

MANAGEMENT MODELS TO IMPROVE SHEEP MEAT PRODUCTION

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Abstract: *Satisfying the needs of the sheep meat market requires the implementation in professional farms of farm management models, through which plant resources are used at optimal parameters and good practices of sheep exploitation in the most efficient production systems. The management models implemented in professional sheep farms must contribute to reducing the exploitation impact on the natural environment, using the most effective methods of controlling the consumption of plant mass, through new types of grazing, intensively managed, through the control of rotational grazing or using fodder alternatives for balancing fodder rations. The practices of sustainable management of plant resources can reduce the effects of overgrazing, effectively using alternative fodder and sheep hybrids with a high degree of adaptability to supplement the rations, which achieve large increases in growth during the exploitation period.*

Key words: *sheep, management, models, meat*

INTRODUCTION

Professional sheep farms, to be efficient, it is necessary to stimulate production and produce enough quantities of raw materials for the market, to implement the best production management through which to use at optimal parameters:

- existing resources in the farm area; [8]
- good practices regarding exploitation;
- the natural environment without environmental risk; [10]
- to use small amounts of concentrates to obtain raw materials from sheep meat and milk. [21]

The exploitation of sheep in different production systems, classic or alternative, must contribute through the farm management implemented according to the degree of production intensity, to the minimization of the degree of environmental pollution, through the most effective methods of controlling the consumption of plant mass, through new types of grazing, intensively managed, through control of grazing rotation or using coarse alternative fodder or from processing industries, to balance feed rations. [1, 5, 7]

The practices related to alternative exploitation systems, through sustainable management of fodder resources from meadows, can reduce the effects of overgrazing on the natural environment, effectively using alternative fodder to supplement rations, [12] sheep with a high degree of adaptability to exploitation in different systems, conversion indices good food, large increases in growth are achieved because economic effects of exploitation can be obtained on:

- areas near specialized farms for meat production;
- environmental factors by reducing restoration costs; [2, 4]
- biodiversity and floristic composition of meadows;

Due to the high degree of sheep adaptability to the classic and alternative meat production systems, by implementing new management measures production can be increased and adapted according to the requirements of the processing industry and the needs of consumers on the meat market because they:

- uses rationally resources; [9, 11, 15]
- have rusticity and resistance to the environment; [16]

- they have good conversion rates for roughage; [17]
- shows high profitability in exploitation for meat in farms with intensive technologies; [13, 14]

The intensive production of sheep meat can have, if it is not well managed, a negative impact on the natural environment and local communities, if the integronic management of the production of professional farms, it does not have integrated environmental and total quality management in its composition and only aims to obtain competitive productions, depending on the needs of the market, without involvement in:

- protecting the natural environment; [6, 20]
- rational use of resources;
- the use of microorganisms that promote fermentation in the nutrition of meat sheep; [18, 19]
- sustainable development of the areas near the farms;
- the diversification of farm activities and the practice of agritourism;
- the socio-economic development of human communities. [3, 17]

MATERIALS AND METHODS

The provision of meat and sheep meat products to the local and regional market requires finding quick solutions to improve the integronic management of professional farms, which also includes environmental risk management and the sustainable use of fodder resources, in order to preserve the biodiversity of ecosystems and sustainable development of areas near farms and human communities. The purpose of the research undertaken in the area under study was to analyze the existing situation, the objectives of the research aimed at finding new managerial solutions to adapt productions to the needs of the market, which implemented in farms, to contribute to the improvement of feed conversion indices, establishing the optimal balance between production efficiency and natural processes, the use of the best biological material for meat production, the integration of production on the meat chain. The research was carried out in Gorj County. Through the management system proposed for implementation, we developed modern technologies for efficient sheep meat production using the best exploitation practices on pasture in an alternative intensive system.

RESEARCH RESULTS

Obtaining sheep meat in conditions of economic efficiency requires the diversification of exploitation systems using alternative exploitation systems on pastures, but with environmental risks in terms of preserving the biodiversity of the natural environment. To reduce the phenomenon of environmental factors degradation through the exploitation of sheep for meat in this system, organizational measures are necessary, so that the impact is greatly reduced. The implementation of the best management according to the quality of the pasture requires management measures regarding the coordination of farm activities in such a way that the operation has the lowest negative impact on the environment through:

- optimization of the effectives according to the forecasted production;
- the availability of fodder resources to ensure the achievement of the planned growth increases;
- dividing the pasture according to the size of the herd;
- location of feeding places;
- ensuring the amount of drinking water;
- ensuring shade and rest places;
- measures to avoid soil compaction and trampling of the vegetative mass.

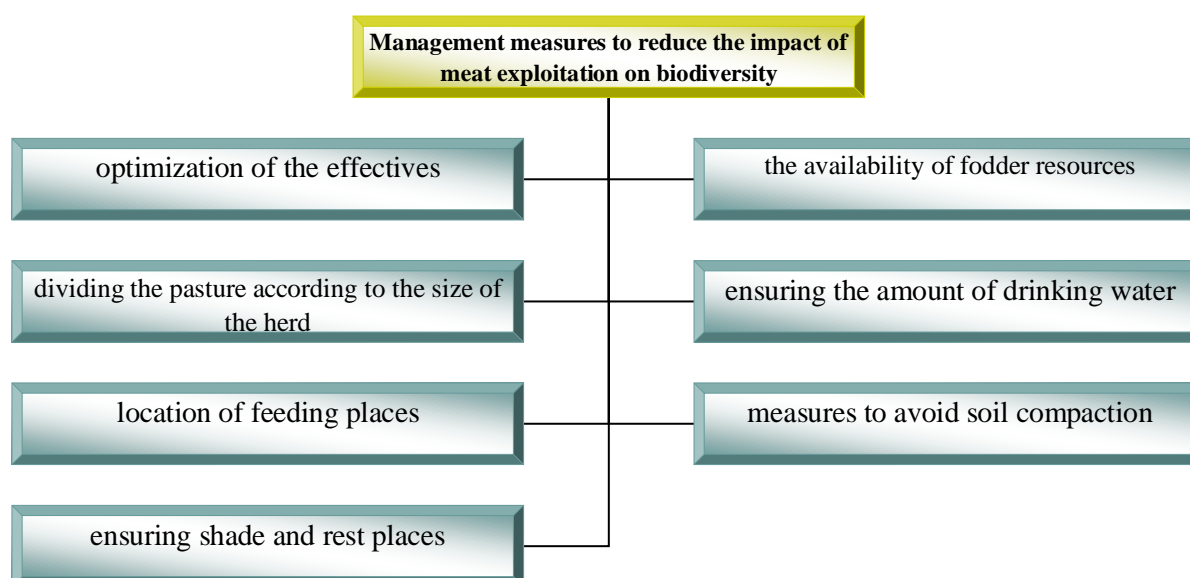


Figure 1. Management measures to reduce the impact of meat exploitation on biodiversity

Because the facilities required for exploitation in an alternative system for obtaining sheep meat cannot be carried out outside sensitive areas, the exploitation technologies must avoid the contact of fodder, water with manure, and biological filters are necessary for:

- maintaining good pasture hygiene;
- restoration of natural flow models;
- reconnecting the drains to recreate the natural hydrology.

The risk of pasture manure contaminating ground water quality and drainage varies, depending on the type of soil, the slope, the way the land is drained, the management of the meadow and the administration of supplementary fodder and human activities in the pasture area. For these reasons, we believe that locating the farm near the parceled pasture is the best way to preserve the quality of the environment. In this sense, we have developed a set of good management practices for the alternative sheep meat production system, which will reduce the possibilities of pasture and water quality degradation through the following solutions:

- fencing the pasture;
- parceling according to the quality of the pasture;
- optimization of herds according to productive potential;
- avoiding grazing near areas with possible pollution: emissions, water sources, canals;
- protecting plots with hedges, curtains or grassy canals;
- the use of mobile tanks for water supply and their periodic relocation;
- the rotation of additional feeding areas with concentrates during the finishing period;
- use of plot rotation;
- ensuring the optimal period for the natural recovery of the plant mass or through irrigation and fertilization;
- possibilities to move the sheep if the soil is wet, to avoid degradation;
- reducing all environmental risk factors.

For a good management of meadows use in this alternative production system for obtaining sheep meat, a set of managerial methods to control the production of meat in an alternative intensive system on pasture, with minimal effects on environmental risk

management is a necessity. By using these alternative methods of obtaining sheep meat will rationally use pasture resources by using:

- intensively managed grazing, on sown meadows, with the optimization of numbers depending on the recovery degree;
- grazing controlled by the rotation of the herd depending on the irrigation possibilities and restoration of the pasture.
- sustainable grazing through the protection of pasture and riparian areas.

Sustainable management practices in grazing methods are intended to reduce the effects of overgrazing and mismanagement of pasture and its resources and shall provide for the sheep meat production system:

- optimization of herds and surfaces per head of animal to avoid pasture degradation;
- establishing the nutrient intake of the vegetal carpet through analyzes of its nutritional value;
- balancing the fodder rations through the intake of concentrates up to the predicted productive potential;
- efficient use of the pasture depending on the vegetation stage of the plants;
- sheep health control and the degree of adaptation to exploitation in case of bad weather;
- monthly check of fattening results, weight gain conversion and increased weight gain.

Efficiently managed grazing, in the case of this production system, is effective only if the vegetal carpet has a high nutritional value (artificial meadows) and the appropriate size of the plants to achieve the predicted productions (average daily increase in body mass) and the presence of invasive species due to manure is at the minimum level.

Well-managed grazing on fenced plots can keep the vegetal carpet clean, free of invasive species by helping to:

- a. reducing the rate of decrease of soil moisture;
- b. control of the soil erosion phenomenon.

These practices used in the system of intensive production of sheep meat on pasture, of the best management system of the maintenance of the vegetation carpet, must have as goals an optimal number of sheep to be fattened on the pasture, the systematic control of the nutritional value of the pasture, avoiding overgrazing, combating environmental degradation, ensuring the possibility of rotating plots, irrigation and fertilization to restore the vegetation of the pasture.

The use of these managerial efficiency techniques of grazing systems can contribute in the farms where they are implemented to reduce the negative impact on the vegetal carpet and the optimal number of herds, the regeneration capacity of the vegetal mass of the pasture, related to the quantity and quality of water, can reduce the impact on environmental factors and maintaining pasture sustainability. To preserve a healthy environment and a good floristic diversity on the meadows, we propose for farmers:

- resource conservation strategies;
- the orientation of meat sheep that produce little manure;
- breeds and hybrids of sheep with high adaptability to intensive exploitation on pasture;
- sheep with good conversion indices of the vegetable mass on the pasture.

For medium and large professional farms that implement the alternative system of obtaining sheep meat on pasture, we recommend the following integrated management practices, to reduce the amount of manure and its concentration, and a code of good practices that can also be used in small fattening farms of sheep for meat if considering:

- prediction of obtaining meat;
- production control and efficiency indicators;
- collection of manure;
- environmental management;
- supportability degree;
- measures to protect water and soil as natural environmental factors.

The most effective and best managerial practices for environmental management in the farm and pasture area must take in consideration:

- management of waste from fattening sheep;
- reducing the amount of waste water;
- avoiding their evacuation in emissaries;
- preventing the loss of nutrients from the soil;
- control of the volume of organic matter in the soil composition;
- management of nutrition, watering on the pasture;
- increasing individual productions and reducing herds by increasing the areas intended per head of animal.

CONCLUSIONS

The management of meat production must impose measures to reduce the impact of sheep exploitation for the production of meat on pasture, on the environment and plant food resources. The managerial measures will provide possibilities of dividing the pastures for efficient use for obtaining meat and the places for feeding, watering and rest, will be changed periodically to restore the vegetal carpet and avoid soil compaction. Arrangements carried out in the intensive meat production system on pasture cannot be carried out outside areas sensitive to environmental pollution, management techniques must avoid contact with feed, water and manure, and the use of biological filters is necessary. For the constant assurance of the sheep meat market, those managerial measures must be implemented in the sheep meat production farms to use plant resources at optimal parameters, without major impact on the environmental factors through the intensification of production.

The good practices of sheep exploitation on pastures, in an alternative system, must contribute to the constant assurance of the processing industry and the market with sheep meat and contribute to the reduction of the soil, water and air pollution degree, using the most effective methods of grazing control, through modern, intensively managed grazing methods, through rotation, for the efficient management of plant resources. The practices of sustainable management of grazing can reduce the effects of overgrazing, effectively using alternative fodder to complement the rations, biological material with good conversion rates adapted to intensive exploitation on pasture and which produces less manure.

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