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ANALYSIS OF FODDER PLANTS FROM A VEGETAL FARM FOR INCREASING THE RENTABILITY

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Abstract

Following the research executed in a vegetal farm, the analysis of several types of plants assortments (sunflower, autumn barley, corn and wheat), with regards to the agricultural technologies applied, as well as their economic impact, with the purpose of determining improvement measures regarding structure of cultures and economic-financial performances within future years. The yields per unit area were determined by the varieties and hybrids used in each crop, by the applied crop technology, by the quality of the agricultural work carried out and by the pedological and climatic conditions. The average yield on crops was as follows: 3,500 kg/ha for wheat, 5,000 kg/ha for winter barley, 2,500 kg/ha for sunflower, 6,000 kg/ha for maize. The total crop yield was conditioned by the production capacity per unit area and cultivated area. Thus, total crop yields were as follows: 2,975 t wheat, 750 t barley, 1,375 t sunflower, 600 t corn. The obtained products were fully utilized on the market, with the exception of wheat. Of the total production of 2,975 t of wheat, 950 t were allocated to the landowners in the company, each providing an in-kind rent of 500 kg of wheat per hectare. Therefore, only 2,025 t of wheat became the commodity production, meaning 68.06% of the total production obtained in this crop.

Key words*: assortment, technology, fodder plants.*

INTRODUCTION

Feed technology develops the main elements of technology in maintaining the permanent and temporary meadows, for the cultivation of annual and perennial fodder plants, and helping to provide sufficient quantities of good quality feed (Ignat, 2000).

Regarding from a viewpoint of economic structure in the rural area, agricultural actions maintain generally the majority of land, agriculture being considered consequently as the mainstay of the rural economy.

The rural area is, from an occupational standpoint, prevalently a manufacture surface, where the activities of the primary districts hold a fairly high value on the economic ladder.

The agricultural-victual fields (field culture, grass plots, vegetable farming, viticulture, fruit plantations, animal breeding, forestry and exploit) requires understanding that (and with future comprehension too) a plot of 0.5-10 ha is enough for a family just to support itself, by traditional agricultural methods, albeit not enough to ensure that the entire population is fed (Ionel, 2003).

The matter can be explained by improper technical endowment, decreased efficiency per ha, and the ineptitude of the management.

MATERIALS AND METHODS

The seed represents the base of the growth of the harvest. The efficiency of all technological links that apply in vegetal production depend on the quality of the variety or the hybrid with which it is worked (Onisie and Jităreanu, 2000).

There are the varieties and hybrids used:

- for wheat cultivation the varieties were used: Crina, Alex, Dropia;
- for corn cultivation the hybrids were used: Florencia, Furio, Raissa;
- for fall barley cultivation the varieties were used: Madalin, Orizont, Precoce, Productiv;
- for sunflower cultivation hybrids were used: Favorit, Festiv, Rigasol, Performer;
- for sowing wheat the seed was treated with Vitavax 200 in a dose of 2 1/t per seed.

After canola cultivation, sowing the wheat was done at the beginning of October, and after

corn and sunflower the study was continued until the second round of 10 days of October.
The used density was of 500 kg/m^2 resulting quantity of seed used 230-260 kg/ha according to the indices of quality of the seed.
In spring after the snow melted the fertilization with ammonium nitrate worked started.
The combat against the weeds started towards the end of April with the herbicide Mustang in doses of 0.5 l/ha.
The harvesting began halfway through June and it continued until the beginning of July due to small breaks for hoarding production and price fluctuations on the market.
The harvesters SEMA 110 existing in the unit as well as a borrowed CLAAS were used.

RESULTS AND DISCUSSIONS

In terms of profit per hectare, the most efficient crops are in order: autumn barley with 734.88 lei/ha, sunflower with 710.97 lei/ha, corn with 698.27 lei/ha and on the last place autumn wheat with 266.68 lei/ha.
Taking as a point of reference the profit per kilogram of production, the hierarchy of crops is the following: sunflower, barley, corn, and winter wheat.
Depending on the rate of profitability, first was barley, then corn, sunflower, and last place wheat.
In order to establish the crop hierarchy by several criteria reflecting profitability, namely: income per ha, profit per hectare, profit per kilogram, rate of profitability, there was used the point method. Thus, each culture was awarded a number of points based on the performance achieved by these criteria.
The average production was the following: 3,500 kg/ha wheat, 5,000 kg/ha fall barley, 2,500 kg/ha sunflower, 6,000 kg/ha corn. The total production obtained by cultivation has been conditioned by the yield in the unit of surface and cultivated surface. Thereby, the total productions were the following: 2,975 t wheat, 750 t barley, 1,375 sunflower, 600 t corn (Table 1, Figure 1, Figure 2).

Table 1. The average and total production

Production	Wheat	Barley	Sunflower	Corn
Average (kg/ha)	3,500	5,000	2,500	6,000
Total (t)	2,975	750	1,375	600

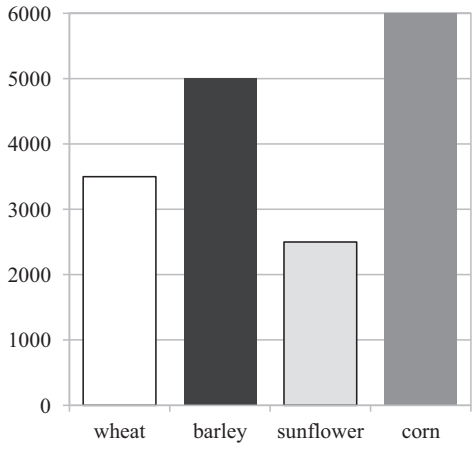

Figure 1. Average productions (kg/ha)

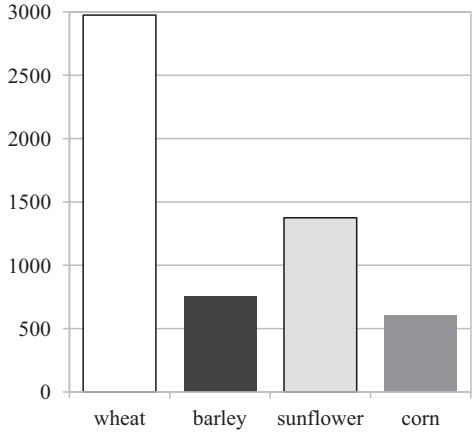

Figure 2. Total productions (t)

According to the hectare profit prism, the most efficient cultivations were in order: the fall barley with 734.88 lei/ha, sunflower with 710.97 lei/ha, corn with 698.27 lei/ha and fall wheat with 266.68 lei/ha (Figure 3).
The analysis of the total costs of production: For achieving the mentioned cultivations, the vegetal farm spent 585.21 thousand lei, total which was spent determined by the cultivation surface and cost of each hectare.
The percentage of each cultivation was: 47.84% wheat, 30.97% sunflower, 6.07% fall barley and 5.51% corn (Figure 4).

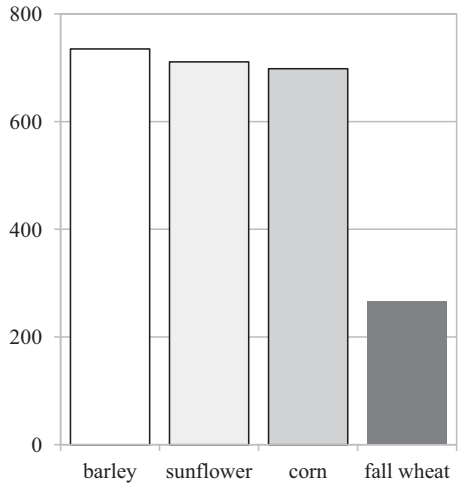

Figure 3. Profitability of the cultures

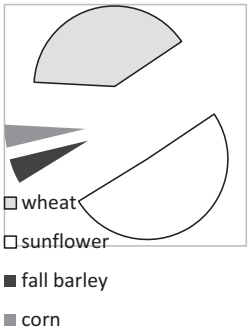

Figure 4. Total production costs

CONCLUSIONS

The analyzed vegetal farm has met the following difficulties in vegetal production:
- the aggressive climatic conditions, which affected the production and costs;
- the increased price of the material has an impact on the level of spending with mechanical work, lack of necessary diesel, even in the sowing company;
- increased price of fertilizers restricted the cultivators from applying the recommended doses of modern technology, with unwanted effect towards the performances in production and decreasing in fertilizing the soil;
- the absence of a price of acquisition guaranteed influenced the profit level, even though the cultivations were rentable, the increased offer on some products led to the decrease of the acquisition price on the market;
- the increased price of the pesticide and herbicide, of the chemical substances used against diseases and pests determined the farmers to use more reduced doses;
- due to the high rates on the credits by the bank the loans became unappealing and the financial resources of the economical agents in agriculture had to restrict to the profit which wasn't enough for the production.

Taking into account the economic aspects of using the cultural assortment and specific technology, this study lead to the conclusion that the farm must diversify its cultural structure:
- call upon varieties and well-performing hybrids, resistant to drought, illness and pests;
- sign farm contracts on prices bartered with the input providers;
- sign advantageous commercial contracts with the beneficiaries in order to have safe sales and profit.

Taking into consideration the economic efficiency on cultures, analyzed through the prism of income per hectare, profit per kilogram of product and return rate the hierarchy of the cultures was, in decreasing order: barley, sunflower, corn, wheat.

Taking this into account, in the future we must focus on a better strategy to settle culture structure by increasing the culture area for the plants that ensure a higher rentability.

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