

SUSTAINABLE GOAT FARMING IN THE CENTRAL AND EAST EUROPEAN REGIONS: I. THE BREEDING ASPECTS

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Abstract

The number of goats is only about eight-ten % of the sheep population in the region, while the number of goat farms is sometimes similar that of the sheep farms. In order to evaluate the possible sustainability of the goat farming and breeding in the region a survey was developed and circulated among the countries in the region (Albania, Serbia, Slovenia, Hungary, Czech Republic, Slovakia, Croatia, Romania, Bulgaria, Greece, as well as Montenegro, FYR Macedonia, Moldavia, Ukraine, Russian Federation, Belarus, Armenia, and Georgia).

The answers to the following questions were requested and processed in this part of the study: number of goats, number of goat farms, number of breeds (native and exotic), age of does, length of lactation, size of herds on farms.

The most important information could be summarised as follows: apart from Romania the number of animals is falling back; several native breeds are bred in the countries, but the most popular exotic breeds (like Alpine, Saanen, Nubian, Boer) could be found in each countries; 5-10% of the does are belong to nucleus herds and taking part in performance test, but 75-90% of goats are not involved in the register.

Key words: *number of goats, number of goat farms, breeds, milk production*

INTRODUCTION

The goat farming and breeding as well as goat milk and meat production have many thousands of history in the central, Eastern and south-east regions of Europe. During the last two decades the whole economy of these countries were totally reorganized, and only limited information are available about the present situation of goat farming in these particular regions.

The occasion of “ European Regional Conference on Goats 2014” gave a good opportunity to collect the knowledge about the situation of goat farming from the countries of nearly twenty countries of central and East part of Europe.

MATERIAL AND METHODS

In order to collect the most wide information and data about the goat farming in the regions of central, eastern, and south-east European countries a survey was developed and circulated among the experts of the countries.

The answers to the following questions were requested and processed in this part of the study: number of goats, number of goat farms, number of breeds (native and exotic), age of does, level of production (milk and meat, reproduction), length of lactation, size of herds on farms.

The following countries were taking part in the data collection: Albania, Armenia, Belarus, Bulgaria, Czech Republic, Croatia, Georgia, Greece, Hungary, Macedonia FYR, Moldavia, Montenegro, Romania, Russia, Serbia, Slovakia, Slovenia, and Ukraine. Data was collecting from one organization per country except Hungary, from where the information of three organizations were used: Central Office of Statistics (Hungary-KSH); Hungarian Sheep and Goat Breeders’ Association (Hungary-MJKSZ) and Hungarian Sheep and Goat Dairying Public Utility Association (Hungary-MJKKHE).

The collected data were summarized and evaluated using Microsoft SPSS for Windows 10.0 software.

RESULTS AND DISCUSSIONS

The number of goats kept

The number of goats kept in the various studied countries was changing very much (*Table 1*). In most of the countries these number is rather limited or low, but in the countries having more mountain and / or hilly regions the number of goats kept was much higher. Greece itself had almost the same amount (4.8 million heads) of goats as Russia (2.1 million), Romania (1.6 million), Albania (0.8 million) and Ukraine (0.66 million) together. Only two countries (Bulgaria above 293 thousand; Serbia over 225 thousand) had more than two hundred goats. This number exceeded the one hundred heads (120 thousand) in Moldavia. All in others the goat number was much lower than the one hundred thousand heads. Of course, in some countries no exact was available about goats: in Czech Republic only the nucleus herds were known; in Georgia the number of animals was only estimated. In several countries (like Russia, Georgia, Belarus, Moldavia) the number of goat farms was not known, and in Czech Republic only the registered nucleus herds were under in the base of evaluation.

The size of goat farms / herds was also rather low, in general. dominating part of farms had less than ten heads in several countries: Montenegro 80%; Czech Republic, 76.7%; Slovakia 70.9%; Bulgaria 66.78%, Greece and Slovenia 60-60 %; and according to the official data of Hungary was above 91%. In some cases some other categories were dominating. In Albania 39.2% of herds were belonging to between 10 and 30 heads category. In Armenia 35% of farms could be listed to the category between 100 and 200 heads. Some 60% of the known goat farms had animals between 50 and 100 heads in Georgia. In Serbia, 40 % of goat farms were belonging to 50-100 heads of category. In Belarus for instance most of the goat (98%) were kept in back yards, and about 24 peasant farms known with had 1 300 heads (2%) altogether. The number and ratio of real professional and industrial producers was rather low in the whole region. Very low ratio of farms had animals between 500 and 1 000 heads, and only a couple of farms had more than 1 000 heads of goats.

Concerning other countries, in Russia, 10% of goats belong to agricultural enterprises, the remaining 90% is owned by private farms (households). In Ukraine, 664 800 heads of goats kept all together, from which 659 400 were in households (99%); and 5 400 heads bred in agricultural enterprises (1%). There were only two breeding farms in Ukraine, where 300 goat females kept, and on another two farms 700 hundred of heads were bred, and only a couple of heads could be found on over dominated part of farms. In Montenegro, total number of goats in 2014 was at around 35,000 animals. In 2012 there were 402 herds raising more than 10 animals having 18 538 heads (46 heads in average).

The breeds and breeding: towards the copy of Holstein friesian effects

The ratio and number of local / indigenous breeds were more than over dominated in all studied countries, but these numbers covered those animals which were developed by crossing the local goats with exotic breeds (*Table 2*). However, the number and ratio of exotic (mainly dairy) goats could be consider as negligible ones, but their effects in crossbreeding have been intensively increasing during the last decade, particularly over the previous couple of years.

The number of exotic breeds (like Alpine, Saanen, Nubian, Toggenburg, etc.) have been also increasing, and their main source were mainly France, and some limited number of animals were also imported from The Netherland, Switzerland, Germany, USA, or Italy. The fashion of meat goat – meaning the import and use of Boer goat – started at the second half of 1990's, and by nowadays its increasing tendency slowed down, because of the low profitability. The hair (angora and mohair) goats also had a fashion period since middle of 1990's, when many people thought they would be the best one in the future, but the wave has gone and only limited number of these animals remained in this part of Europe.

Within the exotic imported dairy breeds the French Alpine and Saanen had the dominance, and almost all countries were using these breeds in crossbreeding to improve the milking ability of local goat breeds. The local versions of these breeds were developed in Czech Republic and Slovakia, or nationalised like in Slovenia (Slovenian Alpine and Saanen). In other countries these exotic breeds bred under the name of original breeds. As the popularity of these breeds (Alpine and Saanen) is increasing a similar effect could be reach like it was done in the case of dairy cattle (Holstein-friesian), and the dairy goats will be more and more similar to these breeds, and the genetic background of original local breeds will slowly demolishing.

The ratio of goats in the nucleus herds were under 10 % of the total goat population in every studied countries, what's more, practically between 3 and 5%. The bigger part (above 50%) of the exotic breeds (Alpine, Saanen, Nubian, Boer, Toggenburg, e.t.c.) are included in nucleus herds in most countries.

There were various numbers of local breeds in the studied countries, more than eleven kinds in Albania, for instance, and only one dominating breed in some west Balkan countries. There was one native meat breed in Slovenia, and some native hair (mohair and cashmere) breeds in Russia.

The level of milk production

The average milk production was much lower in the case of local breeds than in the imported exotic goat breeds (*Table 3*). This difference was

sometimes more than double. Czech Republic and Slovakia, and partly Slovenia had an exceptional situation as the Alpine and Saanen breeds were nationalised (White Short Hair, Brown Short Hair; or Slovenian Alpine or Saanen). The length of milking period (number of milking days) was low in general, but had an increasing tendency with the elevating ratio of exotic breeds as a result of crossbreeding. The pure bred exotic breed had dominantly 250-300 days, or sometimes above 300 days of milking period. On the contrary, the local breeds had 80-120 days shorter milking season.

The age of does

The age distribution of does (*Table 4*) could give a very good picture about the state of the goat sector and the level of replacements, which is a tool for increase the production ability and the quality values of the given herds. Below two years of age could mean two different things. If this ratio is too small (under 20%) the replacement could just cover the loss of adult does and the necessary selection. In the case that this ratio exceeds the 30% the given herd could be a beginner. If the age group above 6 years of age is exceeds the 25% that means the given herd is getting too old and needs significant young female replacement to be able to survive.

In the case of studied countries the goat populations in Georgia and Slovenia are under an intensive increasing tendency. The age distribution in Greece is almost optimal, and in Albania, Croatia, Hungary and Slovakia are well balanced. The breeding program in Armenia started only two years before the data collection and the population is still young. In the case of Serbia, the 65% of does were between 4 and above 6 years, which means it would need a bigger ratio of replacement.

On an average, the breeding doe population of the studied countries could be qualified as well balanced one, however, these data in the case of most countries covered mainly the registered breeding stock.

Table 1

Goat farm and herd sizes in Central and Eastern Europe

Country	Goats (no.)	Goat farms (no.)	% farms with < 10 heads	% farms with 10-30 heads	% farms with 30-50 heads	% farms with 50-100	% farms with 100-200	% farms with 200-500	% farms with 500-1 000	% farms with 1 000 heads
Albania	810 000	138 000	22.6	39.2	23.3	9.2	3.9	1.1	-	-
Armenia	20 500	28	12	8	10	27	35	8	-	-
Belarus	68 000	?								
Bulgaria	293 600	65 407	66.78	3.21	2.01	0.83	0.34	-	-	-
Croatia	65 000	230	14	16	26	31	9	3	1	-
Czech Republic	24 000	313	76.7	16.0	3.2	1.9	1.6	0.3	0.3	-
Georgia	70 000	Not known	20	20	-	60	-	-	-	-

Greece	4 821	138	60	10	13	5	5	6	1	-
Hungary-KSH	46	19	91.1	7.6	0.9	0.3	0.1	-	-	-
Hungary-MJKSZ	20	790	29.7	37.8	15.2	11.7	5.0	0.6	-	-
Macedonia (FYR)	63	5 746	77.74	17.21	2.82	1.76	0.40	0.07	-	-
Rep of Moldova	120	?								
Montenegro	35	3 580	80,0	16,0			4,0			
Romania	1 605	280	21.2	14	18	18	15	8.4	3.1	2.3
Russian Fed.	2 090	?								
Serbia	225	3 000	-	20	-	40	25	15	-	-
Slovakia	35	898	70.9	20.4	4.2	2.6	1.3	0.45	-	0.11
Slovenia	26	158	60	30	7	2	1	-	-	-
Ukraine	664	?								

* Data refer only to registered goat farms

Table 2
Names and distributions of goat breeds in Central and Eastern Europe

Country	Local breed goats (no.)	Exotic milk goats (no.)	Exotic meat goats (no.)	Local breeds				Imported (exotic) breeds		
				Milk	Meat	Wool	Down	Milk	Meat	Wool/down
Albania	805 000	5 000		Dragobi, Has, Velipoje, Bulqari, Mat, Capore e Mokrres, Shyte, Ligenas, Dukat, Muzhake, Lara e Kallmetit, Native non classified				A; S		
Armenia	30 500	291		E&W Armenian				S; A; T; N		
Belarus	68 000*			Local native, Gorky				S; T; WR		
Bulgaria	293 639	2 000		Local goats, Bulgarian white				S; A		
Croatia	56 700	8 000	300	Balkan				A; S; BDE		
Czech Republic	23 580*	220	210	WSH, BSH				A; S; N; VB;	B; DD	ANG; CAS
Georgia	70 000*			Local				A; S		
Greece	4 821 000*			Skopelos, others				A; D; M;		
Hungary-MJKSZ	700	2 900	500	HN; HB; HM; HW				A; S; N; M	B	
Macedonia (FYR)	42 710	20 875		Balkan				A; S		
Rep of Moldova	120 000*			Local				A; S		
Montenegro	35 140*			Balkan				A; S		
Romania	1 445 247	64.2 64	2 000	Carpatina, Banatian White				A; S		ANG

Russian Federation	2 090 000*	18 000		Local goats		Soviet woolen, Dagestani	Orenburg, Altai Mountain, Don, White Dagestani	S; G;		
Serbia	53 000	8 000	-	Balkan				A; S	B	
Slovakia	32 500	2 500	-	WSH; BSH				A; S; N	C; D; B	MO; CAS
Slovenia	21 000	5 000	300		DR			A; S	B	
Ukraine	665 000*			Local Ukrainian				A; S; T; N,		

* Total number of goats. ** Data refer only to registered goat farms.

A = Alpine; ANG = Angora; B = Boer; BDE = Bunte Deutsche Edelziege; BSH = Brown Shorthair; C = Cameron; CAS = Cashmere; D = Damascus; DD = Dutch Dwarf; DR = Dreznica; DU = Durine; E&W = Eastern and Western Armenian; HB = Hungarian Brown; G = Girgentana; HM = Hungarian Multicolour; HW = Hungarian White; HN = Hungarian Native; M = Murcia; N = Nubian/Anglo Nubian; VB = Valis Blackneck; WSH = White Shorthair.

Table 3

Average goat milk yields and numbers of milking days in Central and Eastern Europe

Country	Average milk yields (liters/year)		Number of milking days per year (% of goats)					
	Local breeds	Exotic breeds	< 150	150–180	180–210	210–250	250–300	> 300
Albania	85–240	250–350	6.2	62.6	18.7	-	12.5	-
Armenia	100–450	800	Native 100%	C 10%	E 30%; C 70%	C 20%; E 30%	E 40%	
Belarus	300–400	700–800			Local goats		Gorky	S; A; T; RW
Bulgaria	180–250	450–550	60	40	-	-	-	-
Croatia	200–350	550–750	3	7	16	48	18	8
Czech Republic	650–740	750–850	12	40	28	16	2.8	0.2
Georgia	150	500–700		60		40		
Greece	150	320	-	Local Greek	-	Skopelos	A; D; M	-
Hungary–KSH	-	-	-	-	-	-	-	-
Hungary–MJKSZ	190–600	420–880	13.43	21.84	16.43	18.44	18.24	11.62
Macedonia (FYR)								
Rep. of Moldova	300	600–1000			Local goat		A; S	
Montenegro	100–160	400–500			Balkan	A; S		
Romania	300	850			local goat			A; S

Russian Fed.								
Serbia	250–300	650–700		Balkan		A	S	
Slovakia	530–650	650–740	WSH 5.9%	WSH 87.8%	WSH 6.3%	-	-	-
			BSH 5.9 %	BSH 58.8%	BSH 35.3%			
			AN 27.3%	AN 45.4%	AN 27.3%			
Slovenia	300–400	480–600		-	Dreznica goat	S	A	-

A = Alpine; S = Saanen; D = Damascus; RW = Russian White; M = Murcia; WSH = White Shorthair; BSH = Brown Shorthair; AN = Anglo Nubian; T = Toggenburg; E = exotic; C = local x exotic cross-breed

Table 4

Averages ages of does in Central and Eastern Europe

Country	% of goats			
	< 2 years	2–4 years	4–6 years	> 6 years
Albania	18.2	48.6	32.9	0.3
Armenia	8	80	10	2
Bulgaria	-	-	-	-
Croatia	18	29	38	15
Czech Republic	-	-	-	-
Georgia	50	30	20	-
Greece	20	50	20	10
Hungary–MJKSZ	16.6	31	28.5	23.9
Romania	-	-	-	-
Serbia	20	15	40	25
Slovakia*	21.6	29.0	22.6	26.8
Slovenia	43	25	17	15

* Data refer only to nucleus herds.

CONCLUSIONS

The above mentioned information made clear that the number of goats has been decreasing in the region with the exception of Romania. The main conclusions of this part of study could be summarised as follows:

- In most countries goats are kept in small herds, the ratio of profitable specialised goat farms (which are dominantly dairy herds) is low.
- The appreciation of local indigenous goat breeds is lower than necessary, and the low profitability is behind this fact.
- Only limited part of the goats kept is involved in nucleus breeding, the production ability of most part of goats is not known.

- The number of exotic breeds were increasing and their use in crossbreeding had bigger and bigger importance. This effect has got the same tendency as that of Holstein friesian breed in dairy cattle.
- The age distribution of the female goats kept was desirable only in small part of the countries studied.

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