Economic Efficiency in Cultivation of Perrenial Grassland Leguminous for Seed Production

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Abstract. To study economic efficiency in the cultivation of perennial grassland leguminous for seed production in spring 2005 we have initiated studies regarding the optimization of technological factors (fertilization, planting distance between rows, sowing norm, sowing time, harvest time, how to prepare the bed germinative) to Medicago sativa Satellite variety, Trifolium pratense Select 1 variety, Onobrychis vicifolia Splendid variety and Lotus corniculatus Alina variety, experiments were seeded in three repetitions with harvested plot size of 10m square.

Data from the process charts for the years of study (2005 and 2006) were those obtained using optimal productions: hay in year 1 and year 2 of cutting, straw production and seed production for each species that were studied, but prices for materials and farming were those used in the usual practice in agriculture.

After laborious studies conducted field and laboratory as well as the calculations was obtained a greater economic efficiency if the species of vegetation cultivated for seed production was red clover and in the worst for trefoil in the first two years, but was obtained a good economic efficiency in case of lucerne and sainfoin cultivars.

Keywords: perennial grassland leguminous, seed, economical efficiency.

INTRODUCTION

Ensuring animal feed base is necessary to establish some important areas of seed lots for seed sown species in perennial forage grassland, seed lots that will provide seeds for the establishment of forage crop. While seed lots of perennial leguminous grassland are an important source of nectar and pollen for beekeeping, bees are an important pollinator and the main factor of maximizing yields production of perennial leguminous seeds.

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MATERIALS AND METHODS

Four species of perennial grassland leguminous were taken in the study namely Medicago sativa Satelit variety, Trifolium pratense Select 1 variety, Onobrychis vicifolia Splendid variety and Lotus corniculatus Alina variety. These species were discussed in terms of time of sowing trials (spring, autumn), different ways of preparing the germination bed, the optimization of technological elements (planting distance between rows, seeding rate and fertilization rule) and how to install the nodules after emergence. First cut to harvest before blooming and second cut for seed when 85% of seeds were maturated using reaper Wintersteiger. In the field was weighed to sew a green table at the first cut, average samples
were taken which were analyzed in the laboratory. Data from the process charts for the years of study (2005 and 2006) were those obtained using optimal productions: hay in year 1 and year 2 of cutting, straw production and seed production for each species that were studied, but prices for materials and farming were those used in the usual practice in agriculture.

The results of analysis were processed by modern methods of calculation.

RESULTS AND DISCUSSION

The research took place at USAMV Cluj Field Jucu a clay mold poorly supplied in phosphorus, well supplied in potassium situated on the small meadow of Small Somes river at 297 m altitude, experimental years (2005 and 2006) were years with average seed production favorability.

In the first year of growth seed was obtained only for red clover, at the other species were obtained only hay (Tab. 1)

Tab. 1

Seed production, hay and straw of hay obtained from perennial grassland leguminous studied in first year of vegetation, USAMV Cluj, 2005

<table>
<thead>
<tr>
<th>Specia</th>
<th>Seed (kg/ha)</th>
<th>Hay (kg/ha)</th>
<th>Straw hay (kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red clover</td>
<td>100</td>
<td>-</td>
<td>3700</td>
</tr>
<tr>
<td>Lucerne</td>
<td>-</td>
<td>4200</td>
<td>-</td>
</tr>
<tr>
<td>Sanfoin</td>
<td>-</td>
<td>4000</td>
<td>-</td>
</tr>
<tr>
<td>Loti</td>
<td>-</td>
<td>4100</td>
<td>-</td>
</tr>
</tbody>
</table>

In the second year of vegetation the largest production growth was achieved from sanfoin seed and in the production of hay, red clover has recorded maximum production at first cut, the quantities of straw of hay that have been recorded were similar for the studied species. (Fig. 1).

Fig. 1. Seed production, hay (first cut) and straw of hay obtained from perennial grassland leguminous studied in the second year of vegetation, USAMV Cluj, 2006
Considering economic efficiency recorded in the first year of vegetation the seed for perennial grassland leguminous of is found to obtain maximum profit/unit from red clover, the largest annual profit from loti and lucerne and the best profit rate for specie loti (Fig. 2).

![Fig. 2 Economic efficiency recorded in the first year of vegetation in four species for seed of perennial grassland leguminous USAMV Cluj, 2005](image)

In the year two of the vegetation, the leguminos studied recorded an maximum / unit profit, the largest annual profit and the best rate of return for red clover, and the worst economic efficiency was obtained for the specie loti (Fig. 3).

![Fig. 3. Economic efficiency recorded in the second year of vegetation in four species for seed of perennial grassland leguminous USAMV Cluj, 2006](image)
Considering the total annual profit recorded in the two years of vegetation for the perennial grassland leguminous that has been studied, red clover is the specie that obtain the highest economic efficiency and the lowest annual profit is achieved for sainfoin and loti (Fig. 4).

CONCLUSIONS

1. In the first year of growth seed was obtained only for red clover, at the other species were obtained only hay.

2. In the second year of vegetation the largest production growth was achieved from sainfoin seed and in the production of hay, red clover has recorded maximum production at first cut ,the quantities of straw of hay that have been recorded were similar for the studied species.

3. Considering economic efficiency recorded in the first year of vegetation the seed for perennial grassland leguminous of is found to obtain maximum profit/unit from red clover, the largest annual profit from loti and lucerne and the best profit rate for variety loti.

4. In the year two of the vegetation, the leguminos studied recorded an maximum/unit profit ,the largest annual profit and the best rate of return for red clover, and the worst economic efficiency was obtained for the specie loti.

5. Considering the total annual profit recorded in the two years of vegetation for the perennial grassland leguminous that has been studied, red clover is the specie that obtain the highest economic efficiency and the lowest annual profit is achieved for the species sainfoin and loti.

REFERENCES