

STUDY ABOUT WITHERS HEIGHT AVERAGE PERFORMANCES IN HUCUL HORSE BREED – PIETROSU BLOODLINE

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Abstract

Study of average performances in a population have a huge importance because, regarding a population, the average of phenotypic value is equal with average of genotypic value. So, the studies of the average value of characters offer us an idea about the population genetic level.

The biological material is represented by 91 hucul horse from Pietrosu bloodline divided in 3 stallion families (tab. 1) analyzed at 18, 30 and 42 months old, owned by Lucina hucul stood farm.

Analyzing the data presented we find a normal values situated between characteristic limits of the breed. The smallest variability of withers height at both sexes denote a high grade of consolidation in this blood line, the differences between individuals being the results of environmental factors..

Key words: withers height, hucul, Pietrosu, bloodline, Lucina

INTRODUCTION

The study of average performances for different characters in a population, have a great importance because, at the population level, the average of phenotypics value are equal with the average of genotypics value (Arnason T., 1984). That's mind that the study of average performances give us an ideaa about the genetic level of population.

MATERIAL AND METHOD

For realising the purposed objectives, biological material became from Lucina Stood Farm, Suceava county, represented by a sample with 91 horses (males and females) divided at 3 stallion familys, presented in tab. 1.

Tabel.1

The biological material

Bloodline	Family size	Male	Female
PIETROSU	91	44	47
- Pietrosu VIII	6	2	4
- Pietrosu IX	65	31	34
- Pietrosu X	20	11	9

The sample was studied at three different ages:

- First grading – 1.5 years old
- Second grading – 2.5 years old

- Third grading – 3.5 years old
After the third grade the individuals support a performances testing for energetic capacity.

RESULTS AND DISCUSSIONS

The average performances for withers height character are presented in tab. 2 and fig. 1.

Analysing the results from tab. 2, we observe that the average value for withers height are between the characteristical limits of Hucul breed. We observe significant differences of character in special at 3.5 years old.

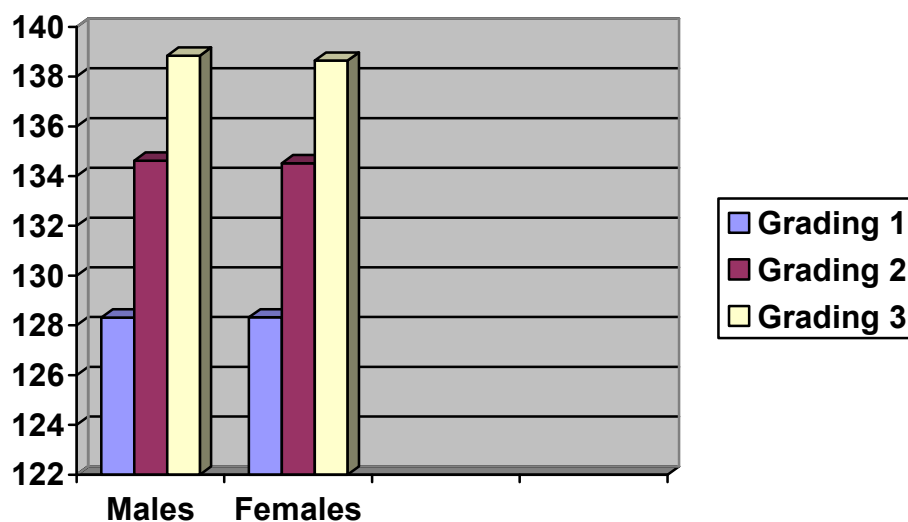


Fig. 1 – Withers height dynamic in Pietrosu bloodline

It's obvious a normal evolution for growth process, the value being approximately equals for males and females, with insignificant differences (the values are almost equals). In this case we consider insignificant differences between sexes 0.01 cm at 1.5 years old, 0.1 cm at 2.5 years and 0.2 cm at 3.5 years old.

For statistic testing of observed differences between halfsibs families from Pietrosu bloodline at all three analysed ages, we used the *Fisher* test (Popescu-Vifor Șt., 1985). For observing between which familys are the significant differences, we used *Tuckey* test.(Tacu A., 1968)

Tabel. 2

The average performances for withers height in Pietrosu bloodline

Family	Sex	Age (years)											
		1,5			2,5			3,5					
		n	$\bar{X} \pm S_{\bar{X}}$	s	v%	n	$\bar{X} \pm S_{\bar{X}}$	s	v%	n	$\bar{X} \pm S_{\bar{X}}$	s	v%
P VIII	M	2	127,5 ± 2,5	3,54	2,78	2	135,5 ± 0,5	0,71	0,52	2	140 ± 1	1,41	1,01
P IX		31	128,65 ± 0,99	5,49	4,27	31	134,29 ± 0,54	3,02	2,25	31	138,45 ± 0,77	4,26	3,08
P X		11	127,55 ± 1,02	3,39	2,66	11	135,36 ± 0,53	1,75	1,29	11	139,73 ± 1,1	3,66	2,62
Total M		44	128,32 ± 0,74	4,93	3,84	44	134,61 ± 0,41	2,71	2,01	44	138,84 ± 0,61	4,03	2,9
P VIII	F	4	129,5 ± 1,94	3,87	2,99	4	136,5 ± 0,65	1,29	0,95	4	139,25 ± 0,75	1,50	1,08
P IX		34	128,65 ± 0,59	3,45	2,68	34	134,56 ± 0,62	3,59	2,67	34	137,91 ± 0,51	2,96	2,15
P X		9	126,56 ± 1,08	3,24	2,56	9	133,44 ± 0,9	2,70	2,02	9	141,11 ± 3,11	9,34	6,62
Total F		47	128,31 ± 0,51	3,48	2,71	47	134,51 ± 0,49	3,35	2,49	47	138,64 ± 0,7	4,82	3,48
Total bloodline		91	128,32 ± 0,44	4,22	3,29	91	134,56 ± 0,32	3,04	2,26	91	138,74 ± 0,46	4,43	3,19
The significance of difference observed between sexes (Student)		0.001 NS			0.16 NS			0.22 NS					

CONCLUSION

The calculated F value indicate insignificant differences of withers height average value between halfsibs families from Pietrosu. In this hucul bloodline, at 1.5 years old $F = 1.08$; at 2.5 years old $F = 0.9$ and at 3.5 years old $F = 1.99$).

Because of this insignificant differences we will not need to use *Tuckey* test, this test giving us the possibility to see where are the differences between families.

The growth process in general, and the withers height evolution in special, vary in postutherin period in correlation with age, with an decreasing trend of values due to this factor(Marginean Gh., 1997).

By analysing this data we can observe:

- after parturition the hucul foals from Pietrosu bloodline have a normal growth.
- The highest growth intensity it's registered until 1.5 years old
- The biggest value for withers height growth are in the first period of postutherin life with a decreasing trend in relation with age factor.

After all this observation we can affirm that any kind of deficiencies in foals and young horses management and technology will have a very serious negative effect for production capacity and will be unrecoverable (Georgescu Gh., Petrache E., 1982).

Pietrosu bloodline, one of the newest bloodline from hucul breed, has recording the biggest values for withers heigt, being one of the tollest bloodline from the hucul breed (Marginean Gh. et al., 2007)

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