

THE PHENOTYPIC PARAMETERS AT THE POPULATION OF SPORTS HORSES FROM ROMANIA

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Abstract

Knowing the phenotypic parameters of the sports horse of Romania represents an actuality issue, if we take into account that such studies are inexistent, and the scientific substantiation of the genetic selection and improvement must be based on the analysis of the average values and of the variability of morphologic characters at the horse populations used in the equestrian, performance and recreation sports.

The problem is even more important as the economic necessities of life solicit more and more the horse for the equine sports. In the genetic improvement of the Sports Horse, the aim is a standard of the races used, which have some morphological characteristics, after which the selection is made.

The sports horse must be a pleasant partner for the horse rider, no matter whether it is a performance sportsman or an amateur looking for recreation or who travels during his free time. All the horse races represent populations with own characters, obtained through the conscientious selection by people.

The existent differences refer not only to certain morphological characters (waist, weight, etc.) but also to the performances obtained in the equine contests. This imposes the determination within each population of the characters and traits that relate to the performance sports and genetic improvement.

Key words: horses, equestrian, equine, sports, entertainment

INTRODUCTION

Knowing the phenotypic parameters of the sports horse of Romania represents an actuality issue, if we take into account that such studies are inexistent, and the scientific substantiation of the genetic selection and improvement must be based on the analysis of the average values and of the variability of morphologic characters at the horse populations used in the equestrian, performance and recreation sports (Binder, 1997, Flade, 1974, Ujică, 1981).

The problem is even more important as the economic necessities of life solicit more and more the horse for the equine sports (Georgescu, Ujică, 1982, Dulugeac, 2005).

In the genetic improvement of the Sports Horse, the aim is a standard of the races used, which have some morphological characteristics, after which the selection is

made (Arnason, 1980, Hartley, 1993, Ott, 1991).

The development of characters that represents selection criteria of the Sports Horse leads to genetic constructions and to obtaining phenotypes with a good adaptation capacity of the body to the effort during the preparation, training and equine contests and also to the feeding conditions and of the exploitation environment (Warren, 1992).

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the determination within each population of the characters and traits that relate to the performance sports and genetic improvement.

MATERIAL AND METHOD

From the 312 of horses for obstacles, dressage and complete contest, existent in 2004 in the property of the 28 equine clubs and associations registered at the Romanian Equine Federation, 211 horses were taken in the study, representing 67.6% of the national percentage.

On the identified biological material we carried out studies regarding the morphological characters, conformation constitution and temperament, the colours and colour particularities, the qualities and faults from the exterior, the aptitudes and results obtained in the equine competitions they participated to.

The selective work method based on sample was achieved interviewing each owner, aiming at obtaining complete information that is not usually found in the primary zootechnical records or in the current statistics.

The information picked was registered in an own conception sheet which was at the basis of this study, the data being completed with direct determinations and personal observations.

The electronic processing of the data was made according to a program elaborated based on the calculation algorithms by V. Ujică and V. Maciuc from the Faculty of Zootechny of the University of Agricultural Sciences and Veterinary Medicine from Iași.

The average values and the variability of morphological characters and the body indexes were estimated, the data being synthesized in tables.

RESULTS AND DISCUSSIONS

The structure of breed and age of the studied populations. In the breed structure of the horse populations, we comprised 6 breeds, among which the English Pure Blood and the Romanian Sports Horse have an approximately equal predominance (10.8%).

From the analysis of the age structure presented in figure 1, it results that the young animals (1-4 years) represent 57.5%, those between 5-10 years have 32.3% and the horses over 10 years only 10.3%.

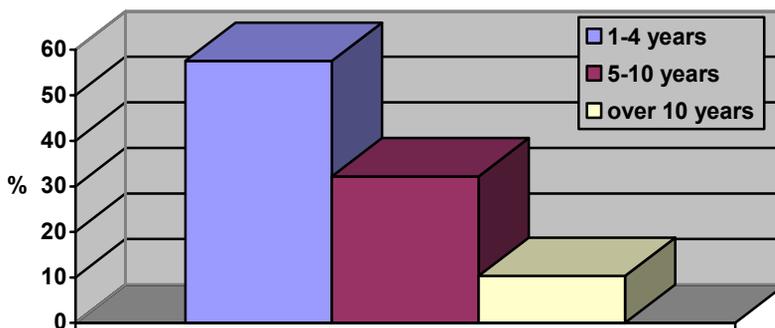


Fig. 1. The structure of breed and age of the populations

The analysis of this data shows us that in the studies population there existed 10.3% horses with the age between 10 and 20 years, successfully used in the internal and international competitions and then as reproducers. It is the case of the English Pure Blood, with a performant product even at the

age of 20 years old, but also of the producer Tam Tam, from the Romanian Sports Horse race, owner Florin Codre, presently reproducer in a private stud farm in France

In using the horses for the equine sports, age has an especially important role. Thus, for the obstacle horse and especially for the

dressage horse, the training lasts several years, and the use in competitions occurs at the age of 4-5 years old or 9-10 years old, in the case of dressage tests.

The money invested in a horse for obstacles and for the dressage tests justifies their use at a mature age, which can reach 16-18 years for the obstacle horse and 20-24 years for the dressage horses.

Regarding the relation between the sexes, in the studied population there existed 50.7% males and 49.3 % females.

The colours and colour particularities. From the analysis of the outcomes obtained (fig. 2), it results that the highest frequency is represented by the bay colour (62.8%), followed by the chestnut colour (14%), aubergine (10.5%) and black (9%) and with a reduced frequency, the colours roan (2.4%) and white (1.3%).

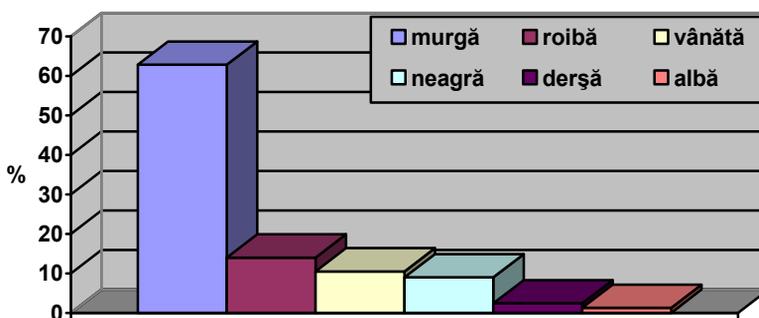


Fig. 2. Frequency colors in the population

The chestnut colour presents a higher frequency with the Romanian Sports Horse (13.7%).

The colour particularities have a high frequency at the level of the head (87.6%) and limbs (97.1%) while at the level of the trunk the frequency is reduced (13.2%).

The average values and the variability of the main morphological characters. The analysis of the average values and the variabilities of the main body dimensions at the horse populations belonging to the Sports Horse of different proveniences, indicates a body development similar to the standard of breeds they belong to, expressing well the type of the sports horse for obstacles, dressage and complete test.

The Romanian Sports horse represents an intermediary type of the populations of other proveniences, having the average waist of $160,32 \pm 0,98$ cm and the weight of 10.08 kg, and the variability of morphological characters is sufficiently big, this population being in course of genetic consolidation.

Analyzing the variability of the waist, we ascertain that the studied population is

divided in two subpopulations, one with waist between 147 cm and 162 cm, representing 47.77% and another one with the waist between 163 and 176 cm, representing 59.23 of the population.

The estimates of the variability present a high heterogeneity within the studied population, the variation coefficient having high values, with limits between 4.22% for the croup height and 17% for the length of the posterior fetlock.

Assessing the conformation - constitution and body harmony. For characterizing the body conformation and harmony, we calculated the main body indexes, from whose analysis the following result:

The Sports horse from the analyzed population has a small head (135.75%) with a straight profile and rarely concave.

The forehead is large (13.53%), the eyes are big, expressive, the ears are small and mobile, the nostrils are rather large, the mouth is small and well closed, with more or less thick and sufficiently mobile lips.

The neck is long (45.74%) with oblique direction, muscular and strong, well attached

to the head and trunk. The crest is thin and beautifully worn during movement.

The withers is well emphasized, continuing rather aesthetically the superior line of the neck and unseemingly interlacing with the horseback line.

The horseback and loins are relatively short (36.05%) the horseback and 14.14 % the loins.

The croup is rather lower than the withers (99.45%), short (31.94%), large at the shoulders (32.65%) and ischia (22.30%).

The croup format is slightly rectangular in the transversal sense (106.12%). The croup direction is slightly prone (92.54%), the tail beautifully worn during walking.

The chest is sufficiently large (25.12%), the *thorax is deep* (43.48%), rather large and profound, and the *abdomen* is supple.

The limbs are tall (62.46%), favourable to the movement speed (the speed index 131.88%), rather solid, scrawny with large and clean joints, strong tendons, well detached from the cannon bone. The skeleton is compact and thin (12.73%), with resistant cannon bone and dense structure. The cannon bone load index (4.41%) has an inferior value compared to other sports breeds.

The limbs generally have correct aplomb. The aplomb flaws "under it forward" and "under it backwards" are more often encountered. The bone flaws are very rare.

The skin is thin, smooth and pigmented with melanin pigments at most of the individuals.

The body hair is thin, short, smooth and shiny.

The predominant *colour* is bay, after which follows the chestnut, the aubergine, black colour and very rarely other colours. The colour particularities are very frequent, both for the head and for the limbs.

The smooth-robust constitution is frequently encountered, and the *temperament* is lively, favourable to the brave approach of obstacles of different forms and sizes.

The sports horse has a good *body massiveness* (114.52%), with a good body robustness (115.69%) and great effort capacity in the tests it is used for.

CONCLUSIONS

The analysis of average values and of the variability of morphological characters and conformation-constitution at the Romanian Sports Horse indicates a body development similar to the standards of other breeds from Europe, expressing well the type of the sports horse for obstacles, dressage, teams, and complete test.

Thus, a waist of 160.25 cm and an average body weight of 437 kg, values that indicate an intermediary type of populations of other proveniences, characterize the population of the Sports horse studied by us.

The studies achieved have a great professional interest, but especially, of scientific presentation with good and real results in the research practise of the horse, in the selection plan, so necessary in the much performant field of equine genetics.

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