-East region of the country.

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