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PROFITABILITY OF SHEEP BREEDING AND POSSIBILITIES OF ITS INCREASE

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The paper brings quantification of the present viability of sheep breeding in Slovakia which is absent in literary data as well as other knowledge extending quality judging of this branch. In 1995 rearings of selected set were generating perpetual losses on average (–557 Sk/ewe/year) with profitability of receipts (–35.6%). In rearings with higher profitability (over 5%) greater efficiency, profit (539 Sk) and profitability of receipts (31.7%) were achieved. In rearings with negative profitability over 5% the loss of 1 107 Sk/ewe/year was recorded and average profitability of receipts amounted to –88.1%. Profitability of sheep breeding can be achieved above all by increased sheep productivity, by including of aliquot part of subsidies due to farming in worse conditions and at deliberate spending of production costs, as demonstrated on model calculation.

profitability; yields; sales income; subsidies; costs; sheep; lambs; cheese

INTRODUCTION

The process of transformation of agricultural production had a significant impact on economy of sheep breeding. At prevailing generation of perpetual losses numbers of animals decreased. While to January 1, 1990 621,000 sheep were reared in Slovakia, their number fell to 397,000 to January 1, 1995 and to January 1, 1997 there were 419,000 sheep. The fall was also recorded in production of sheep products. At the same time sheep rearing participates by meat and milk production in providing food safety of the state and fulfils also significant out-production functions when it affects positively ecology and makes up the character of landscape.

The solution of tasks of profitability of sheep breeding is still highly topical even in changed economic and legislative conditions. The problem of economy of sheep rearing, which is also connected with profitability of this branch, was in the centre of attention of many authors. The proper costs of agricultural enterprises, including of sheep rearing, were processed by Kubánková et al. (1995). A special attention of the present economy of

sheep breeding and its prediction was devoted by V1áči1 (1996). The tasks of production and consumption of products from sheep rearing have been solved by Žatkovič (1996). Of foreign authors, the problems of costs in sheep rearing were dealt by Mills (1989) in enterprises with rearing of dairy sheep in Great Britain and Korn (1991) in Germany who draws attention towards decrease of costs by replacement of concentrates by bulk feeds. Methodological issues of cost calculation were solved in CR by Novák (1996). To the position of costs in connection with the strategy was referred by Porter (1994).

Though more items were studied, another ones are to be solved. The study was aimed at evaluating of the level of profitability of sheep breeding in Slovakia a particularly to indicate possibilities of its increase.

MATERIAL AND METHODS

Factual material is formed by documents from business entities dealing with sheep rearing. The selected set includes 12,000 sheep. As to the density, 40 sheep fall to 100 ha of farm land. The set includes all domestic certified breeds (Merino, Tsigai and Improved Walachian breeds). The share of receipts from the sheep rearing is 3.9% of all receipts obtained from agricultural production. The data are related to 1995.

The method of relative numbers and comparison were used to judge the level of achieved economic results and their differentiation between rearings of higher profitability and generating of perpetual losses. In connection with it, bases for solution, as demonstrated on example of a model calculation, are proposed.

For better lucidity instead of absolute data on yields and costs, the priority was given to calculation per one average ewe which saturates its aliquot part of the other categories of sheep. The profitability of rearing was evaluated above all through the profitability of sales income, though also profitability of costs is present as a prevailing indicator. Profitability of receipts was calculated by the formula: (profit - loss: receipts) x 100. As the cost profitability is concerned, classic formula was used: (profit – loss: costs) x 100. In the yield particularly receipts were evaluated – amounts of sold products (derived from the level of reproduction) and average prices paid to primary producers. The yields of sheep rearing also comprised the part of subsidies given to the purposes of support of farming in worse natural conditions. They were based on the subsidy per 1 ha of farm land and percentage of receipts from sheep rearing in receipts from agricultural production. The proper costs were evaluated particularly by their structure. In intentions of marked manifestation of differentiation of economic results between rearings with higher

profitability and greater generating of perpetual losses, the group of higher profitability included rearings with profitability of receipts over 5%. On the other side, the group of higher generating of perpetual losses is formed by rearings with profitability worse than -5%.

The model calculation considered the breeding aims of domestic certified breeds, it was based on the level of prices as well as subsidies in 1996 and in costs predicted increase of production was accepted.

RESULTS AND DISCUSSION

The obtained level of economic results in sheep breeding in 1995 is presented by data in Tab. I, in the column of average of selected set. It is evident from the table that both indicators of profitability (of sales income and costs) give negative values. In absolute expression in calculation the loss 557 Sk falls per 1 average ewe and year. Considering that no literary data for comparison of indicators of profitability in sheep breeding for 1995 were not published, authors' results of 1994 are presented here when profitability of receipts was -69.5%.

Receipts are the main component of yields. Production orientation of selected set can be concluded from their structure which is formed by production of slaughter lambs, sheep lump cheese as well as rearing and breeding sheep. The volume of receipts is the function of amount of sold sheep products and prices received by primary producers. The amount of sold products is derived particularly from achieved reproduction parameters (Tab. II). As reported by Zatkovič (1996) in Slovakia in data of 1995 the fertility of ewes was 88.0%, mortality of lambs 9.0% and rearing of 80.8 lambs from 100 ewes. Compared with the all-Slovak mean in selected set the higher fertility by 9.6% was attained, more favourable mortality by 3.1% and higher rearing by 11 lambs. Reproduction indicators in studied rearings are very low in total and signal insufficient utilization of production potential of domestic certified breeds.

Tab. II also presents the sale of sheep products per animal. The all-Slovak mean in sales per 1 ewe represented 11.8 kg of slaughter sheep, 3.7 kg of it were slaughter lambs, 8.9 kg of sheep lump cheese and 2.7 kg of sheep raw wool. Compared with the data in Tab. II it can be seen that the sale of slaughter lambs is higher by 183.8% and the sale of cheese is lower by 15.7% in selected set.

With an aim to make possible the comparison in prices paid to primary Producers it can be presented here that in Slovakia an average price of slaughter lambs was 67.45 Sk, the price of the other slaughter sheep was 16.01 Sk, sheep cloddy cheese 55.01 Sk and raw wool 25.17 Sk. In selected set higher

I. Profitability, profit and yields in sheep rearing (1995)

		perpulse to		Of it rearings			
Indicator	Average for selected set		with higher profitability		with higher generating of perpetual losse		
	Sk	%	Sk	%	Sk	%	
Profitability of receipts	х	-35.6	х	31.7	х	-88.1	
Profitability of costs	х	-14.3	x	14.2	х .	-28.5	
Per 1 average ewe falls:		И	MSEL	MIG (VA. 31		
Economic result	-557	х	539	X	-1 107	x	
Yields	3 353	х	4 342	X	2 778	x	
Including:	en nám	Mariat			Billings	boing	
Receipts - slaughter lambs	739	47.3	655	38.5	431	34.3	
- the other slaughter sheep	77	4.9	59	3.4	114	9.	
- rearing and breeding sheep	234	15.0	-	-	126	10.0	
 sheep cloddy cheese 	407	26.0	941	55.3	454	36.3	
- sheep raw wool	106	6.8	48	2.8	131	10.	
Total receipts	1 563	100.0	1 703	100.0	1 256	100.	
Subsidies – support of rearing	598	41.9	709	36.5	633	60.	
- milk quality	100	7.0	253	13.0	106	10.	
 worse conditions 	632	44.3	981	50.5	300	28.	
– etceteras	96	6.8	1	- 9	- August	19 29	
Total subsidies	1 426	100.0	1 943	100.0	1 039	100.	
The other yields	108	х	70	x	26	x	
Change of the state of reserves, products and animals	256	x	626	х	457	х	

prices were achieved in sale of slaughter lamb and raw wool compared with the Slovak average.

Other components of yields, as mentioned in Tab. I, include mainly subsidies as well as other yields and change in the state of reserves of products and animals which follows especially from the turnover of the herd.

The level of profitability of sheep rearing does not depend only on yields obtained, but also on spent costs, as presented in Tab. III. In selected set the costs per 100 feeding days of the foundation herd are 861 Sk. K u b á n k o v á et al. (1996) report the sum 948 Sk, of it, e.g., 241 Sk fall to consumption of produced and purchased feeds, 181 Sk fall to labour costs and 182 Sk are overheads.

penroduction, sale and prices in sheep rearing (1995)

I. Reproduce	Average	Of it rearings		
Indicator	for selected set	with higher profitability	with higher generating of perpetual losses	
Reproduction		C R E		
- fertility of ewes (%)	97.6	100.5	88.3	
mortality of lambs from weaning (%)	5.9	4.6	5.6	
rearing of lambs (number of animals.100 ewes ⁻¹)	91.8	95.9	83.3	
Sale (kg.ewe ⁻¹)		. F. i i		
- slaughter lambs	10.5	9.1	6.5	
- the other slaughter sheep	7.2	3.2	12.0	
- rearing and breeding sheep ^{x1}	0.09	-3-811	0.04	
- sheep lump cheese	7.5	17.2	8.4	
- sheep raw wool	3.6	1.9	4.3	
Average prices paid to primary producers (Sk.kg ⁻¹)	4 Junean			
- slaughter lambs	70.53	72.17	66.87	
- the other slaughter sheep	10.72	18.25	9.42	
- rearing and breeding sheep ^{x2}	2 601.00		3 909.00	
- sheep lump cheese	54.37	52.11	54.14	
- sheep raw wool	29.54	25.87	30.70	

Though in the selected set costs are lower (per 100 feeding days of the foundation herd by 9.2%) than in the set of the Research Institute of Economy of Food Production, the total costs exceed the level of achieved yields in sheep rearing and the result is loss. At the same time, it should be noted that in selected set are rearings which achieve the profit. With respect to this, differentiation in economic results among rearings with higher profitability and rearings with generating of perpetual losses is referred to. It follows from Tab. I that in rearings with higher profitability the profit per ewe and year is 539 Sk, in rearings with higher generating of perpetual losses the profit is 1,107 Sk. In investigating the reasons it was found that in rearings with higher Profitability the total receipts were by 35.6% higher, especially due to receipts for sold slaughter lambs and sheep lump cheese. In reproduction the fertility of ewes was by 12.2% higher and more by 12.6 lambs were reared from 100 ewes compared with rearings characterized by higher generating of perpetual losses (Tab. II). Of other natural indicators it should be mentioned: higher sale of slaughter lambs by 40.0% and sheep lump cheese by 104.8%. Higher receipts were achieved due to higher selling prices of slaughter lambs by 8.2%.

III. Costs of sheep rearing (1995)

	00 114 270			Of it rearings	earings	
Indicator Towns of Programme Control of Programme C	selec	Average 101 selected set	with higher	with higher profitability	with higher of perpet	with higher generating of perpetual losses
	Sk	%	Sk	%	Sk	%
Total costs of rearing per 1 average ewe and year	3 910	×	3 803	X	3 885	×
Costs per 100 head of animals of foundation herd	861	100.0	843	100.0	873	100.0
Including - consumption of purchased feeds	33	3.8	15	1.8	31	3.6
- consumption of proper feeds	185	21.5	163	19.3	194	22.2
- consumption of the other materials	23	2.7	20	2.4	23	2.6
- labour costs, principle of the princip	169	19.6	209	24.8	165	18.9
- repairs and maintenance	4	0.4	1	1	9	0.7
- depreciation of movable investment property	34	3.9	21	2.5	32	3.6
- depreciation of animals	77	0.6	102	12.1	92	8.7
- social costs	64	7.4	77	9.1	62	7.1
- the other direct costs	125	14.5	70	8.3	142	16.3
- overheads	147	17.2	166	19.7	142	16.3

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Subsidies in rearings with higher profitability were higher by 87.0% (Tab. I). In view of subsidies purposes the dominant position was represented by subsidies for the support of farming in worse natural conditions. Average sum per 1 ha of farm land was higher by 11.0% and amounted to 2,797 Sk, likewise the proportion of receipts from sheep rearing was higher by 6.0%.

In rearings with higher profitability, except better indicators in the yields, lower total costs of rearing per ewe and year by 2.1% were achieved (Tab. III). Even after calculation of costs of the foundation herd per 100 feeding days, the costs are lower, though in some cost items more significant excess occurred (labour costs, depreciation of animals).

It can be seen from the above that in sheep rearings with higher profitability, the profitability was reached mainly due to increased yields. In the difference of economic result in rearings with higher profitability (1,646 Sk per 1 average ewe) compared with rearings with higher generating of perpetual losses the total subsidies participated by 54.9%. Subsidies given for the reason of worse conditions presented the share 41.4%. On the other side, in rearings with higher generating of perpetual losses negative value of indicator – profitability was shown and relevantly lower yields were recorded, especially receipts (in connection with it – indicators of reproduction and sale) and subsidies, particularly due to farming in worse conditions.

Based on the results obtained it can be said that in removal of generating of perpetual losses and stimulation of the interest of breeders in development of this branch, the primary target is to increase efficiency. This consists above all in increase of fertility, milk efficiency and intensity of lamb growth. Routes and possibilities of the progress of efficiency are presented in breeding programme and in Updated Concept of the Development of Sheep Rearing to the Year 2000, approved by the Ministry of Soil Management of SR in 1995.

Important prerequisites of profitability of sheep rearing include also production conditions (classification of entities by the group of soil price) whose judging is considered by present subsidies. Aliquot part of them is to be comprised in the yields of sheep rearing.

At the present, sheep with dual-purpose efficiency are reared, at the same time about 75% are concentrated on milk production and 25% on meat production. If these proportions and breeding purposes after direction are taken into account, we get the picture on average model productivity of sheep population in SR, as presented in Tab. IV. The model calculation is based on the rearing of 125 lambs from 100 ewes. It is necessary to provide a sufficient amount of quality reproduction material. Its main source is represented, in overwhelming part, by the rearing proper (additional – purchase), the structure of the herd should be adapted to this purpose. It should be taken into

consideration that the basis of higher efficiency and hence also profitability of rearing are quality reproduction ewe-lambs and not only momentary financial advantage of slaughter lambs can be seen.

Increase of efficiency from managerial aspect means digression of fixed costs per production unit and hence also decrease in total costs of product unit what has a positive influence on increase of profitability. Efforts of cost profitability cannot be omitted. As reported by Porter (1994) not by coincidence, in connection with coping with competitive forces to surpass other

IV. Model calculation in sheep rearing

Hypothetic indicators	Sk	%
Profitability of sales income	х	12.5
Profitability of costs	x	8.4
Per 1 average ewe and year	ellidia la	
Economic result	312	х
Total yields	4 137	x
Including:		
Receipts – slaughter lambs	1 370	55.1
- the other slaughter sheep	161	6.5
- rearing and breeding sheep	93	3.7
 sheep lump cheese 	770	31.0
- sheep raw wool	92	3.7
Total receipts	2 486	100.0
Sale in natural units	17 m lank sm	
- slaughter lambs 15.8 kg	x	x
- the other slaughter sheep 8.0 kg	x	х
- rearing and breeding sheep 0.04 ind	x	x
- sheep lump cheese 13.5 kg	x	x
. ⇒ sheep raw wool 3.6 kg	x	x
Total subsidies	1 651	100.0
Of it - support of rearing	600	36.4
- milk quality	423	25.6
Total costsm 3 735	100.0	
Of it – consumption of feeds	1 024	27.4
- labour costs	795	21.3
- social costs	321	8.6
- the other direct costs	453	12.1

companies involved in the branch, among general strategies in the first place - strategy of priority in total costs. The profitability of sales income 12.5% and profitability of costs 8.4% follow from the model calculation. Any deviation in costs or yields means other profitability.

In forming competitive environment only under adequate profitability further development of sheep rearing can be expected, as presupposed in the Indated Concept. According to it, the consumption of sheep meat should amount to 0.5 kg and that of sheep lump cheese - 0.6 kg per capita.

References

KORN, S.: Ökonomische Rahmeudauten in der Schafhaltung. Dtsch. Schafzucht, 83, 1991: 33-34.

KUBÁNKOVÁ, M. et al.: Vlastné náklady a výsledky hospodárenia PD a ŠM v SR za rok 1995 v triedení podľa výrobných oblastí (Actual costs and results of farming of cooperative farms and state farms in SR in 1995 in classification according to production regions). Bratislava, VÚEPP 1996.

MILLS, O.: Practical Sheep Dairying. Wellingborough, Northamptonshire, England, Thorsen Publishing Group 1989.

NOVÁK, J.: Metodika kalkulace nákladů v zemědelství (Methodology of calculation of costs in agriculture). Research Study of the Research Institute of Agricultural Economy. Praha 1996. PORTER, M. E.: Compatitive Strategy. Praha, Victoria Publishing a. s. 1994.

VLÁČIL, R.: Ekonomika chovu oviec na Slovensku a jej predikcia v roku 2000 (Economy of sheep rearing in Slovakia and its prediction in the year 2000). Zeměd. Ekon., 42, 1996; 315–319. ŽATKOVIČ, J.: Ovce – situačná výhľadová správa (Sheep – situation and prospective report). Bratislava, VÚEPP 1996: 1-28.

Updating of the concept of the development of sheep rearing in SR to the year 2000. The Ministry of Soil Management of the Slovak Republic. Bratislava, 1995: 1-43.

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Rentabilita chovu oviec a možnosti jej zvyšovania.

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V práci sa zaoberáme problematikou rentability chovu oviec. Pri riešení využívame podklady vybraného súboru za rok 1995 a metódy pomerných čísel a komparácie. Údaje sú prepočítané na 1 priemernú bahnicu. Priemerné výsledky súboru sme porovnávali so situáciou v SR, pokiaľ k tomu boli pramene, alebo v rámci súboru sme Porovnávali chovy s vyššou ziskovosťou (nad 5 % rentability tržieb) s chovmi s vyšsou stratovosťou (nad –5 %) v záujme diferenciácie výsledkov. Na základe toho navrhujeme východiská na riešenie, ktoré implantujeme do modelovej kalkulácie rentabilného chovu.

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Zistili sme, že v roku 1995 bol chov oviec vo vybranom súbore nerentabilný (tab. I). V prepočte na 1 bahnicu bola strata 557 Sk, rentabilita tržieb –35,6 % a nákladová rentabilita –14,3 %. Z výnosov tvorili vo vybranom súbore najväčšiu položku tržby na jatočné jahňatá, ovčí hrudkový syr a chovné a plemenné ovce. Tržby sú závislé od množstva predaných výrobkov (podľa úrovne reprodukčných a úžitkových parametrov) a hladiny cien platených prvovýrobcom. Vo vybranom súbore bola plodnosť 97,6 %, čo je o 9,6 % viac ako priemer v SR, predaj jatočných jahniat 10,5 kg na bahnicu, t.j. o 183,8 % vyšší ako celoslovenský priemer (tab. II).

Dotácie tvorili najmä sumy na podporu chovu oviec a na podporu hospodárenia v horších podmienkach (tab. I). Náklady reprezentovali na 100 KD základného stáda 861 Sk (tab. III), čo je o 9,2 % menej, ako udáva Kubánková (1996). I keď viaceré ukazovatele boli vo vybranom súbore lepšie ako v priemere SR, celkové náklady prekročili výnosy a chov oviec bol stratový.

Analýzou sme zistili, že v súbore existujú i chovy s vyššou ziskovosťou, čo sa prejavilo ziskom 539 Sk na bahnicu a rok, rentabilitou tržieb 31,7 % a nákladovou rentabilitou 14,2 % (tab. I). Na druhej strane boli chovy, v ktorých úroveň nedosahovala ani priemer súboru a na bahnicu pripadla strata 1 107 Sk.

V porovnaní s chovmi s vyššou stratovosťou boli v chovoch s vyššou ziskovosťou väčšie tržby o 35,6 %. Bolo to najmä zásluhou vyššieho predaja jahniat, lepších reprodukčných ukazovateľov a vyššej ceny za jatočné jahňatá.

Väčšie tržby z chovu oviec a ich vyšší podiel z tržieb z poľnohospodárskej výroby v chovoch s vyššou ziskovosťou sa premietli vo zvýšení zápočtu dotácií z titulu hospodárenia v horších prírodných podmienkach. Významnú úlohu pri dosiahnutí rentability zohrali aj efektívnejšie vynaložené náklady, keď na 100 KD základného stáda v nadpriemerných podnikoch bolo treba 843 Sk.

Na príklade modelovej kalkulácie zohľadňujúcej chovné ciele a výrobné zameranie (tab. IV) poukazujeme, že na Slovensku možno rátať s dosahovaním rentabilného chovu oviec. V súčasnosti cesty k tomuto cieľu vedú predovšetkým cez zvyšovanie produktívnosti zvierat. Je potrebné akcelerovať využitie produkčného potenciálu oviec a usilovať o dosiahnutie chovných cieľov. Aj v podmienkach prechodu na trhovú ekonomiku zostáva rentabilita chovu oviec jeden zo základných postulátov rozvoja tohto odvetvia, ako bol rozpracovaný v Aktualizovanej koncepcii do roku 2000.

rentabilita; výnosy; tržby; dotácie; náklady; ovce; jahňatá; syr

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