

MULTIFUNCTIONAL UTILIZATION OF PASTURES IN ROMANIA

VALOAREA MULTIFUNCȚIONALĂ A PAJIȘTILOR DIN ROMÂNIA

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Romanian pastures are characterized by a multitude of functions that may be used for human benefit: food and habitat for animals, development of some connected activities (collection and processing of apicultural products, medicinal plants, etc.), natural reservoir providing biodiversity for more than 70% of the plant species (the preservation of this may assure an important germplasm fund for the next cultivars), the most efficient method of soil protection against erosion, provider of unconventional energy, accomplishment of efficient biological cycles of nitrogen, phosphorus, potassium and carbon dioxide (CO₂), development of landscape tourism due to the plant and animal diversity that ennoble and beautify the environment. If only 60% of the permanent pasture area was used, with the application of minimal technological measures, it would provide the necessary food for at least 1.6 million cattle (57% of the current livestock) and 12 million sheep and goats.

Keywords: pastures, erosion, productivity, biological nitrogen, melliferous structure

Introduction

The natural (permanent) pasture area belongs to the group of natural resources with utilization potential, and, due to its land dimension (almost five million hectares) represents 21% of the Romanian surface, placing us among the first positions in Europe.

Unfortunately, for many of our fellow countrymen, this big and important natural resource is too little known. Moreover, it is considered just a land covered with all kinds of undesired plants (weeds), of no importance, where some cow or sheep herds graze from time to time.

This sad and ill-judged situation determines us present, by technical and scientific means, the real quantifiable dimensions of the permanent pastures, the natural patrimony of the country, which could guarantee, beside other resources, the agricultural future of Romania, if these pastures would be rationally assessed and used.

Materials and Methods

The results presented in this work rely on a series of studies, observations and determinations performed during more than three decades of pratical researches in our country. They make evident, in synthesis, the quantifiable dimensions of the pasture potential in our country, in concordance with the productivity and vegetation conditions of pastures.

Results and Discussion

Land covering with permanent vegetation represents the most efficient measure to prevent soil erosion. From this viewpoint, the vegetal cover of pastures provides a long-term protection, compared with the cultivated lands (especially under conditions of monocrops) (Table 1). So, all works of permanent pasture amelioration and improvement aim at the refreshment of the vegetal cover, which provides the increase of biomass, but also a long protection against the erosion phenomenon.

Table 1

Pasture – source of soil protection against erosion
(Time period for the removal of a soil stratum, in the depth of 10-20 cm, as a result of erosion, on slopes)

| Method of cultivation | Period (years) |
|---|----------------|
| Lands cultivated with maize – monocrop | 10 |
| Lands cultivated in the rotation system | 80 |
| Lands covered with pastures | 30 000 |
| Wooded lands | 200 000 |

The diversity of plant species in the permanent pastures, of which more than 50% have a special melliferous value, may represent for our country a resource of great economic importance, used for the production and processing of apicultural products, like in other countries with similar natural conditions (Austria, Switzerland, France). So, if we speak about the maximal potential offered by the Romanian agricultural structure, the maximal annual honey amount would be 558 million kg, with an estimative value of almost 1.4 milliard euro (Table 2). In this quantity, the biggest percentage is represented by the permanent pasture areas (38%), followed by temporary or planted pastures (13%), forage legume crops (22%) and other crops (27%). Compared with this maximal potential, at the moment, Romania produces annually about 13 million kg honey, namely only 2.33% of this potential (Table 2).

Table 2

Pasture contribution to the melliferous balance in Romania (estimative data)¹⁾

| Specification | S (ha) mil | Estimated honey amount kg/ha/year | Total honey amount million kg/year (%) | Value million Euro/year |
|------------------------------------|------------|-----------------------------------|--|-------------------------|
| Permanent pastures | 3,0 | 70 | 210 (38%) | 525 |
| Temporary pastures | 0,6 | 120 | 72 (13%) | 180 |
| Forage legume (annual + perennial) | 0,9 | 140 | 126 (22%) | 315 |
| Other crops | 1,5 | 100 | 150 (27%) | 375 |
| MEAN – TOTAL | 6,0 | 107 | 558 (100%) | 1395 |

1 Current situation of the melliferous balance in Romania:

- Annual yield: 13 million kg (2.33% of the potential)
- Annual value: 24 million euro

The main economic feature of pastures is represented by their capacity of providing a big part of the animal food required. This represents the most efficient and agroecologic food resource for the achievement of animal-based products. The estimative data presented in Table 3 lead to the conclusion that the pasture area with potential of utilization (3.5 million hectares) may provide the food necessary for 1.6 million cattle and 12 million sheep and goats, respectively for 57% of the current cattle livestock and 129% of sheep. If this resource was used at the maximal capacity, the estimative value of animal-based productions (meat, milk) would be more than two million euro yearly.

Table 3

Estimative efficiency of permanent pasture areas
(under extensive conditions of utilization for animals¹⁾)

| Livestock (Maximal capacity) | | Potential yields | | |
|-------------------------------|-------------|------------------|--|------------------------|
| Category | Individuals | Structure | Estimative amount (thousand tons/year) | Value (mil. euro/year) |
| Cattle ²⁾ | 1.600.000 | Meat | 885 | 1.300 |
| Sheep and goats ²⁾ | 12.000.000 | Milk | 2.500 | 800 |

¹⁾Usable area: 3.5 mil. ha

²⁾National livestock situation (1 January 2008)

- Cattle: 2.8 million individuals (of which only 20% are bred in hilly and mountain areas)
- Sheep and goats: 9.3 million individuals (of which about 50% are bred in hilly and mountain areas)

Conclusions

Romanian pastures represent an important natural source for the country economy, under conditions of an efficient utilization of their multifunctional structure;

Pasture contribution to the increase of the melliferous balance would be about 558 thousand tons annually, respectively 1.4 milliard euro;

The permanent pasture area could yearly provide the forage necessary for at least 57% of the current cattle livestock and 129% of sheep.

References

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