

# DETERMINING THE AMELIORATIVE EFFECT OF BREED STALLIONS ON LOCAL POPULATION OF HORSES FROM NEAMŢ COUNTY

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## Abstract

*The aim of this study was to establishment the ameliorative effect of breed stallions on the local horse population from Neamț county. We have studied the number of horses from the county noting the public mount stallions breed structure used for reproduction, the number of mounted mares and the ameliorate products indentified, corporal development and the variability of the main morphological characters at the ameliorate horse population with Semigreu, Hucul and Lipizzaner. From the undertaken study on the horse population from Neamț county between 2005-2012, the observations and direct determinations we can mention that if we make a comparison between the ameliorate population and breed stallions we notice that the best result in amelioration activity were obtained at Semigreu and Lipizzaner breed.*

**Key words:** stallions, ameliorative effect, corporal development, local horse population

## INTRODUCTION

For the agricultural labor and agricultural products transport it is required a massive horse, with increased traction force and an alert rhythm, qualities that are not possessed by the local unimproved populations [1].

The problem is the establishment of the ameliorative effect of breed stallions on the local unimproved horse populations and the optimization of their use in function of the specific area conditions that leads to the numeric increase and quality improvement of horse populations [4].

To establish the ameliorative effect of breed stallions on the local horse populations it is necessary to study first the biological material used for this porpoise regarding the genetic availability, character variability and properties that will lead, at the end, at amelioration objectives realization, namely, the growth of local unimproved horse population and the increase of their energetic capacity [2,3].

For this we have studied the horse population from Neamț county between 2005-2012 noting the public mount stallions used at reproduction, the number of mounted mares and their products, corporal development and the variability of the main morphological characters at the ameliorate horse populations with Semigreu, Hucul and Lipizzaner bred.

## MATERIAL AND METHOD

Researches were made on Semigreu, Hucul and Lipizzaner breed stallions and on the population ameliorate with them. The studied stallions were sent in territory for mount, belonging to the Dumbrava-Târgu Neamț public mount stallions Depot. Researches on the morphological characters were performed, studying the waist, thoracic perimeter, whistle perimeter, head length and corporal weight. To analyze the ameliorative effect there were taken in study 10 products of the breed stallions mentioned above. The obtained data were processed using the MsExcel application. The usual statistics estimators were determined.

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The manuscript was received: 17.12.2014

Accepted for publication: 20.01.2015



## RESULTS AND DISCUSSIONS

In breed structure Semigreu horse predominated (43.35%) and Lipizzaner (35.47%), followed by Hucul (21.18%). From the reproduction activity of public mount stallions resulted 936 ameliorate products by the mount of 1218 mares, being recorded a natality percent of 76.85% (table 1). The lower natality was found at the mares mounted with Semigreu stallions (69.70%) and the highest at the mares mounted with

Lipizzaner stallions (84.26%). From the 938 ameliorate products 421 were males and 515 females. Fertility index presented a value of 100% at the mares mounted with Lipizzaner stallions and the smallest value was obtained at mares mounted with Hucul stallions. Regarding the gestation percent, this varied between 70.45% at mares mounted with Semigreu stallions and 98.45% at the ones mounted with Hucul stallions.

Table 1 Reproduction activity in Neamț county

Stallion breed	Mounted mares		Pregnant mares		Obtained products		From which		fertility%	natality%	gestation %
	n	%	n	%	n	%	M	F			
Semigreu	528	43.35	372	37.58	368	39.32	198	170	98.92	69.70	70.45
Lipizzaner	432	35.47	364	36.77	364	38.89	120	244	100.00	84.26	84.26
Hucul	258	21.18	254	25.66	204	21.79	103	101	80.31	79.07	98.45
<b>Total</b>	<b>1218</b>	<b>100.00</b>	<b>990</b>	<b>100.00</b>	<b>936</b>	<b>100.00</b>	<b>421</b>	<b>515</b>	<b>94.55</b>	<b>76.85</b>	<b>81.28</b>

n-number of individuals, M-males, F-females

Local horse population ameliorate with Semigreu stallions is the largest as a result of intense use at reproduction of these breed stallions in Neamț county. It is characterized

through a waist of 165.6 cm and a corporal weight of 388.1 kg. Regarding the corporal dimensions this populations is very close to the ameliorative breed.

Table 2 Corporal development of half-breed with Semigreu stallions from Neamț county

Specification	Public mount stallions	Half-breed with Semigreu stallions			
	$\bar{X} \pm s_{\bar{x}}$	n	$\bar{X} \pm s_{\bar{x}}$	Minim	Maxim
Waist (cm)	156.00±0.577	10	156.60±2.061	145	164
Thoracic perimeter (cm)	180.00±3.000	10	173.40±2.612	164	191
Whistle perimeter (cm)	21.66±0.333	10	20.20±0.388	18	22
Head lenght (cm)	68.33±0.881	10	57.60±1.995	48	67
Body weight (kg)	426.66±18.330	10	388.10±15.792	334	498

n-number of individuals

The horse populations ameliorate with Hucul breed (table 3) is the most poorly represented in Neamț county. It is characterize through a waist of 142 cm and body weight of 342.33 kg. Although Hucul breed is perfect adapted to the mountain and sub mountain

areas and it has special qualities of ameliorate breed for the horses from this area, we can notice that in Neamț county the solicitation for this breed are lower, the breeders preferring massive breeds which can be used in forest and agricultural transports.

Table 3 Corporal development of half-breed with Hucul stallions from Neamț county

Specification	Public mount stallions	Half-breed with Hucul stallions			
	$\bar{X} \pm s_{\bar{x}}$	n	$\bar{X} \pm s_{\bar{x}}$	Minim	Maxim
Waist (cm)	145.33±0.333	3	142.0±2.081	138	145
Thoracic perimeter (cm)	170.33±2.603	3	165.33±4.977	156	173
Whistle perimeter (cm)	19.16±0.440	3	17.83±0.440	17	18.5
Head lenght (cm)	62.00±0.577	3	56.0±1.527	54	59
Body weight (kg)	369.00±14.798	3	342.33±26.547	293	384

n-number of individuals

Ameliorate horse population with Lipizzaner breed (table 4) from Neamț county is characterized through a waist of 150.1 cm and a body weight of 409.4 kg. In comparison with Lipizzaner stallions development we can notice that waist and thoracic perimeter have smaller values with

12.23 cm and 2.13 cm that the stallions and the body weight is smaller with 13.26 kg. Although inferior as body development this half-breed population is very appreciated by the breeders due to its fatigue resistance, docility and softer character.

Table 4 Corporal development of half-breed with Lipizzaner stallions from Neamț county

Specification	Public mount stallions	Half-breed with Lipizzaner stallions			
	$\bar{X} \pm s_{\bar{x}}$	n	$\bar{X} \pm s_{\bar{x}}$	Minim	Maxim
Waist (cm)	162.33±1.200	10	150.10±1.870	143	160
Thoracic perimeter (cm)	179.33±2.962	10	177.20±1.489	170	185
Whistle perimeter (cm)	19.66±0.333	10	19.80±0.416	18	22
Head length (cm)	74.33±1.850	10	59.10±0.795	55	62
Body weight (kg)	422.66±18.410	10	409.40±9.053	366	458

n-number of individuals

Regarding the local unimproved horse population from Neamț county (table 5) we can notice that they are horses with medium

waist 147.8 cm (variation limits 139/157 cm) and body weight of 371.6 cm (with limits between 288 and 438 kg).

Table 5 Corporal development of unimproved horse from Neamț county

Specification	n	$\bar{X} \pm s_{\bar{x}}$	Minim	Maxim
Waist (cm)	10	147.80±2.015	139	157
Thoracic perimeter (cm)	10	170.50±2.880	155	182
Whistle perimeter (cm)	10	20.40±0.371	19	22
Head length (cm)	10	67.00±2.070	58	80
Body weight (kg)	10	371.60±16.256	288	438

n-number of individuals

## CONCLUSIONS

From the undertaken study on the horse population from Neamț county between 2005-2012, from the made observation and direct determinations we can mention the fact that if we make a comparison between the ameliorate horse population and the breed stallions the best results in amelioration activity were obtained at Semigreu and Lipizzaner breed.

For the amelioration of the horse population from this area we should use stallions from massive breeds like Semigreu and Lipizzaner.

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