

## IMPROVING THE MANAGEMENT OF SHEEP MEAT PRODUCTION

CSIZMADIA ANDREA ȘTEFANA<sup>1</sup>, ARMAȘ ANA GINA<sup>2</sup>, PETROMAN CORNELIA\*<sup>1</sup>

<sup>1</sup>*Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania", Faculty of Management and Rural Tourism, Timisoara*

<sup>2</sup>*Research and Development Station for sheep and goat breeding Caransebes*

\*Corresponding author's e-mail: c\_petroman@yahoo.com

### **Abstract**

*The constant assurance of the market with sheep meat requires the implementation in farms of managerial measures through which to use at optimal parameters the vegetal resources, without major impact on the environmental factors by intensifying the production. Good practices for grazing sheep on pasture for meat production should contribute to reducing the degree of pollution of water, soil and air quality, using the most effective methods of controlling the consumption of plant mass, through new types of grazing, intensively managed, by rotational control for the efficient management of plant resources or by using alternative fodder to balance feed rations. Sustainable practices of pasture management can reduce the effects of overgrazing, efficiently using alternative feeds to supplement rations, using highly adaptable sheep hybrids, good feed conversion rates, which increase growth and produce smaller quantities of manure. Sustainable management of resources in the areas near the pasture has economic effects on the areas, by reducing the costs of restoring environmental factors, maintaining specific floristic biodiversity and avoiding the penetration of invasive species with major effects on the value of vegetative mass.*

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

### **INTRODUCTION**

The sheep species has a high degree of adaptability, to any exploitation system, the exploitation efficiency being able to be improved by managerial measures because: [1,2,8,9,15]

- capitalizes rationally the pastures and especially those with a poorer floristic composition;
- convert fodder well into meat and milk from secondary resources;
- their exploitation is suitable for the rational combination with other zootechnical, vegetal and alimentary branches, contributing to the efficient capitalization of the fodder resources;
- present a high profitability, especially in the farms with intensive technologies, which have implemented an efficient farm management. [3,7,11,13]

The production obtained from sheep in intensive pasture systems, has an impact on the natural environment but to reduce the impact on the environment managerial measures are required in the integrated management of meat production, but also special environmental risk measures to protect it and sustainable development of areas in the vicinity of farms and human communities. [4,6,10,14]

Good assimilation of feed by sheep farmed on pastures helps to reduce cereal cultivation area. In addition to the savings achieved by the administration of fodder with a high degree of digestibility and reduction of areas cultivated with cereals and pastures, this system reduces the amount of manure, with beneficial effects on the natural environment. The elaboration and implementation of environmental management measures within the integrated management of meat production must remain the main objective to regulate regardless of the production system, the optimal size of farms according to existing land areas and river basin capacities, technologies, garbage management and manure use standards. [5,12,16]

## MATERIAL AND METHOD

The constant supply of meat and sheep meat products involves finding solutions to improve integrated production management, including environmental risk management and the sustainable use of resources to preserve the biodiversity of ecosystems. The aim of the research was to find managerial solutions that can be implemented in professional sheep farms, aiming at the following objectives: increasing feed conversion rates, establishing the optimal balance between production efficiency and natural processes on pasture, the use of hybrids meat suitable for the production system, the integration of the production obtained for the efficient exploitation of meat sheep. The researches were carried out on cross-breeds of Turcana sheep with meat breeds using modern methods regarding the location of farms, in order to avoid pollution by degrading environmental factors, soil, air, water. Because in the pasture exploitation the pollution sources are the areas of watering, resting, location of concentrated fodder, in order to reduce the soil compaction and the pollution of the groundwater, we have taken organizational measures so that the impact on the environment is as low as possible. In the case of this scientific approach, we aim to develop best practices for pasture exploitation for meat production with real chances of implementation for any holding.

## RESEARCH RESULTS

Because pasture exploitation also has risks in terms of the natural environment, in order to reduce source pollution, we have taken organizational measures so that the impact on the environment is as small as possible. We proposed that the organization of the activity on the farm be done in such a way as to exploit the pasture so that the negative impact on the environment is minimized through the managerial measures taken:

- the pasture must be parceled out and fenced;
- location of feeding places away from water sources;
- water places will be located at resting places;
- the drinkers will move periodically to avoid pollution with waste and compaction of vegetative mass and soil.

Because the arrangements from the pasture cannot be carried out outside areas sensitive to environmental pollution, the techniques used must avoid contact with feed, water and manure, in this sense being necessary to use biological filters:

- restoring natural flow patterns;
- reconnection of drainage channels for recreation of natural hydrology.

The risk of manure from sheep grazing on pasture contaminates groundwater and runoff quality varies, depending on:

- the type of soil and its slope;
- land drainage;
- manage production management;
- human activities in the pasture area.

For these reasons, we consider that the proper location of the farm is the best way to maintain the quality of the environment, which led us to develop a set of good practices for the exploitation of sheep for meat on pasture, to reduce water quality degradation:

- fencing and parceling the pasture depending on pasture creditworthiness and herd size;
- avoiding grazing near drainage areas or water sources, outfalls;
- protection of plots with protective curtains;
- use of mobile drinking sources;
- rotation of additional feed management sites to balance rations and achieve planned increases;

- the use of rotation at grazing the plots, in order to restore the vegetal mass and to avoid the soil compaction;
- moving sheep during rains, on plots with permeable soils;
- management of environmental protection, regarding environmental factors soil, water.

The proposed managerial methods of grazing control will aim to avoid the negative impact on the environment being necessary for the exploitation of sheep on pasture for meat:

- ❖ intensively managed grazing;
- ❖ rotation controlled grazing, for the efficient use of pasture resources.

Sustainable grazing management practices are intended to reduce the effects of overgrazing through the efficient use of resources:

- use of additional feed to achieve the planned increases;
- efficient use of pasture resources;
- the use of biological material adapted to pasture exploitation and which has higher rates of conversion of pasture plant resources;
- the efficient use of the vegetal carpet without its degradation, by using and balancing the herds according to the value of the vegetal carpet.

Efficiently managed grazing can be organized only if the vegetation has a high value and size corresponding to the established productions, and the presence of invasive species due to manure is reduced.

Well-managed grazing on fenced pastures can keep the vegetation carpet untouched by invasive species by helping to reduce the rate of water reduction in the soil, while maintaining control of soil erosion. These best practices for maintaining the carpet must take into account:

- optimal number of sheep per pasture depending on its vegetative value;
- to avoid overgrazing;
- to combat the degradation of the vegetal mass by trampling;
- to have possibilities of rotation of the pasture for the restoration of the vegetal mass;
- possibilities of irrigation or fertilization of the grazing pasture for recovery.

The use of these techniques of managerial efficiency of grazing systems can contribute to reducing the negative impact on the vegetation and the optimal number of herds, the regeneration capacity of the vegetation mass of the pasture, related to the quantity and quality of water, can reduce the impact on environmental factors. pasture sustainability.

Well-managed grazing on fenced pastures can keep the vegetation carpet untouched by invasive species by helping to reduce the rate of water reduction in the soil, while maintaining control of soil erosion. These best practices for maintaining the carpet must take into account:

- optimal number of sheep per pasture depending on its vegetative value;
- to avoid overgrazing;
- to combat the degradation of the vegetal mass by trampling;
- to exist rotation possibilities of the grazing for the restoration of the vegetal mass;
- possibilities of irrigation or fertilization of the grazing pasture for recovery.

The use of these techniques of managerial efficiency of grazing systems can contribute to reducing the negative impact on the vegetation and the optimal number of herds, the regeneration capacity of the vegetation mass of the pasture, related to the quantity and quality of water, can reduce the impact on environmental factors and pasture sustainability.

In order to preserve a suitable natural environment, farmers are required to:

- ✓ resource conservation strategies;
- ✓ orientation towards the exploitation of meat sheep that produce less manure;
- ✓ sheep with a high capacity for conversion of pasture feed.

For sheep farms which use for meat production the pasture, using meat hybrids, we propose the following management practices to reduce the volume and concentration of manure, a code of good practice with possibilities of use taking into account:

- ✚ the forecast for obtaining meat in the sheep farm;
- ✚ how to collect manure;
- ✚ the management of the area from the vicinity of the farm;
- ✚ the degree of pasture tolerability for manure as fertilizer;
- ✚ measures to protect natural environmental factors, water and soil.

Best managerial practices in environmental protection in the areas of farms and pastures should take into account:

- reducing the amount of wastewater;
- avoiding their evacuation in emissaries;
- prevention of over-drainage and loss of soil nutrients;
- control of the volume of organic matter in the soil composition;
- the use of dense plant species for the composition of pastures and near drainage areas;
- watering, feeding, shading areas with the possibility of moving;
- sufficient areas depending on the number of animals expected to be fattened on the meat pasture.

## CONCLUSIONS

The organization of the activity on the farm must be done in such a way as to exploit the pasture for the production of sheep meat, so that the negative impact on the environment to be kept to a minimum. The management measures taken must ensure that pastures are parceled out and fenced and that resting, feeding and watering places can be rotated periodically to avoid compaction and pollution of soil and water sources. Because landscaping on landscaped pastures cannot be carried out outside areas sensitive to environmental pollution, the managerial techniques used must avoid contact of feed, water and manure in this regard, requiring the use of biological filters to restore natural flow patterns; and reconnection of drainage channels for recreation of natural hydrology

In order to ensure the constant market of sheep meat, it's obligatory to implement managerial measures in fattening farms through which to use all optimal parameters the vegetal resources without major or important impact on environmental factors by intensifying production. Good pasture farming practices should contribute to reducing the pollution of water, pollution of soil and increasing air quality, using the most modern and efficient grazing control methods, intensively managed, controlled or rotating types of grazing are proposed for the efficient management of plant resources and the use of alternative fodder to balance rations. The practices of sustainable grazing management can reduce the effects of overgrazing, using efficiently in addition to rations alternative fodder, biological material with a high degree of adaptability to this operating system, with high conversion rates and producing lower amounts of manure.

Sustainable management of all resources in the areas near the pasture has a important economic effects on the areas, by reducing the costs of restoring environmental factors, maintaining specific floristic biodiversity and avoiding the penetration of invasive species with major effects on the value of vegetative mass.

## BIBLIOGRAPHY

- [1]. **ALKASS JE, AL-AZZAWI WAR, AL-TAYY HM**, 2009, Milk Production in Awassi Sheep and their Crosses with Assaf under Accelerated Lambing System, *Journal of Zankoy Sulaimani*, 12(1), 7-12.
- [2]. **JACOB R., CALNAN H.**, 2018, Improving Lamb Lean Meat Yield: A Tehnical Guide formthe Australian Lamb and Sheep Meat Industry. North Sydney: Mean and Livestock Australia.
- [3]. **MATHIS C.P, ROSS T.**, 2017 *Sheep Production and Management*. Las Cruces, NM: New Mexico State University.
- [4]. **MONTOSSI F., FONT-I-FURNOLS M., DEL CAMPO M., SAN JULIÁN R., BRITO G., SAÑUDO C.**, 2013, Sustainable Sheep Production and Consumer Preference Trends: Compatibilities, Contradictions, And Unresolved Dilemmas. *Meat Science*, 95, 772-789.
- [5]. **MANOLE V.**, 2012, Product chains obtained from sheep in Romania. *Annales Universitatis Apulensis Series Oeconomica* 14 (2), 63-75.
- [6]. **NEAGU IULIANA, CONSTANTIN C., PETROMAN CORNELIA**, 2002, *Zootehnie Generală*, Editura Mirton, Timișoara.
- [7]. **NEAGU IULIANA, CULEA C., PETROMAN I.**, 2007, *Creșterea animalelor*, Editura Eurostampa, Timișoara.
- [8]. **NEAGU IULIANA, CULEA C., PETROMAN CORNELIA**, 2002, *Zootehnie generală*, Editura Mirton, Timișoara.
- [9]. **NICOLAE M., PETROMAN CORNELIA**, 1999, Nutrețurile, valoare nutritivă, sortimente, controlul sanitar-veterinar, Editura Agris – Redacția Revistelor Agricole.
- [10]. **NICOLAE M., PETROMAN CORNELIA**, 1999, Nutrețurile, valoare nutritivă, sortimente, controlul sanitar-veterinar, Editura Agris – Redacția Revistelor Agricole.
- [11]. **PĂDEANU I.**, 2003, Technical evaluation and genetic improvement of sheep production, Mirton Publishing House, Timișoara.
- [12]. **PETROMAN I.** (2007) – Managementul sistemelor de creștere și exploatare a animalelor, Editura Eurostampa Timișoara;
- [13]. **PETROMAN I., CULEA C.**, 1998, *Sisteme de creștere a animalelor*, Editura Mirton Timișoara.
- [14]. **TRICĂ ANA GINA, PETROMAN I., PETROMAN CORNELIA, TĂRTĂREANU MIHAELA, SAUER MARIA**, 2018, Study on meat/milk productive performances in Romanian Ratka sheep unde extensive production, *Lucrări științifice Management Agricol, seria I, Vol.20(1)*.
- [15]. **TRICĂ ANA GINA, PETROMAN I., IOSIM IASMINA, PETROMAN I., FIRU A., MARIN DIANA**, 2017, Proposal for some improvement measures of obtainig meats management at ovine species, *Journal of Biotechnology*, vol.256, Supplement, S74.
- [16]. **TĂRTĂREANU MIHAELA, TRICĂ ANA GINA, PETROMAN CORNELIA, PETROMAN I., SAUER MARIA**, 2018, Prenatal reproduction efficiency in F1 Lacaune x Țurcană crossbred primiparous dairy sheep, *Lucrări Științifice Management Agricol, seria I, Vol. 20(1)*.