

Genetic structure of Huzul horse breed based upon maternal families.

Mihók S¹., Horny M²., Bodó I¹.,

¹Debrecen University, Faculty of Agriculture and ²National Stud of Tapolcianky

Introduction

The role of male and female lines was always disputed among practical breeders, however the decision of geneticists was the equilibrium based upon the nucleus of reproductive cells. The impact of stallions can be estimated higher because of the progeny size, but the mare is the first environment of the foal beside the chromosomal effect, only which is the same as that of the stallion. In the last years, however, molecular geneticists discovered, that in the cell plasm in mitochondria there is DNA as well. It is something independent from the nuclei so independent from the impact of males. That is the reason, that in last years the impact of females is estimated higher. It is a factor, which is inherited only in female side, so the reason for the higher value of mares, and family breeding. **Horn (1976)** emphasized the importance of families already before the results of molecular genetics.

The small horses or ponies are more and more popular in modern world. They can be used for children for both, driving or riding purposes. Some of them can work in gardens, as well as even the stronger in the forest. In this respect the Huzul breed can be estimated higher, because it is a native horse breed and very valuable in conservation of genetic resources. The literature neglected the Huzul breed, however some comprehensive studies were published although rarely during the last century : **Osowicki (1904), Hackl (1938), Kario et al (1991), Mihók (2004).**

Origin of the breed

The Huzul horse breed is an autochthon breed of Carpathian region that's why has the nick name the „Carpathian pony”. The other nick name the „Hill Tarpan” is easily mistakeable.

The region of origin is on the landscape between the sources of rivers Tisza, Prut, Ceremos, Putila and Borodina. On the former borders of Hungary, Bukovina and Galicia. The name of the breed is the name of an ethnical group living in the region. (**Az Osztrák Magyar Monarchia írásban és képen Bukovina, 1899**) It is an undecidable question whether the horse, or the people name has been the first. The region is desolate, dreary land and people are similar to their native land. Different refugees from different countries make the population having a special language, which is living up to now.

The breed

The first reference on the breed was published in Dohorstajski's book „Hippika” in 1603. about a unique mountainous horse, the Huzul breed, which is not similar to another breed. At the beginning of 19th century the group of horses of Huzuland was a type only and it was selected by the region, by poor nutrition and hard working and weather-conditions.

Thus, the many centuries past of the breed is not questionable.

The history of the breed

In 1792 there were already a Huzul stud in Radautz and in Lucina there was only a summer pasture at a high plateau of 1642 m. Buildings were built there in 1815. In 1870 the decision was to liquidate and disperse the Huzul stud. The horses were given to the peasants. Already in 1877 the requirement for these useful small working horses increased and so the stud was established again in Lucina and it exists up to now. They were looking for horses of good character and 136 – 140 cm withers height, and shortly 28 mares were in breeding with the stallion Stirbul.

After World War I. the Huzulei, the Huzul region arrived in the ownership of Romania, Poland and Czechoslovakia. In 1919 the breeding material was escaped to Waldhof and then distributed to Romania, Poland and Ukraine.

In the Lucina stud already in 1936 there were 15 brood mares, and 11 yearlings and 2 suckling foals with original Hroby and Goral stallions.

An important fact was in the history of Huzul breed, that in 1922 Czechoslovakia got a good breeding material : 15 Goral and Hroby mares and stallions and 28 foals. It was the establishment of the Tapolcianky stud. After a transport to and back to Turjaremete, the Tapolcianki Huzul stud does exist up to now. The foundation of Gurgul line happened also here from 1927 – 1936.

In the Region of Zabie (Galicia) a good Huzul area developed, more than 1300 mares were covered and it is interesting, that there were also always spotted horses. The Polan line foundation happened here.

Because Ukraine did not want to receive Huzul horses from these material, Hungary purchased 16 females and 4 males. A Huzul stud was established at Bántapuszta. In 1924 more than 200 mares were in breeding.

It disappeared after World War II.

Austria got Huzul horses only later.

Present situation of the breed, famous studs

In *Romania* the Lucina national stud can be considered as the cradle of the breed. In 2002 there were 49 brood mares and 8 stallions from 5 genealogical lines. 100 Huzul stallions serve in the country for producing work horses for agriculture and forests. Many horses were exported to the neighbouring countries.

Poland is the second traditional country of Huzul horses. In Poland beside the work in agriculture and forests Huzul horses are used more and more in sports

First of all children riding and driving purposes but they wanted to develop also a certain military, three day event for Huzuls.

450 mares and 72 stallions are registered for breeding and they maintain 7 genealogical lines.

Slovakia is the owner of very valuable breeding material. 40 mares and 6 stallions are kept in Tapolcianki and another 80 mares are in the ownership of private breeders and forest industries. The most important breeding goal is the working horse, the "2ortodox" Huzul type. They made a trial for crossing the Huzul with Fjord stallions, the result was, however, not satisfactory.

In *Czechland* there are 366 mares and 35 stallions officially registered by a breeding association. Breeding material is crossed by Fjord and the breeding goal is the sport and leisure time riding.

In *Austria* there are from Poland and Romania imported material from 1990.

The aim is the sport of children and grown up persons and they have merits in establishing the Huzul International Federation.

In *Hungary* the Bántapuszta stud disappeared and the new material was bred in zoos up to 1980ies when the Aggtelek National Park undertook keeping Huzul horses. Now the breeding is directed by the Association of Ponies and small horses, and about 100 mares are registered.

At the beginning of twentieth century Poland, Slovakia, Czechland, Hungary and Austria established the *HUZUL INTERNATIONAL FEDERATION*. Huzul horses are bred also in Ukraine and Germany, but these countries did not join to the activity of international federation.

Stallion lines

The Huzul stallion lines must be considered as genealogical lines, because there is not inbreeding in the background, even the mating is based more or less on avoiding the close inbreeding.

The accepted lines according the birth year of founder (senior) and the place of birth are as follows

Hroby (1898) Bukovina
Goral (18898) Bukovina
Prislop (1936) Bukovina
Ousor 1933) Sicler
Pietrosu (1933) Sicler
Gurgul (1924) Slovakia
Polan (1929) Poland

Sicler means the origin of Siclerland (Székelyföld). It is a Hungarian ethnic tribe living in Transsylvania (jud. Hargita, Kovasna and Mures), where a special hill horse breed existed, which is nearly extinct.

Mare families

The original 10 founder mare families of Lucina which are extinct :

| | |
|---------|----------|
| Gaina | 4Chitca |
| 3Lucina | Kamionka |
| Zurawna | Lukawa |
| Magura | Mechna |
| Bobeka | Tatarka |

The list of 25 living ones

| | | |
|-------------|--------------|------------|
| 1 Panca | 2 Lucina | 2 Ritka |
| 4 Kamenka | 4 Kitca | 5 Plosca |
| 5 Zurairna | 7 Parasca | 11 Rotunda |
| 12 Sarata | 13 Slatina | 17 Aglaia |
| 19 Cacica | 23 Putila | 24 Laura |
| 25 Anita | 83 Arseneasa | 84 Diana |
| 85 Manalaia | Bukovina | 81 Tiganca |
| 82 Liza | 20 Marianca | 21 Sulita |
| 22 Parana | | |

The Slovakian families

70 Sekacka
84 Hurka
825 Agla
862 Dagmar
882 Gelnica
Iveta

Hungarian families

Árvácska
Aspiráns

The Polish families are not mentioned here and there are some other families as well, like 23 Klapka, Suza, 18 Barna, 108 Morsina, 25 Zemla, 39 Franka, 48 Mulica, Valuta, 19 Klavka.

As it is evident from the names, the nomenclature is not uniform and the elaboration of families is in work and not yet ready.

In the framework of preservation of genetic resources the attention is increasing on the endangered families. These are (Hajdrick 2007)

| | |
|------------|-------------|
| 70 Sekacka | 1 Panca |
| 862 Dagmar | 5 Plosca |
| Iveta | 882 Gelnica |
| Bukovina | |

Conclusion

Thus, as a breeding goal the preservation of biological diversity within the breed and developing its utilization is obligatory.

References

Az Osztrák Magyar Monarchia írásban és képművészetben Bukovina (1899): Österreich-Ungarische Monarchie in Schrift und Bilder M.kir.Államnyomda Budapest

Hackl, E.(1938) Der Berg-Tarpan der Wildkarpaten genannt Huzul. Verlag Friedrich Beck Buchhandlung Wien- Leipzig. 344.p.

Hajdrick M. (2007) : Present population of Huzul pony in view of original mare families Diploma work. Debrecen

Horn A.(1976) : Állattenyésztés I. Band. Mezőgazdasági Publisher Budapest

Kario,W.I. – Kremzien, M.P. (1991): Huzul-Konic Polonin. Parol Company Krakow 128.p.

Mihók .S (2004): A Hucul ló. Debrecen. Póni és Kislótenyésztők Egyesülete. 52.p.

Osowicki A. (1904): Das Huzulenpferd Verlag Schickhard und Ebner Stuttgart 54.p.