PRESENTATION OF A PRIVATE FARM FROM THE LOCATION OF GELU, TIMIȘ COUNTY. CASE STUDY.

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Abstract. *The purpose of the paper is a case study of a private farm in the town of Gelu, Timiș county. The research was carried out in the period 2020-2021, and the objectives in mind were: identifying the type of soil on the 77 hectares studied, the situation of the crops and the productions obtained. The main crops were sunflower, wheat and corn and the soil was a typical weakly glazed chernozem. The situation differs from year to year. In 2020, 16 hectares were sown with sunflowers, 35 hectares with wheat and 26 hectares with maize and in 2021, 12 hectares with sunflowers, 36 hectares with wheat and 28 hectares with maize. The productions obtained were 2300 kg/ha for sunflower, 5500 kg/ha for wheat and 8000 kg/ha for corn in 2020 and in 2021, these productions were 2600 kg/ha for sunflower, 6000 kg/ha for wheat and 8500 kg/ha for maize. In wheat, the Alex variety and the Apaș variety were cultivated. In all three crops, the highest productions were obtained in 2021, this was due to more favorable climatic conditions in terms of the level of precipitation and its distribution throughout the vegetation period. The agricultural years 2020 and 2021 were the years in which very good results were obtained in terms of average productions for both autumn and spring crops.*

Keywords*: Gelu, private farm, soil, agricultural crops*

INTRODUCTION

The soil is a natural body with a series of constantly changing physical, chemical and biological properties, which constitute a support for the plant, a source of nutrients and an intermediary through which fertilizers and amendments are applied (DAVIDESCU D. and VELICICA DAVIDESCU, 1992; ROGOBETE GH., 1994; MIHUȚ CASIANA, RADULOV ISIDORA, 2012).

Through its natural evolution, the soil suffers a loss of nutrients down to minimal levels that tend to remain constant in a context of natural or anthropogenic factors (applied agropedo-ameliorative measures, irrigation, fertilization, etc.) (CANARACHE A., 1997; IANOȘ GH., PUȘCĂ I., GOIAN M., 1997; GOIAN M., 2000; GOIAN M., IANOȘ GH., RUSU I., 1993; OKROS, A., 2015).

ROGOBETE GH., 1994, states that "nothing can more surely destroy a complex system like the soil, a good functionality depends on numerous interactions, than the emphasis on a single relationship: cause-effect", that is, in the case of man, deforestation. for cultivating the land and obtaining the largest possible harvests (IANOȘ GH., PUȘCĂ I., GOIAN M., 1997; CREȚAN, REMUS, 2006; DAVID-FEIER, S., MATEOC-SÎRB, N., MATEOC, T., BACĂU, C., DUMA COPCEA, A., MIHUȚ, C., 2020).

Regarding the climatic conditions, the commune of Variaș is located in a region where several types of climates intertwine, such as: Mediterranean; temperate-continental and oceanic (RUSU RAUL ARIAN, 2007; ȚĂRĂU D. ȘI COLAB., 2007). The average annual temperature oscillates between -1°C in winter and 21.9°C in summer. The lowest recorded temperature was -19.2°C in winter and 12.6°C in summer and the highest, 5.1°C in winter and 37.8°C in summer.

Abundant precipitation and excess humidity prevent seasonal works from being carried out in good conditions and at the same time hinder the processes of germination and emergence, also favoring phytopathogenic attack. The lowest precipitation was in January 2020, respectively 18.1 mm (GHIBEDEA V., GRIGERESIK E., LUCIA BĂCANU, 1970; MIRCOV, V.

D., VUXANOVICI, S., COZMA, A., OKROS, A., PINTILIE, S., NICHITA, A. I., MOISESCU, C. I., 2016).

The average maximum monthly precipitation was 81.4 mm in August, and the minimum monthly precipitation was 31.1 mm in February. There were no months without precipitation.

MATERIAL AND METHODS

As material, we studied the soil resources of a privately owned farm in the town of Gelu, Timiș county. The objectives considered were: the identification of the type of soil on the 77 hectares studied, the situation of the crops and the productions obtained.

The main crops were those of sunflower, wheat and corn and the soil was identified following the trips made in the field as a typical poorly glazed chernozem that I presented in another paper. When describing the soils identified within the farm, we used both data collected from the field and data taken from OSPA Timișoara and from Gelu City Hall, Timiș County.

RESULTS AND DISCUSSIONS

The farm, where the studies were carried out, is located in the town of Gelu and has an area of 77 ha of land. The entire cultivated area being declared to APIA, in order to obtain subsidies.

The main crops established during 2020-2021 were:

- sunflower, 15 ha;
- wheat, 35 ha;
- corn, 26-27 ha.

During the two years, I applied the following fertilizers:

- Fertilization I: Complex 20:20:20 = 150 kg/ha;
- Second fertilization: Complex 15:15:15 = 150 kg/ha;
- III fertilization: Nitrolime (LAT) = 150 kg/ha.

The farm has the following agricultural equipment: Plows - two pieces; Discs – two pieces; Sowers - two pieces; Sweepers - one piece; Herbicide machine - one piece; Fertilizer spreader (MIC) – one piece; Trailers – five pieces; Combines - two pieces. As you can see, the farm has enough machines and agricultural equipment, so that it can be self-sufficient.

From the surface of 77 hectares of land, the situation is as follows:

In 2020, 16 hectares were sown with sunflowers, 35 hectares with wheat and 26 hectares with corn (table 1.).

Table 1.

Land surface, by crops in 2020

Culture	Surface	
	Ha	%
Sunflower	16	20,77
Wheat	35	45,45
Maize	26	33,76
TOTAL	77	100

In 2021, out of the total area of 77 hectares, 12 hectares were sown with sunflowers, 36 hectares with wheat and 28 hectares with corn (table 2.).

Table 2.

Land surface, by crops in 2021

Culture	Surface	
	Ha	%
Sunflower	12	15,58
Wheat	36	46,75
Maize	28	36,36
TOTAL	77	100

The productions obtained, in the two years, are presented in table 3.

Table 3.

The productions obtained

Culture	Productions		Average years
	2020	2021	2020-2021
Sunflower	2300	2600	2450
Wheat	5500	6000	5750
Maize	8000	8500	8250

For wheat, the Alex variety was cultivated on 20 ha and the Apaș variety on 15, respectively 16 ha.

The productions obtained during the two years of research were as follows:

In 2020, for sunflower, a total production of 2300 kg/ha was obtained, while in 2021, it was 2600 kg/ha, with a difference of 300 kg/ha.

In wheat, a production of 5500 kg/ha was obtained in 2020 and 6000 kg/ha in 2021, with a difference of 500 kg/ha.

In maize, very good yields were obtained, i.e. 8000 kg/ha in 2020 and respectively 8500 kg/ha in 2021, with a difference of 500 kg/ha.

CONCLUSIONS

The farm has a total area of 77 ha of land, own property. The entire cultivated area being declared to APIA, in order to obtain subsidies.

During the period suitable for agricultural crops, almost 80% of the precipitation falls, which is a favorable condition for the development of local crops. However, the precipitation regime has an irregular character, with years much wetter than average and years with very little precipitation. Due to its position in the open field, but located not too far from the Carpathian massifs and the main valleys that separate them in this part of the country (the Timiş-Cerna corridor, the Mures valley, etc.), Timișoara bears, from the north -west and west, a movement of air masses slightly different from the general air circulation over the western part of Romania. The local channels of the air circulation and the unstable balances between the baric centers impose a great variability of the frequency of the winds in the main directions.

Within the farm, following field trips, two types of soils were identified, namely: typical chernozem and solonets

The main crops established during 2020-2021 were: sunflower, 15 ha; wheat, 35 ha; corn, 26-27 ha.

In the course of one year, three fertilizations were carried out with: Complex 20:20:20, in a dose of 150 kg/ha, the first fertilization; Complex 15:15:15, 150 kg/ha, 2nd fertilization and with Nitrolime (LAT), 150 kg/ha, 3rd fertilization.

During the two years of studies, the situation is as follows:

In 2020, 16 hectares were sown with sunflowers, 35 hectares with wheat and 26 hectares with corn.

In 2021, out of the total area of 77 hectares, 12 hectares were sown with sunflowers, 36 hectares with wheat and 28 hectares with corn.

The productions obtained were different from one year to another, as follows: in 2020, for sunflower, 2300 kg/ha was obtained and in 2021, 2600 kg/ha, with a difference of 300 kg/ha.

In wheat, a production of 5500 kg/ha was obtained in 2020 and 6000 kg/ha in 2021, with a difference of 500 kg/ha and in corn, 8000 hkg/ha were obtained in 2020, respectively 8500 kg/ha in 2021, with a difference of 500 kg/ha.

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