

CROSSING OF HOLSTEIN HORSE BREED WITH SOME OTHER BREEDS

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ABSTRACT

An experiment of crossing a heavier-weight semi-breed horse (Holstein) with mares of Croatian Posavian type draft horse resulted in possibility of such further crossing. Attained product meets today's market requirements: firstly as an export-meat category that meets Italian market requirements, since other markets are not well known, secondly, it can be used as a sport-tourist-recreation horse. It must be pointed out that all produced hybrids did not meet the needs of these two basic criteria. In spite of being potential slaughtery head with good utilization, each produced head can be, according to its exterior properties, used as a sport-tourist animal that showed certain usable values and results proven by the experiment. The hybrids showed some hereditary draft horse properties shown on enclosed photos. In addition, exterior measures show that former knowledge on hybrids can respond the question of a horse raising on non-utilized pastures which they got used to very well. Thus these horses are able to be estimated by their body development just as our native draft Posavian type horse including possibility of using them as a sport-tourist-recreation horse.

Keywords: Holstein breed, crossing, horse utilization

INTRODUCTION

We tried to get certain values and results in a crossing carried out between semi draft and draft horse of Posavian type. Fifteen mares of Posavian type draft horse were used with Holstein foals.

It is well known that today's Holstein originated from heavy agricultural horse via thoroughbred horse use to reach position of general purpose sport horse.

We conducted the crossing experiment between Holstein breed and inland Posavian type draft horse to get new knowledge on hybrids usage, i.e. to respond the questions: what are their meat -use properties or sport- tourism-recreation ones.

Namely, we aimed to find out their real value in a horse breeding of the Republic of Croatia as well as their contribution to a horse breeding development.

Basic female population of Croatian Posavian type draft horse with boundless number of female reproductive horses and Holstein foals is able to provide valuable and well usable hybrids.

MATERIAL AND METHODS

A new breed of horse was tried to be introduced in a horse stud breed of Croatian draft horse at an integrated plant Novska during the admission season 1987. On the basis of literature data and foals use possibilities we decided to introduce a Holstein breed that, apart from other properties, was used as a breeder. Foal Farmer 1 was chosen for, by its birth certificate, it is able to meet our demands in terms of anticipated offspring.

A stud farm Kony stočarstvo Novska possessed approx. 60 reproductive mares of Posavian type Croatian draft horse. They were very heterogenous in terms of their properties concerning their fathers. All of them originated from native breeding of Lonjsko polje (Novska, Lipovljani, Jasenovac, Lonja, Drenov Bok etc.). Fifteen mares of very diverse exterior and body weights were selected for the foresaid crossing (Croatian draft horse x Holstein) by a random design. It should be pointed out that there were reproductive mares ranged from native old Posavian horse, hybrids with heavier draft foals to heavier samples with emphasized draft horse effect.

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Average body weight of reproductive mares ranged 480-600 kg. Five year old foal Farmer 1 used in this crossing weighed 580 kg.

In 1987 the admission was performed by hand in a controlled way. Fifteen reproductive mares that spent a spring-fall period on Mokro polje pastures (an integrated part of Lonjsko Polje) were admitted. Fourteen mares (9 male and 5 female foals) foaled in spring 1988. Mares and two month old foals were on pastures again during the growing season i.e. till first frost emerged (mid October).

In a winter period of 1988/89 the foals were housed in a joint stable together with mares in Rajić place and as ablated foals went back to Mokro polje pastures.

In 1989 animals were separated by sex, females (5 heads) stayed with mares whereas 7 male heads were transported to the Agricultural Institute Križevci in 1990.

Since the animals were on pastures without stables and special human care it was not possible to observe their growth and development except regular visits and noticing some important changes (diseases, injuries etc.).

In 1991 3 year old male heads were castrated and treated in the same conditions. Namely, female heads were on large bent pastures of Mokro polje and male ones on fenced pastures in Križevci. Here, we have to point out that spring-summer-autumn feeding was only pasture without added vigorous forage.

Winter ration was composed of average meadow hay (3-5 kg), corn silage by 15 kg daily and vigorous part of ration (oat+corn ear) 2-3 kg on both places.

All heads were ready to work in a winter/spring period of 1990/91. Thus, heads were trained to basic work at age of 3 years. Also, all the heads were trained to be saddled and teamed.

RESULTS AND DISCUSSION

In 1991 all the heads at age of approx. 3 years (2 years, 10 months and 20 days) were measured prior to being trained to work. Fifteen basic measures including body weight were taken.

As there was total of 12 heads (7 males and 5 females) which provides not sufficient data for individual analysis per sex it was done for both sexes together.

Data processed by a common statistical methods yielded the results as follows (Table 1).

Table 1. Body measures of hybrids between Croatian draft horse and Holstein (n=12)

Indicators	\bar{x}	s	Cv	s \bar{x}	M	F	M	F
					Min.		Max.	
WH by stick	146.33	4.53	3.09	1.30	139	143	152	152
Back height	140.16	4.25	3.03	1.22	133	137	147	145
Crupper height	148.58	3.60	2.42	1.04	142	144	151	153
Tail root height	136.25	2.76	2.02	0.79	130	135	140	139
Body length	151.83	3.61	2.37	1.04	147	145	157	155
Chest depth	60.83	3.15	5.17	0.91	57	57	65	63
Shoulders width	41.91	1.16	2.76	0.33	40	40	43	43
Hips width	48.58	2.06	4.24	0.59	46	45	51	52
Crupper length	49.91	2.64	5.28	0.76	47	46	56	51
Chest girth	181.83	8.96	4.92	2.58	173	167	189	190
Cannon bone circumference	19.41	0.86	4.43	0.24	19	18.5	20	19
Body weight	425.91	40.11	9.41	11.59	410	318	495	445
Wither height by a tape	158.41	4.18	2.63	1.20	152	152	166	161

Unfortunately, obtained data can not be compared to similar crossings since there are not any other or there are not sufficient animals number at controlled crossings. There are few data related to hybrids between Holstein and Lipizzaner in devastated stud farm Lipik. However, there is a small number of hybrids between Lipizzaner and native Posavian type draft horse in the area of Nova Gradiška and a part of Slavonski Brod. Those data have neither been collected nor processed. Besides, as for Posavian draft horse, Lipizzaner occurred in fourth and further generations since it was used 30 and more years ago. This crossing between heavier semi breed and light draft horse is better to compare with body measures of these hybrids' mothers.

According to literature data Posavian draft horse from 1940-42 was 155 cm in height measured by the tape, light, with pronounced warm blooded effect-Lipizzaner and some nonius. Thus, it is agile and lively. It is characterized by a good appearance; deep, wide and compact. Crupper is wide and cleft slightly higher than wither, often diagonal but not long. Resistant and enduring, less food requirements and well adjusted to Posavian damp and underwater pastures. According to Romić from the period 1950-52 and his own data (Ljubešić, 1985) Posavian draft horse possessed body properties as follows:

Table 2. Body measures of Posavian draft horse

Indicators	Romić n = 32 (1950/52)	Ljubešić n = 25 (1985)	Ljubešić n = 12 (1989)
Withers height by a stick	137.14	143.68	144.12
Body length	139.70	148.68	-
Chest depth	64.50	67.36	-
Hip width	-	53.08	-
Crupper length	-	48.84	-
Chest girth	167.10	193.56	194.25
Cannon bone circumference	17.50	21.64	21.21
Withers height by tape	-	159.68	158.35
Body weight	342.60	519.48	-
Average age	-	6.96	6.12

The body measures from 1989 refer only to mothers of the observed 12 heads (7 males and 5 females).

Hybrids of Holstein x Posavian draft horse, although very young, only 3 years old, are slightly higher compared to draft horse population and significantly larger compared to hybrids of Posavian type draft horse and Lipizzaner.

Upper line is in most cases typical as well as at draft horses. It also refers to crupper slantness-correlation between crupper height and tail root height-root setting. Body length is more or less identical.

Hips width and crupper length correlation at hybrids also represents square, typical for draft horse.

Chest girth can not be compared since it depends on a season-taking time related to fitness or spring-summer-autumn pasture amount.

Cannon bone circumference is with hybrids less than with parents. Thus it is possible to anticipate better utilization for these animals since it is very interesting for the market.

Obtained animals as well as their purpose and usage can be seen from some photographs.

As all draft horses, they represent meat producers since by introducing heavier semi breed horses they have not lost anything relative to size and weight. The hybrids adjusted to pastures very well with neither winter ration large investments nor facilities.

Other possibility of hybrids utilization, proven in 1990 and partially 1992, refers to their use as sport recreation horses. They are characterized by good and calm behaviour, more lively and agile compared to draft ones and far cheaper in production than any other semi blood horse. These horses are produced on pastures without vigorous forages except a little amount in short winter period. A draft horse female population as well as reasonably selected male sire is a basis for such heads production.

CONCLUSION

We think that crossings provide new results. Thus, a crossing trial carried out with Holstein breed and other breeds provided certain results. A step speed and length was achieved, being very significant from riding sport aspect.

Other direction is achieving usable sport horse jumping sport. They are not top quality heads for obtaining prestigious results, but as usable sport horses they provide satisfactory results.

Such hybrids are thought to be useful for police and army requirements as usable overhauls.

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