EVALUATION OF THE ECOPEDOLOGICAL CONDITIONS ON THE PERIOD OF THE AGRICULTURAL EXPLOITATION SC LANUL SRL FOR THE STAKEHOLDING OF THE MEASURING MEASURES

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Abstract. *The present paper follows the study, the ecopedological conditions for identifying the necessary measures for improving the organization of the agricultural exploitation and the restoration of the soil fertility. The first part of the paper contains theoretical data regarding the studied theme (technological notions and physical and geographical conditions of the studied area, etc.) followed by data regarding the purpose and objectives of the work. In the last part are presented the results and the discussions of the research. In the study of agricultural exploitation, SC laurul SRL aims at increasing the soil productivity and improving the lethal factors of soil fertility*

Keywords: *fertility, soil improvement*

INTRODUCTION

For the increase of agricultural production, it is estimated that the main sources are: soils, fertilizers and water (Răuță și Carstea, 1980). Even in technologically advanced countries, crops are still below the potentially productive level. in Romania, it is appreciated 2-3 times higher than the current one.

Quite often, soils with adequate nutrient content can not express their productive potential because of other deficiencies (water excess, salinity, etc.) and therefore require urgent improvement work.

MATERIALS AND METHODS

SC The S.R.L. is a medium-sized enterprise whose main function is cereal production. It was founded in 1994.

At present, the farmer S.C. The S.R.L. the following crops were set up: wheat, maize, sunflower and rapeseed.

The headquarters of the enterprise is located in Arad county, Ghioroc commune, Cuvin locality, no. 14A. The total working area is about 730 ha, most of which is leased, being the property of the villagers who either do not have the appropriate means to work or do not have the necessary availability.

Generally, the products are sold immediately after they are harvested, however, for the lease, the products are stored in an Agricola hall on the outskirts of Cuvin.

On the perimeter of the holding surveyed, most soils are interpreted as eutricambisols, which is also in agreement with the Soil Map of Romania (1: 500,000). The following soil types have been identified: eutricambisols, pelosols and vertosols on more narrow surfaces.

The spring sowing season began with sunflower until April 19, seeding 130 hectares of sunflower.

Table 1

Areas cultivated on the perimeter of S.C. The S.R.L.

Nr crt	Crop	Surface (ha) 2015	Surface (ha) 2016
1	Wheat	200	150
2	Maize	250	300
3	Sunflower	130	**130**
4	Rapeseed	150	**150**
Total		730	**730**

Wheat culture technology
- ARROW: 20 cm
- Apply COMBINATOR
- Domestic seed class C1 220 kg / ha
- Autumn apply 200 kg / ha of DAP 18-46 complex fertilizer
- The spring is applied 250 kg / ha nitrogen-containing fertilizer 27-20 + Microelements

Wheat looks very good - strong, healthy green. In June all wheat is almost mushroom-free, just a little mold in some plots

Sunflower culture technology

For the 150 ha sunflower crop was taken in the autumn at 35 cm deep, and before the sowing, successive passes were performed with the sparrow harrow and the combine.

April was a month of sowing, sowing began in early April using the Pioneer P64 LE25 seed, 50,000 - 55,000 units / ha
- Application of nitrocalcium fertilizer 27% Nitrogen, 20% Calcium (For sowing)
- Application Basfolia / Liquid Nitrogen, 0.8 l / ha. (In vegetation)

Corn crop technology

On the 250 hectares for corn reed was carried out in the autumn to 35 cm deep, and before the sowing was made successive passes with the sparrow harrow and the combiner.

250 ha of maize was seeding on 19-23 April using the seed seed: Pioneer AQUAMAX P9911 (FAO 410), 60,000 - 65,000 units / ha

Application of nitrocalcium fertilizer 27% Nitrogen, 20% Calcium (For sowing)

Application Basfolia / Liquid nitrogen, 1 l / ha. (In vegetation)

Culture technology at rapeseed
- ARROW: 20 cm
- Application Disc harrow in X
- Combinator application
- Seed: KWS - Hybrirock - 120,000 pieces / ha
- Autumn: Applied 180 kg / ha of DAP 18-46 complex fertilizer
- Spring: Applied 200 kg / ha sulfur fertilizer, 25 MPPA

RESULTS AND DISCUSSIONS

On the perimeter of SC Lanul SRL, most of the soils are interpreted as eutricambisols followed by pelisols, which is also in agreement with the Soil Map of Romania (1: 500,000). The following soil types have been identified: eutricambisols, pelosols and vertosols on more narrow surfaces. In the case of eutricambisols, the soil reaction is slightly acidic between 0-100 cm, neutral between 100-120 cm, calcium carbonate content CaCO3 is absent between 0-150 cm, the humus reserve in the first 50 cm shows medium values, the nitrogen index IN) show mean values between 0-20 cm, small between 20-80 cm. In the case of the gleic pelosol the soil reaction is moderately acidic between 0-25 cm, slightly acidic between 25-57 cm, neutral between 57-86 cm, slightly alkaline between 86-200 cm, calcium carbonate content CaCO3 is absent between 0-86 cm, small between 86-200 cm, the humus reserve in the first 50 cm shows high values. Nitrogen indices have mean values between 0-11 cm, small to medium between 11-74 cm. The fertilization plan on the cultivated parcels was performed on the basis of the soil analyzes carried out in the laboratory and also on the basis of the specific consumption of the plants in kg / ha of the active substance recalculated in the fertilizer applied on the cultivated area In order to restore soil fertility, based on agrochemical analyzes performed on the farm, the following fertilizers were administered: complex fertilizer DAP 18-46, Basfoliar / liquid nitrogen, 0,8 l / ha, nitrocalcium fertilizer 27-20 + Microelements and fertilizer based sulfur, 25 MPPA Since some soil samples indicated low pH values, it was decided to calculate the field change requirement. Choosing the material to be fined is essential. Product availability and price are normally important criteria. Also the content of other minerals is important. Low pH has other negative effects on nutrient availability and root growth. Alteration with basic non-Mg basic mineral base minerals is expected to raise in the layer show the Ca2 + content leading to a more stable granular structure that is more crust resistant.

Table 2

Fertilization plan for maize and rapeseed agricultural year 2016/2017

Nr crt	Code	Surface (ha)	Crop	Fertilizers s.a. (kg/ha)		
				N	P_2O_2	K_2O
1	P 41-2	56.99	Maize	155	120	140
2	P 41-3	57.51	Rapeseed	133	140	112
3	P 41-2	35.48	Maize	178	133	163
4	P 41-3	72.11	Rapeseed	137	137	124
5	P 100	14.84	Rapeseed	103	98	135

Table 3

Fertilization plan for sun-flower agricultural year 2016/2017

Nr crt	Code	Surface (ha)	Crop	Fertilizers s.a. (kg/ha)		
				N	P_2O_2	K_2O
1	P 52	23.18	Sun-flower	54	77	62
2	P 53	22.31	Sun-flower	49	48	52
3	P 54	20.45	Sun-flower	58	82	114
4	P 56	21.29	Sun-flower	50	68	61
5	P 101	22.82	Sun-flower	55	79	60

On acidic soils the production capacity is increased by the addition of CaCO3. The effectiveness of the amendments depends on the content and type of neutralizing minerals and the fineness of the product. The finer the product is, the more effectively it dissolves and reacts in the soil. On soils without CaCO3 (<1%) Nitrocalcar was given 27% of nitrogen, 20% of calcium.

CONCLUSIONS

On the farm, low pH values indicate the need for correcting the reaction state and improving the other negative attributes that affect their production capacity, namely the insufficient supply of nutrients and the poor aerodynamic regime.

These negative effects of acidic soils reduce production capacity. Correcting them is done by neutralizing acidity and by completing the Ca and Mg reserve.

The effectiveness of the amendments depends on the content and type of neutralizing minerals and the fineness of the product. The finer the product is, the more effectively it dissolves and reacts in the soil. On non-CaCO3-containing soils (<1%) Nitrocalcar was given 27% of nitrogen, 20% of calcium.

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