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Factors affecting the profitability of different goat farm sizes in Hungary

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Abstract

The goat industry is the smallest among the so-called "big" domestic animal sectors in Hungary. At present the estimated size is about 60-70 thousand does, which are kept by approximately 7 000 holders. Not much information is available to evaluate the economic situation of the goat sector, thus a survey was carried out to find the answers to the following questions: What kinds of costs are relevant to the farms (such as feedstuffs, labour, insurance and animal health) and what is their ratio to the total expenditure? What incomes are earned on the different farms (by the selling of milk, milk products, kids for slaughter, meat, manure, feed and income from subsidies, etc.)? What yields for each product (milk, progeny) are obtained? Based on the data collected, farms were divided into the following size categories: numbers of does between 1-10; 11-30; 31-50; 51-100, 101-150; 151-200; 201-300 and above 300 head. There were 92 farms included in the survey having more than 8 000 head of goats in total. The level of production (milk and kids) was lower than expected in each farm size class. The average quantity of milk sold per doe did not reach 270 kg, and the average kidding rate was just above 150%. The most important income resource was the milk (and milk products) giving 75-80% of the total income of the farms. The income ratio from selling kids for slaughter did not exceed 18-20%. The biggest cost factors were feedstuff and labour. According to the balance ratios the goat breeding and production were only profitable in the smallest categories and above the 50-head classes. Between them only negative results could be expected providing the owner or the farmer produced for the market. If the production is meant only for family consumption the cost factors and the profitability were not as important. On the commercial goat farms increase in milk yield and improvement in kidding percentage could improve profitability.

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Introduction

The Hungarian goat population consists of sparse and relatively small herds. The average herd size is about 20 does and their offspring, varying in size between a few and 500 head (Kukovics *et al*., 2003). Estimated actual number of does is 60 000, but most of them are not registered. No data have been collected regarding goat farmers and their economic success (productivity, costs, incomes) since 1999 (Németh *et al*., 2003). Therefore, a representative study including all farm size categories became important.

Materials and Methods

The study was carried out in collaboration with the Department of Small Ruminants, Research Institute for Animal Breeding and Nutrition and the Hungarian Goat Keepers and Breeders' Association. Farms were chosen for the study from the register of the Association according to the following aspects: farm (herd) size, breed and locality within the country. Questionnaires were used to obtain information concerning size of the farm and herd, breed, utilization, feeding system and feed origin (self produced or purchased), animal health, employees and salaries, and data of expenses of these. Data of incomes from milk, dairy products, meat, breeding animals, dung and other sources were also collected. Ninety-two of the questionnaires returned contained data on 8307 goats (5867 does). Categories of herd sizes were created for the study: farms keeping 1-10, 11-30, 31-50, 51-100, 101-150, 151-200, 201-300 and more than 300 goats.

There are eight breeds; three of them purebred from imported stocks (Alpine, Saanen, Boer). The others are native types and are registered as breeds, namely Hungarian Dairy White, Hungarian Dairy Brown and Hungarian Dairy Multicolour, which started in 1999. All of these breeds were proportionally represented in the collected data. Collected data were captured, evaluated and analysed by means of Microsoft Excel 7.5.

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Results and Discussion

A correlation was observed between the number of goats and the size of the area of land used. The average area increased up to the 101-150 goat category (from 0.07 to 32 ha) and then decreased. A surprisingly small size of land was used in the 201-300 category, which was similar to the 31-50 category (3.2 ha), probably indicating that most of the farms of this category use rented land.

The largest variable expense was that of feeding (Figure 1), representing more than 40% in almost all herd size categories. In the 201-300 head category feed expenses were less than 40%. The proportion of purchased feed was significant in all size categories, but found to be the highest in the 101-150 head category reaching 72%. Expenses of self produced feed were the highest (62%) in the 151-200 head category. On average, about 50% of feeding needs are covered from external sources. In general we can say that goat keepers were significantly dependent on external sources which greatly influence, increasing, variable expenses of animal keeping. Average feed expenses per goat and per doe were 9 903 and 16 259 HUF/year, respectively (1 USD = about 220 HUF).

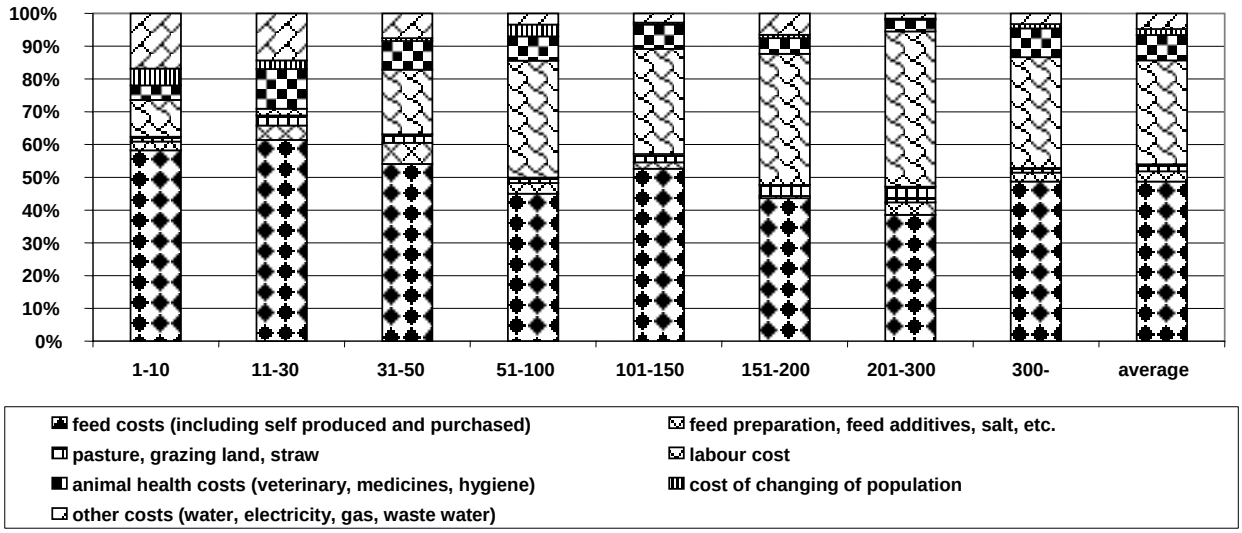

Figure 1 Distribution of the different costs according to herd size

Labour expenses increased with farm size, except category 11-30 where minimal salaries were paid, since there were no external employees on these farms. It may be explained by the fact that the producer calculates his own salary as a part of the income, while on larger farms expenses of salaries of employees must also be covered by the income of the enterprise. A significant proportion of farms did not calculate any salary for the owner. Salaries and salary-like expenses made up the greatest expense, 48% of total expenses, in the 201-300 category. Average salary/goat was slightly more than 9.000 HUF/year/doe. It could not be explained from the study of animal health expenses (veterinary, medicine, animal hygiene) why the highest (11%) expenses for animal health was observed in the 11-30 category, and the lowest (3%) in the 201-300 category. Average animal health cost was calculated as 8% of the total expenses. These costs exceed 1.500 HUF/goat/year, and include 42% for veterinary expenses, 30% for medicine expenses and 28% for animal hygiene.

Expenses caused by changes in herd size (losses caused culls) were the highest in farms of the smallest category (5%), the total calculated average was around 1%. In the case of other (stable) expenses (water, electricity, gas, heating material, waste water, etc.) a constant proportional decrease was observed until the 101-150 category (from 12 to 2%), growing to 6% in the next category and showing a decreasing tendency again. Its relative proportion was 5% as compared to total costs.

There were some differences between the incomes (Figure 2) of individual farms, but income from selling milk was the highest in the 51-100 size category. When milk and milk products were added together their income proportion was the highest in the 151-200 category, reaching 92%.

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Average milk production was 260 kg/doe, reaching 400 kg only in the smallest farm size category. The lowest milk production (158 kg) was observed in the 101-150 category.

The low production level of the population is mainly caused by nutritional deficiencies and animal health problems, and it is different if we calculate the quantity of milk and sold milk to the number of all does, or only milked does. The average proportion of does milked was 61.2% over all categories. On average more than 80% of produced milk was sold, thus slightly more than 200 kg/doe. However, its ratio changed by category.

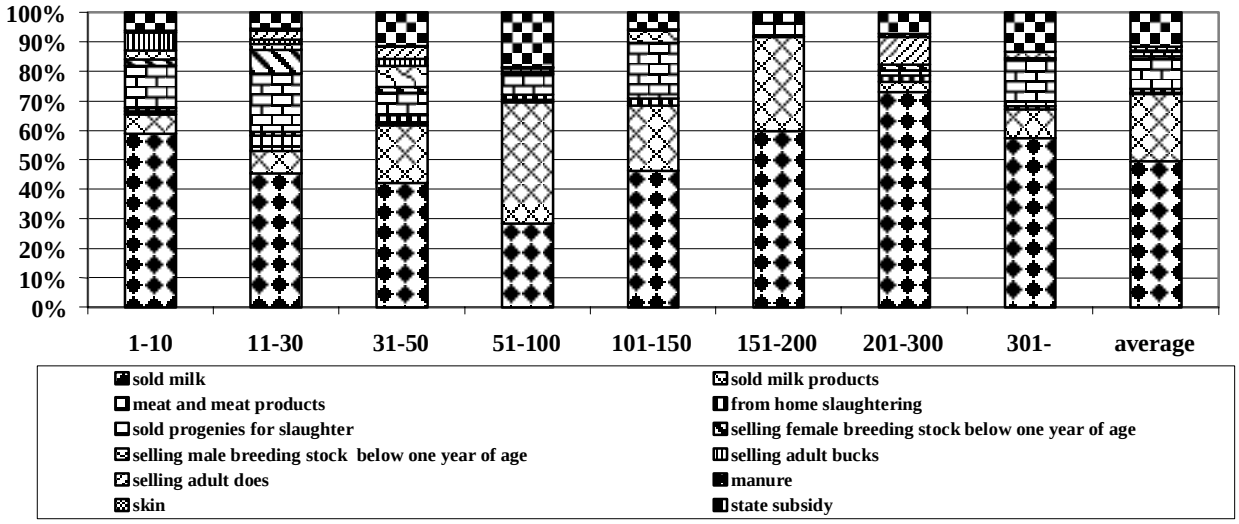

Figure 2 Distribution of different income sources according to herd size

Income from meat and meat products represented a very low proportion of the total income. Animals for slaughter were mostly sold as live animals. Selling of these products was the highest in the 11-30 category (4-5%). Proportion of milk (+milk products) and meat (goats for slaughter and meat) was 80:20, taken as ratios of total product sold. Litter size was lower in all categories than the reproduction ability of each goat breed. The average kidding percentage was slightly above 150%. Prolificacy decreased by farm-size (from 193 – to 114%).

Sold offspring as an income source indicates the proportion of money from selling kids for slaughter. It was 20% in the 11-30, 19% in the 101-150 and 14% in the >300 categories. Income from selling young breeding animals was found to be very low. It was the highest (around 10%) in the 11-30 and 31-50 categories. Selling bucks and adult does was more typical for the smaller farms. However, income for sold does was the highest in the 201-300 category (10%).

The proportion of farms receiving state subsidies differed widely between categories. A total average of *ca.* 70% of the farms got normative (1500 HUF/does above 6 months of age) or other state subsidies. On average, state subsidies represented about 11% of the total income. This rate shows the low repaying and income conditions of the sector.

A minimum herd size is needed for covering fixed and variable expenses. Income is increased by the number of productive animals which ensures the covering of expenses, but only to a certain herd size. In the smallest category the positive balance (8 000 HUF/goat) turned to a negative balance in the next category (Fig. 3.). The average balance became positive again (6 000 HUF/goat) in the 51-100 category. The balance increased in the subsequent categories reaching the highest in the 151-200 (26 000 HUF/goat) category, then decreased again to 2 000 HUF/goat.

Conclusions

Productivity was primarily influenced by milk production and prolificacy of does. Both of these, milk yield (264 kg) and kidding rate (152%) were considerably below the abilities of the breeds. As a

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consequence, the expenses increased significantly above income/goat as the herd size increased. According to the available data, goat keeping and production are profitable activities, but increasing prolificacy and milk quantity are factors determining profitability. The calculated profitability is supported by the low level of labour costs given by the goat farmers.

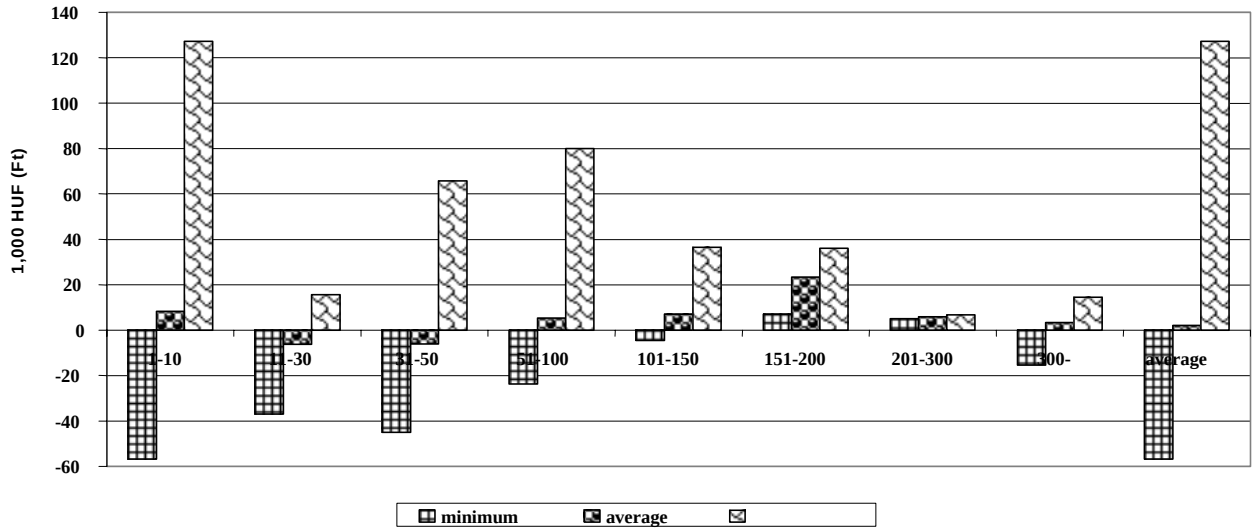

Figure 3 The income / cost balance according to herd size

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