NEW POSSIBILITIES TO IMPROVE THE USE OF PLANT RESOURCES IN SHEEP FEED

PASCARIU LUCIAN*[1], TRICA ANA GINA[1], PETROMAN IOAN[1]
[1]Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara/ Management and Rural Toursim Faculty/ Timișoara
*Corresponding author's e-mail: pascariu.lucian@yahoo.com

Abstract: *In order to efficiently improve the plant resources used in sheep feed, measures are needed to improve pasture management, increase pasture sustainability without degrading environmental factors and combine the ecological, economic and management principles of sheep farming. Maintaining the sustainability of pasture involves the implementation of management strategies to reduce the pressure of grazing, by giving up group farrowing and implementing the system of staggered farrowing, the first hormonal stimulation of heat.*

Key words*: sheep, plant resources, sustainable management*

INTRODUCTION

Over time, changes have occurred in farm management that allow farm owners to use free nutrients, which are found in natural pastures and hayfields. Efficient management of these seasonal feed resources will reduce total costs, with an average production throughout [7, 11]. These managerial changes are: coordinating the accumulation of body mass with the maximum productivity of pastures; the use of breeds and hybrids that make the most of the vegetative mass on pastures; staggering calvings according to the evolution of the vegetative mass; stimulating lactation of sheep and increasing the amount of meat. The management of natural resources and the production of sheep will require the correlation of nutritional needs with natural processes through genetic engineering, for meat production. Genetic engineering can correlate the animal's needs with pasture productivity, as some breeds / hybrids accumulate body mass by ingesting plant mass from the pasture. If farmers want to obtain meat by grazing, they must improve their breed genetics by choosing early breeds to fatten on pasture with concentrated feed supplements.

The individual performance of sheep is dependent on both the amount of nutrients they ingest and the degree of parasitic infestation. The level of ingestion is determined by certain factors, related either to the animal (ingestion capacity) or to the green mass offered (quantity and quality).

Natural meadows, intended for the exploitation of young sheep for various productions, are improved by applying a complex of maintenance works (fine, harrowing, drainage, deforestation, overseeding) and fertilization [16]. Also, in order to obtain higher yields, grazing is organized in 4-5 day installments, on a plot, delimited between them with wire fences or natural fences. On each plot the lambs will have access to water and lumps of salt (daily consumption of 5g). For example, for fattening lambs on pasture, after weaning, the best and least parasitic plots are reserved (with increased green mass after mowing), due to the fact that when the availability of quality grass is diminished, or the parasitic level is high, the speed lamb growth is diminished [1].

MATERIALS AND METHODS

Inifying the efficient use of pastures and maintaining their sustainability in the conditions of Caraş-Severin County, involves proposing strategies for managing genetic material used depending on production specialization, intensifying reproduction in sheep by hormonal methods, grazing management and management of grazing systems depending on the sustainability of the meadows, their floristic composition and last but not

least on the risk management of environmental factors. Analyzing the factors that can improve the efficiency of grazing, through this scientific approach we propose to implement managerial measures implemented in farms with extensive or semi-intensive production systems, to contribute to: improving grazing systems by reducing pressure on the carpet; maintaining the sustainability of grasslands; implementation of the best grazing management system and intensification of reproduction in sheep by giving up group farrowing.

RESEARCH RESULTS

The large number of sheep grazing on a certain soil above the accessibility limit affects the floristic composition of the meadow and the amount of vegetative mass, decreasing the amount of available plant resource and the sustainability of the meadow, having negative effects on environmental factors.

At the same time, increasing the number of sheep above the optimal threshold induces both short-term and long-term effects. Thus, if the number of sheep is ascending to the optimal threshold, in the short term, the animal's productions will decrease significantly, because the intake of plant resources is below the limit, the expected biological performances cannot be achieved. In the long run, non-compliance with the optimal number of sheep can have direct effects on the individual performance of the animal and total annual production and can lead to a decrease in valuable plant species and the installation of inedible species.

The optimal growth rate of sheep herds and the increase of production per unit area, varies in time and space. For this reason, we introduced 400 sheep on a cultivated meadow, at the first grazing cycle (5 days), at a grass height of 10 cm and a quantity of green mass of 15000 kg / ha. A herd of this kind consumed 9 kg/ewe of green mass daily (400x9=3600 kg x 5 days= 18000 green mass/cycle). The consumption coefficient of the vegetation was variable, in this meadow, due to the load with inedible plants, this being 90%, in the case of the experienced cultivated meadow. Thus out of a total of 15,000 kg. green mass, only 13500 kg. consumable green mass (1500kg. mv. X 90% = 13500kg. mv. consumable). In order to calculate the optimal area of pasture per herd, the total amount of green mass required per herd in a grazing cycle is divided by the production of green mass in that cycle. In the case of our research, the optimal area per herd was: 1.33 ha. for 5 days of grazing. So the optimal number of sheep that grazed was 14-16 sheep / ha.

We find that the production of milk or meat obtained from sheep per unit area increases with the increase of the growth rate of the herds to the maximum value of tolerability after which it decreases, negatively influencing the efficiency of pasture exploitation. Relationships become even more complicated due to the variation in time and space of the amount of mass available for grazing. For these reasons, the optimal growth rate of the herd, the increase of production per unit area, varies in time and space. Extensive production systems, the managerial challenge in optimizing production involves a high degree of risk.

For these reasons, the grazing systems used in sheep lead to: changes in grazing intensities, reducing the pressure of grazing on plants in the vegetative stage allowing the accumulation of energy reserves. The increase of the grazing pressure on the vegetal resources leaves little chances of accumulation of energy sources. The nutritional value of the plants is the highest in the vegetative stage and the implementation of the best grazing system will bring maximum long-term benefits for the sheep farm by increasing the total production.

Managing the optimal operating system for meat or milk by using heterosis, to increase production in favorable areas with sufficient plant resources can bring great

economic benefits to farmers. However, if food resources are reduced quantitatively and especially qualitatively, regardless of the operating system, extensive or semi-intensive, heterosis and risk, associated with non-adaptation to environmental conditions, tend to be higher than when there are large food resources. Crossbreeding as a technology in the extensive breeding of the Țurcană breed in Caraş-Severin County, just like any other technology, requires:

- implementation of the crossing system on the farm / farm;
- it depends on the management of reproduction and growth and exploitation.

The use of rams of specialized breeds for milk or meat production will allow producers to correctly associate genetic resources with the operating environment and the quality of production obtained with consumer expectations. Farming systems, the type of hybrid obtained by crossbreeding, give producers of meat and milk products obtained from sheep processing: great flexibility in quickly adapting the farm to the changing requirements of the market and the possibility of rapid production change according to consumer requirements.

In order for a grazing system to be efficient, we consider that it must explicitly: (figure 1)

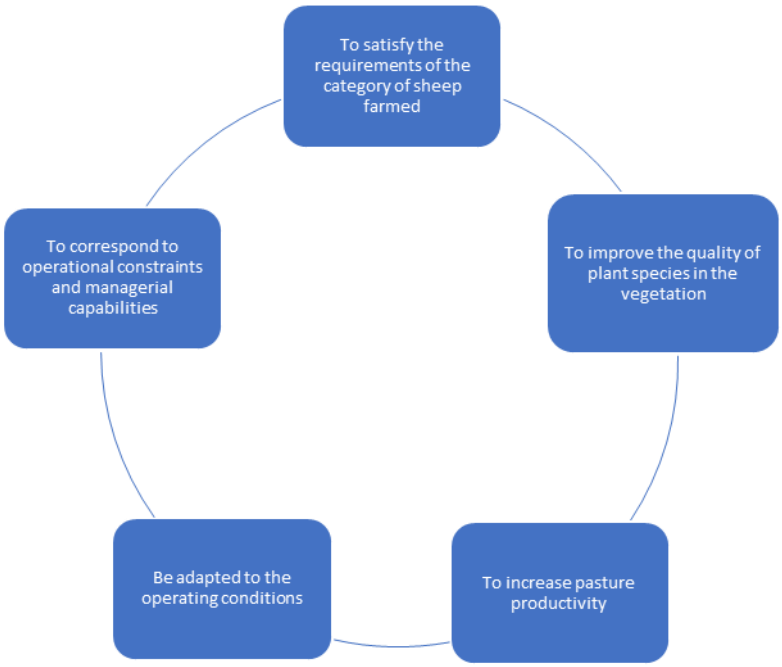

Figure 1. Requirements for the most efficient grazing system for sheep

Cras sem arcu, mollis vitae efficitur vitae, vestibulum nec lectus. Ut non massa diam. Nunc rhoncus id libero in aliquet. Vestibulum sed neque quis enim mattis pretium. Fusce lobortis in turpis eu congue (figure 1) Fencing the pasture facilitates the management of the pasture, the profits obtained being high by obtaining increased quantities of meat or milk per unit area. Alternative managerial interventions can achieve goals usually assigned to grazing systems. We propose to improve the management of sheep grazing: fencing and parceling of pasture, planting shade curtains, drinking points,the placement of lumps of salt for licking, the formation of uniform productive herds, the optimal distribution of herds, the development of economically viable tactics on the use of pasture and last but not least, implementation of the most efficient environmental management.

Reduction of grazing pressure on the vegetation mat can also be done by improving the management of reproduction in sheep by changing the period of calving, hormonally stimulating the entry into heat for a longer period of time, giving up group calvings when exploitation is done for milk production and weaning lambs is done at age 70 days and they are sacrificed at low weights. We propose a new production system with staggered calvings by hormonal stimulation of the heat entry of sheep and the constant supply of mutton to the market not only during the Easter holidays, an alternative that will have beneficial effects on the carpet, by rotating the soil and increased possibilities to restore the plant mass by reducing the pressure on the pasture. Production system managers can choose to market their young sheep by competitively setting prices, when they have special characteristics of meat. The profit obtained may vary depending on: (figure 2.)

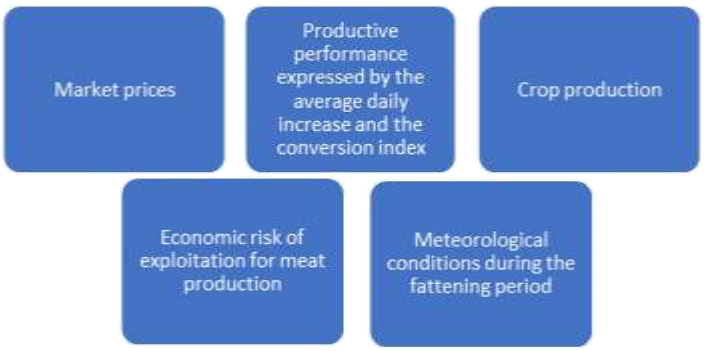

Figure 2. Profit optimization based on several factors

In risk management, the variation of profit caused by the exploitation system can be reduced, but the reduction of risks does not fully correspond to the increase of profit, the risk management being able to ensure the long-term economic sustainability of sheep exploitation systems.

For the sustainability of the operation we propose the following risk management strategies: conservative scaling of production systems for meat production, choice of feed resources and ration balancing, implementation of measures to improve meat production management, storage of feed for the period of preparation of seeds, gestation and suckling lambs.

An efficient management system in the management of plant resources and potential production is the nutritional balance with the growth processes of lambs, young sheep, fattening rams, sheep. Regardless of the purpose for which this system is practiced, genetic engineering correlates nutritional needs with the productivity of the natural environment. Some breeds or hybrids gain body weight by ingesting green mass from the pasture. If you want meat obtained in an extensive system, the breeds will be used with this feature. If fattening is done on large farms and with the production of quality carcasses, commercial hybrids will be used. Seasonal pasture productivity can help increase fattening efficiency and reduce the negative impact on the environment. Group farrowing ensures a good correlation between the nutritional requirements of the animals on the production cycle and the naturally produced fodder, but staggered farrowing ensures the continuity of production for a longer period. We believe that a management of feed distribution and costs can increase production and reduce total production costs, aligning production with natural processes involves the implementation of a farm management, affordable for any production system and type of farm, it must aim:

- useful the use of specialized breeds and hybrids for the expected production;

- to givehigh ptability of genetic material to exploitation systems;
- itimitation of cereal consumption in the production of sheep products;
- explowing plant resources without degrading the natural environment;
- reducing the use of antibiotics.

The adoption and implementation of these good farm management practices can reduce the degree of infestation and the cost of purchasing medicines. The movement on pasture produces quality meat at low cost and the animals are healthier. Increasing pasture areas, crop rotation encourages physical exercise and produces healthy animals. From these methods we recommend that sheep farms integrate their desired production to the advantages of this type of integrated farms: integrated management allows farmers to substitute their inputs, integrated production allows farmers to adds value to products distributed on the market.

Although research conducted by specialists in integrated farms, focused only on the management of sheep farm resources, we conclude that integrated management can have positive effects on the pastoral landscape of Caraş, by preserving unaltered flora and reducing invasive plant species in natural meadows and meadows existing in the area of sheep farms and ranches. Improving pasture and rotation management can reduce pasture area. Integrated grazing and feeding systems, the use of fertilizers to improve crop production and the nutritional quality of green mass, pastures can be grown with other crops, and hayfields can be transformed into natural habitats, helping to rehabilitate the natural environment.

CONCLUSIONS

The efficient use of the pasture and the maintenance of its sustainability implies the implementation of management strategies depending on the specialization of the production, the grazing systems and the floristic composition of the meadow taking into account the risk factors. Increasing the number of animals above the accessibility limit, has negative effects on the floristic composition of the pasture and the amount of vegetative mass with effects on its durability, well managed grazing systems causing changes in grazing intensities and reducing grazing pressure on plants in the vegetative stage, allowing accumulation of energy reserves.

By increasing the grazing pressure, fewer energy sources accumulate on the plant resources. The implementation by the managers of the production systems of the best grazing system, brings long-term benefits for the sheep farm by increasing the total production obtained, the breeders being able to sell young sheep at competitive prices, by reducing risks and ensuring long-term economic sustainability. . Reducing the grazing pressure on the vegetation mat can also be done by giving up group farrowing and implementing the system of staggered farrowing by hormonal stimulation of heat, ensuring a constant market with sheep meat, an alternative that will have beneficial effects on rebuilding the mat by rotating. Sole.

In order to maintain sustainability, risk management strategies will need to include the most efficient production systems, provide the necessary feed for the true value of the dowry and use the best farm management.

Integrated management allows farmers to substitute their inputs and add value to products distributed on the market. Although the integrated management of integrated sheep farms, generally concerns only the management of farm resources, we believe that it can have positive effects on the agro-pastoral landscape of Caraş, by maintaining the unaltered forest composition and reducing invasive species on natural meadows and meadows.

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