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Breeding goals for milk and meat producing sheep in Hungary

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SUMMARY - There are 6,799 sheep farms in Hungary and 21 different breeds are bred. The breeding goals vary from farm to farm depending on the flock size, the available land and the main products (meat or meat and milk). On the small farms survival is the most important aim, while on the bigger ones there are possibilities to increase the meat and milk production. In general, there is a very big shortage of animals, the stocking rate is much lower than expected, so, the basic breeding goal is to increase the number of sheep in the country.

Key words: Farms size, pastures, breeding goals, yields.

RESUME - "Objectifs de l'amélioration génétique des ovins à viande et à lait en Hongrie". Il y a 6 799 exploitations ovines en Hongrie qui élèvent 21 races différentes. Les objectifs de l'amélioration génétique varient d'une exploitation à l'autre selon la taille du troupeau, les terres disponibles et les produits principaux (viande ou lait et viande). Dans les petites exploitations, la survie est le but le plus important, tandis que dans celles de plus grande taille il y a des possibilités d'augmenter la production de viande et de lait. En général, il y a un très grand manque d'animaux, la charge animale est bien plus faible que ce que l'on pourrait attendre, et donc l'objectif principal de l'amélioration génétique est d'augmenter le nombre d'ovins dans le pays.

Mots-clés : Taille des exploitations, pâturages, objectifs de l'amélioration génétique, rendements.

Introduction

The Merino sheep is still dominating in the Hungarian sheep industry, however there are 21 breeds bred on the different farms. As the ownership changed during the last 7 years the breeding aims were also modified. The hardest breeding goal is to keep the sheep alive on most of the small farms and the increasing yields (lamb, milk) could really be a main interest concerning breeding goals on the bigger farms. In most cases the breeding aim is to improve the reproduction data and the meat production of the lambs as well as to increase milk yield of the ewes.

The flock size, the available lands and the main products (meat or meat and milk) have strong effects on breeding goals of Hungarian sheep farms. In our present study we have tried to summarize these effects.

The flock sizes

There are 6,799 sheep farms registered by the Hungarian Sheep Products Council, but the flock size is changing between a very wide range: from 1 up to more than 5,000 head (Table 1). More than 90% of sheep farms have less than 300 ewes, which is more or less the minimum level of a profitable

family size sheep farm. These 300 head could give enough income to the farmer to get rams from nucleus farms and still be able to survive.

Table 1. Distribution of flock sizes in Hungarian sheep farms (1996)

No. of ewes	Private farms		Companies		Total	
	No. of farms	No. of ewes	No. of farms	No. of ewes	No. of farms	No. of ewes
1-10	1294	8503	0	0	1294	8503
11-50	2540	69691	5	179	2545	69870
51-100	1100	87322	7	541	1107	87863
101-200	870	132571	16	2505	886	135076
201-300	400	101375	19	4828	419	106203
301-400	173	60644	15	5408	188	66052
401-500	107	49400	15	6823	122	56223
501-1000	104	72739	48	34695	152	107434
1001-2000	21	28805	34	49238	55	78043
2001-3000	7	16856	12	29245	19	46101
3001-4000	2	7478	5	17146	7	24624
4001-5000	1	4145	3	13079	4	17224
5000-	0	0	1	8047	1	8047
Total	6619	639529	180	171734	6799	811263

Sheep and lands

More than 1.1×10^6 ha pasture and grazing land can be utilised by the ruminants. Only limited number of cattle and goats are grazing on these lands, not more than 200,000 ha are used by this species alone.

Most of these lands should be grazed by sheep but the sheep density is rather low in all over the country. According to our opinion 1.5-2.0 ewes per ha could be the expected minimum level of sheep stocking rate in our grazing lands. Those data in Fig. 1 are quite far from the numbers mentioned above.

Concerning the whole agricultural land of Hungary (5.4 million ha approx.), the sheep stocking rate calculated to 100 ha is much lower. A big change occurred between 1991 and 1996. During this time the average sheep density was reduced from 34 to 18 heads per 100 ha agricultural land, which means that about 47% of animals disappeared!

As a consequence of this we do not have to face overgrazing on our grazing and pasture lands but we have problems with a lot of native pasture land which has become wild again. There are similar problems with poor quality arable lands which are only partly cultivated now.

The shortage of animals (sheep) is our biggest problem now. So, our basic breeding goal is simple: to recreate our sheep industry by increasing back the number of animals utilising our land. The other reason of increasing our sheep number is to give possibility to the people living far from bigger cities and/or live on poor quality lands to be able to survive and keep them settled.

We would like to and have to increase the number of sheep and the sheep farms. In this process we want to have economic and breeding effects on the breeding aims of our old and new farmers.

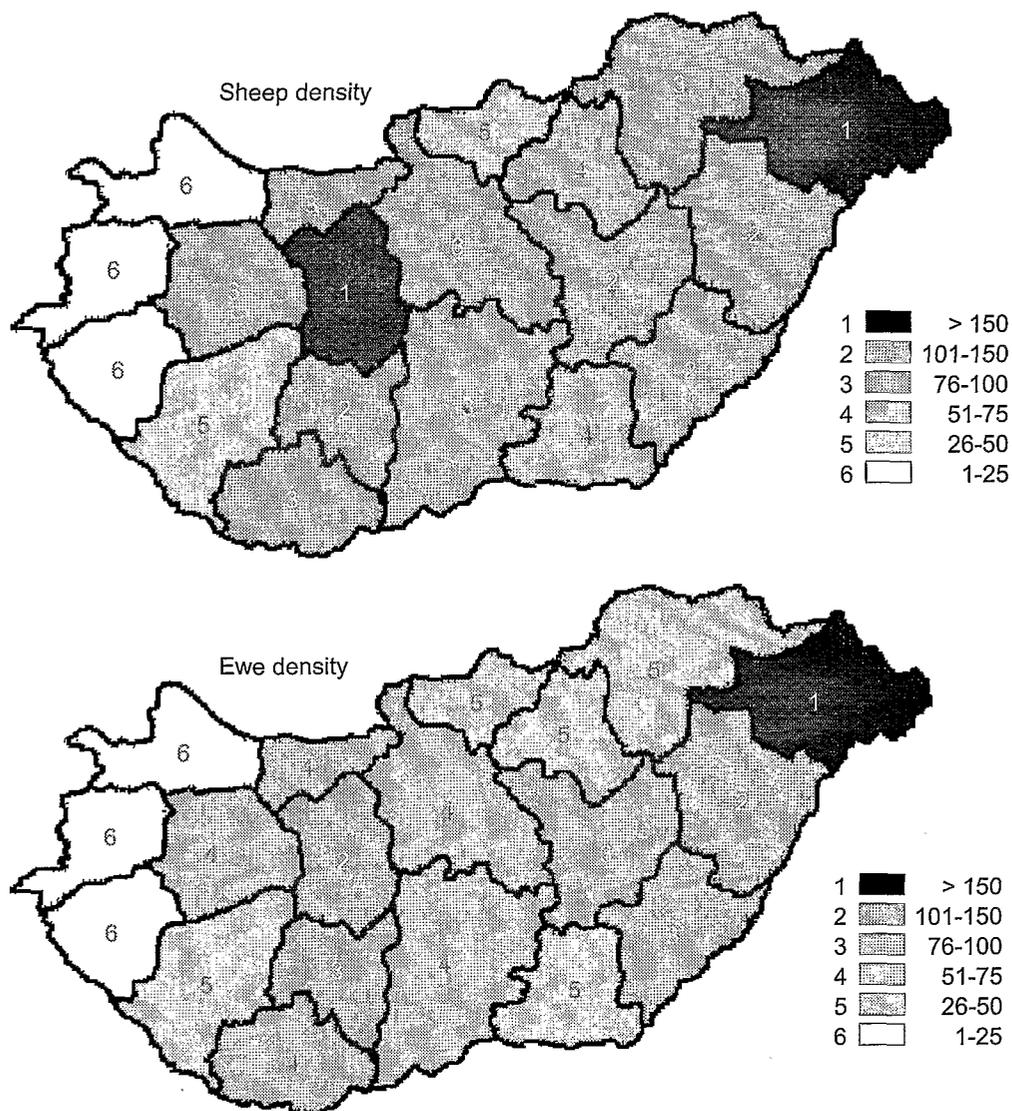


Fig. 1. Sheep and ewe density on Hungarian pastures and grazing lands (No. of animal per 100 ha) (Source: Kukovics *et al.*, 1997).

The meat as well as milk breeds and genotypes will be more desirable than the local sheep in this programme.

Only a few programmes combining the environmental conditions and the different breeding and production system are in progress. One of them is organized by the Awassi Corporation and their work will be presented separately.

Breeding goals in meat production

Meat is the dominating product of the sheep industry, about 60-95 % of the total income is obtained from selling lambs. There are three main lamb marketing seasons during the year (Easter, Ferragusto, Christmas), however, the lambing is more or less continuous in the country. On most of the bigger farms (above 150-200 head of ewes) a divided lambing system is used and many of them also utilize the frequent lambing method.

Besides organising lambings, different crossbreeding programmes are in progress in the commercial farms. These are mainly direct crossings to improve the individual meat production of the lambs where the local Merinos are mated by the rams of different meat breeds (Table 2).

Table 2. The average production data of meat sheep breeds and that of the Merinos (Kukovics, 1996)

Breed	ADG (g)		Lambing %	
	Male	Female	per 100 ewes	per 100 lambings
German Mutton Merino	327 - 386	226 - 349	67 - 160	107 - 143
German Blackhead Mutton Sheep	238 - 382	279 - 460	50 - 147	144 - 175
Suffolk	328 - 491	333 - 437	80 - 114	134 - 175
Texel	280 - 300	330 - 340	92 - 121	100 - 131
Ile de France	330 - 350	280 - 290	105 - 120	130 - 140
Hungarian Merino	256 - 380	243 - 335	70 - 170	104 - 187
Australian Merino	190 - 240	160 - 175	50 - 70	110 - 130
Booroola Merino	260 - 320	300 - 330	100 - 120	170 - 180
Fertile Merino	280 - 340	225 - 298	118 - 198	144 - 265

The German breeds and the Suffolk are the most favourable ones, the other two are not too popular in the country. The indirect crossbreeding programmes are utilised only on few farms nowadays (Fig. 2).

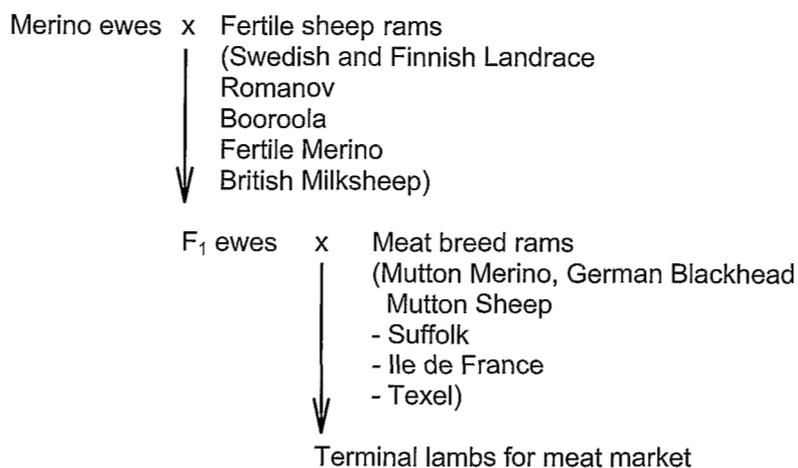


Fig. 2. Indirect crossbreeding programmes for increasing meat production.

On the first level of this programme (F₁) we could manage to increase the lambing rate by 50-100% in comparison to the original Merinos. In the second level, we have a good number of lambs with perfect meat production ability.

The basic goal of meat production is to increase the number of marketed lambs and the improvement of meat quality comes second.

Breeding goals in milk production

There are about 50-60,000 ewes milked in Hungary at present. Four years ago this number was more than double and at the end of 70's about one half of the total ewe population was milked. The latest big decrease started in early spring of 1993 when animal health (foot and mouth disease) problems occurred in Italy and most of the lambs produced for Easter selling remained in our country. Unfortunately, this event happened parallel with the reorganization of agriculture and many dairy and other sheep farms have gone bankrupt.

The expected milk quantity is only 2×10^6 litres in 1997, because of the lack of sheep milk the first breeding goal is to increase the milk yield of the ewes, and only the second one could be to improve the fat and protein contents of the milk.

A big part of the milked ewe population belongs to Merino breeds, however, there are some milk breeds available in the country. To increase the milking ability of Merino sheep several crossbreeding programmes were started. The main production data of the milked sheep genotypes in Hungary are shown in Table 3.

Table 3. Milking sheep genotypes in Hungary (Kukovics, 1996)

Genotype	Milk yield (litre)	Weaned lambs (%)
Awassi	300 - 336 (150 - 200)	90 - 95
(Merino x Awassi) F ₁	80 - 105	90 - 95
Milking Cigája	160 - 200	130 - 140
Lacaune	64 - 10	130 - 140
(Merino x Lacaune) F ₁	60 - 80	125 - 135
(Merino x Plevén Blackhead) F ₁	60 - 80	100 - 109
(Plevén F ₁ x Black East Friesian)	100 - 130	110 - 114
Merino	30 - 50	90 - 95
British Milkshoop	160 - 220 (100)	180 - 195
(Merino x British Milkshoop) F ₁	90 - 130	160 - 180

Conclusion

However, the basic breeding goals are to increase the meat and milk production of the ewes, the most important aim is to increase the number of sheep in Hungary. The whole sheep industry needs to be recreated.

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