

ECONOMIC RESULTS IN PRODUCTION OF GOAT AND KID MEAT

Z. Rajić¹, M. Žujović², Z. Tomić²

²Institute for Animal Husbandry, 11080, Belgrade-Zemun, Republic of Serbia

¹Faculty of Agriculture, Nemanjina 6, 11080, Zemun, Republic of Serbia

Corresponding author: zorajic@agrif.bg.ac.rs

Original scientific paper

Abstract: Serbia has no program of long term development of goat breeding, which makes it impossible for potential breeders interested in this production to invest more. Also, goat breeding usually is integrated with sheep breeding although there are significant differences in production technology. Breeders often start with only few heads in order to avoid risks which can occur as consequence of selection of bad location for the breeding facilities, its lack of functionality, requirements of animals, i.e. lack of compliance with conditions and mistakes which often result from attempt to breed high yielding animals. Different rearing systems determine the amount of expenses and income. In order to avoid losses in production it is necessary to adjust the rearing system to specific conditions, and than with constant improvement of the organization of work to reduce the costs because in modern business conditions profit can be realized only if costs are reduced, and not by increase of price of product.

Key words: goat breeding, breeding systems, economical result

Introduction

Situation on the market of agricultural products leaves space for increase of production of goat and kid meat, especially meat produced in ecological conditions. Consumption of goat and kid meat is still very low in Serbia. Acceptance of this meat is under direct influence of religion, tradition, culture, customs and consumer habits. In Serbia and in surrounding countries certain over presence of goat milk and goat milk products and satiety of consumers is noticeable. Therefore, investments into production of goat and kid meat can be profitable since necessary investment is low (for example, saving on milking equipment, main herd is smaller, labour, etc.).

Materials and Methods

Assessment of economical efficiency of production of goats and kids in different production systems was carried out for the farm of capacity of 60 goats. In the structure of flock there are 108 kids at the age of up to 2 months, 14 heads of breeding progeny/offspring (2 to 8 months) and 2 male goats. Stated number of heads ensures satisfying of main requirements of a household without hiring of additional labour. For composition of diet norms are used according to *Obračević (1990)*, which are still considered most suitable for our conditions.

Analysis of budget for goat production is based on market prices of kids and number of kids per goat. From the economical aspect it is important to realize the highest possible profit with lowest investment (*Žujović et al., 2008*). Producer must know the production costs for each product, threshold of profitability, effect of decisions of cash flow, positive and negative effects of additional investments. In order to realize this goal, it is necessary to monitor and record business activities in all production phases which includes calculations for the purpose of establishing of production costs and cost of product, establishing of cost of performing of production services (most often mechanization lease and transport), establishing of optimal structure, volume and intensity of production, establishing of the amount of investment and its economical efficiency, establishing of optimal scope of utilization of production capacities, establishing of top limits for input prices and bottom prices for output products and establishing of the amount of income (*Jakovčević, 2008*). Profitability of the production of goat and kid meat depends on the combination of the production volume, quality, size and stability of the market.

Results and Discussion

First step in assessment of economical results was to make calculations as review of the amount of expenses and income. In the structure of calculation production results and expenses are presented expressed in quantity nad value. For making of such calculation it is necessary to know basic technological requirements and on that basis to assess objectively expected expenses (necessary input, cost of mechanization, labour, etc.) and production results. Simple, quick and most often used way to determine economical indicators of agricultural production individually and in total is model of calculation where variable costs are covered (*Gogić, 2009*). In the structure of income, all income realized by sale of products or other income (subsidies, etc.) are included. Amount of income depends on the quantity of product and price.

Main prerequisites of profitable production from the technological aspect are:

- Quality of main flock,
- Focus on own production of livestock food,
- Following of technological procedures,
- Own labour.

From the economical aspect, direct sale of product or organized production with as few possible middle persons or intermediaries is important.

Economical goat breeding requires keeping of records according to the plan and program of breeding and conditions of breeding. Progress in breeding, kidding, nutrition and control of health requires introduction of nutrition/feeding procedures which would influence the increase of number of kids for sale and their body mass at the annual level. Regardless of the rearing system, profitability and economical efficiency are mostly influenced by nutrition, especially before mating and during gravidity, rearing system and flock size. More goats would in current conditions cause problems relating to provision of food, financial means and placement/marketing of final products. Comparison of economical results realized on farms of different capacity (for example 60 and 100 heads), considering necessary financial means and potential production value, would not be purposeful. Namely, in such conditions, production value would increase linearly (number of animals x mass x price + value of by products), but costs, especially fixed ones, would determine the ultimate financial result.

How the building/facility is constructed and used material enable the expansion of facility and capacity. Farm of this capacity should dispose with basic agricultural mechanization (tractor, grass mower, hay collector and tractor trailer). For rearing of more animals it would be necessary to expend the mechanization, especially with equipment necessary for preparation of livestock food.

Goats satisfy most of their nutritional needs by consuming voluminous, forage food. In order to realize wanted production results, it is necessary to provide well prepared and high quality food. Land surface available is often limiting factor when forming the flock (Table 1).

Table 1. Necessary land surfaces for production of livestock food (ha)

	Rearing system		
	Stable	Stable-pasture	Pasture
Barley	2.52	2.52	2.22
Oats	1.80	1.34	2.25
Wheat	0.88	0.06	0.13
Corn	0.85	5.12	0.06
Hay	8.25	11.60	18.15
Total	14.30	20.64	22.81

Share of the cost of nutrition in total costs/expenses is the highest, except in first years because of high amount of depreciation and interest rates (Table 2).

Table 2. Total annual nutrition costs in production of goats and offspring in stable system of rearing (RSD)

	Total annual needs	Price of feed RSD/kg	Total annual expenses
Industrial concentrate	130	30.00	3.900,00
Barley	6300	10.00	63.000,00
Oats	4500	8.00	36.000,00
Wheat	2200	10.00	22.000,00
Corn	3400	8.00	27.200,00
Bone meal	460	9.00	4.140,00
Salt	270	12.00	3.240,00
Hay	660	5.00	3.300,00
Total			162.780,00

Depending on the applied methodology of diet composition it is possible to reduce their amount and make the realization of profit in the first several years probable (*Malešević and Vranković, 2007*).

Expenses of health care, main recording and selection of goats are estimated to be 30% of nutrition expenses, i.e. 48.834,00, 14.4588,00 and 11.6805,00 RSD (services of agriculture specialist and veterinarian).

Water expenses are determined based on evaluated needs per head (5 l/animal daily) and amount to approx. 25.000,00 RSD. Lower quantities of water are also used for maintenance of hygiene and preparation for milking.

Estimated expenses for electric energy are 5500 kW/h – 24.000,00 RSD.

Based on experience of maintenance, these expenses are estimated to be 5% of the nutrition expenses, i.e. 8.140,00, 24100,00 and 19.470,00 RSD.

Labour expenses are not present since this number of animals can be serviced by family members (average household in Serbia has 2 to 3 members who are capable to work). It is possible to burden this production with labour expenses if we were to calculate average gross salary in Serbia which is approx. 45.000,00 RSD.

Estimated value of the building and equipment is approx. 16.000,00 RSD per animal in stable and stable-pasture system, i.e. approx. 13.000,00 RSD for pasture system.

The best results are realized in stable system which is expected considering the intensity of production (table 3). Stable-pasture system and pasture system in the first year generate losses except if there is support provided by the competent

authority/ministry. In realization of technological norms in goat production it is possible to achieve high economical results.

Table 3. Financial result in different rearing systems (RSD)

	Rearing system		
	Stable	Stable-pasture	Pasture
Value of production	2.058.120,00	1.723.840,00	1.121.400,00
Incentives	904.980,00	950.580,00	904.180,00
TOTAL	2.963.100,00	2.674.420,00	2.025.580,00
Expenses			
nutrition	162.780,00	481.960,00	389.350,00
Health care, main recording, selection	48.834,00	114.588,00	116.805,00
Water and energy	49.000,00	49.000,00	49.000,00
Maintenance	8.140,00	24.100,00	19.470,00
Depreciation	289.510,00	289.510,00	263.660,00
Interest rate	894.316,00	894.316,00	784.101,00
TOTAL	1.452.580,00	1.853.474,00	1.622.386,00
Financial result	1.510.520,00	820.946,00	403.194,00

In regard to security of the production, possibility for favourable credits as investment into buildings, equipment and animals, supported by the government and state institutions, is important. Subsidies and incentives which can be obtained from the competent authority are not minor or to be neglected and in the first years of business they can become very stable support to producers. Incentives for preservation and sustainable utilization of genetic resources of domestic animals "Official journal RS 12/08" for registered producers with minimum 20 heads of Balkan goat breed are 3.000,00 RSD/per head. Compensation/subsidy for high quality breeding livestock and selection of queen bees "Official journal RS 09/08", for high quality goats (primiparous or multiparous) is 2.500,00 RSD + 2.500,00 RSD for high quality male breeding goats. Beside these incentives, there are also premiums for milk, compensated animal insurance fees/premiums, incentives for procurement of main flock, for purchasing of input material, purchasing of agricultural equipment and mechanization. When purchasing equipment for improvement of organization and efficiency of livestock production and preparation of livestock food (bale machine, milking equipment, feeders, drinkers), 20% of the cost for all regions, and 30% of the total cost in case of marginal regions, purchasing of lacto freezers (100-2000 litres) - 20 and 25%, respectively. If producer enters the program of subsidized credits then total amount of incentive and reimbursement can be 904.980,00 (stable system), 950.580,00 (stable-pasture system), and 904.180,00 RSD (pasture system), which greatly contributes to the success of business (Table 3).

Conclusion

Because of the lack of program of long term development of the goat production the faster development of this production is not possible. Number of agricultural households specializing in this production by far is not sufficient to satisfy the demand of the market. Although the consumption of goat and kid meat in Serbia is still very low, situation on the market leaves room for increase of production of kid and goat meat, especially meat produced in ecological conditions. Production of goat and kid meat can be profitable since the investment is very low compared to production of goat milk (for example saving on the milking equipment, fewer animals in main flock, number of workers, etc.). level of intensity of production has the greatest effect on production results, so in combination of exceptionally higher production value and lower production costs, stable system, with certain adjustments to production conditions, has the advantage over other rearing systems.

Ekonomski rezultat proizvodnje kozjeg i jarećeg mesa

Z. Rajić, M. Žujović, Z. Tomić

Rezime

Ocena ekonomske efektivnosti proizvodnje koza i jaradi različitih sistema gajenja urađena je za farmu kapaciteta 60 koza. Analiza budžeta kozarske proizvodnje bazirana je na tržišnim cenama jaradi i broju jaradi po grlu. Profitabilnost proizvodnje kozjeg i jarećeg mesa zavisi od kombinacije obima proizvodnje, kvaliteta, veličine i stabilnosti tržišta, a prvi korak u oceni ekonomskih rezultata bila je izrada kalkulacija kao pregleda visine troškova i prihoda. Za potrebe obezbeđenja hrane neophodno je raspolagati sa 14,30-22,82 ha u zavisnosti od sistema gajenja. Farma ovog kapaciteta treba da raspolaze sa osnovnom, kod nas uobičajenom, poljoprivrednom mehanizacijom (traktor, kosačica, sakupljač sena i traktorska prikolica). Pozitivan finansijski rezultat ostvaruje se u sva tri sistema gajenja, ali jedino stajski sistem to obezbeđuje u prvoj godini bez podsticajnih sredstava.

References

GOGIĆ P. (2009): Teorija troškova sa kalkulacijama. Poljoprivredni fakultet, Zemun.

JAKOVČEVIĆ K. (2008): Upravljanje troškovima. Ekonomski fakultet, Subotica.

MALEŠEVIĆ, Đ., VRANKOVIĆ, M. (2007): Poslovna analiza. Ekonomski fakultet, Subotica.

OBRAČEVIĆ Č. (1990): Tablice hranljive vrednosti stočnih hraniva i normativi u ishrani preživara. Naučna knjiga, Beograd.

ŽUJOVIĆ M., TOMIĆ Z., RUŽIĆ-MUSLIĆ D., NEŠIĆ Z. (2008): Inovirana postojeća tehnološka rešenja u kozarskoj proizvodnji. Institut za stočarstvo, Beograd-Zemun.

Received 31 May 2009; accepted for publication 15 August 2009