SUITABILITY AND FAVORABILITY ARABLE LANDS FROM THE PERIMETER VINEYARDS MINIŞ-MĂDERAT, ARAD COUNTY AND FITNESS FOR MAJOR AGRICULTURAL CROPS

PRETABILITATEA ŞI FAVORABILITATEA TERENURILOR AGRICOLE DIN PERIMETRUL PODGORIEI MINIŞ-MĂDERAT, JUDEŢUL ARAD PENTRU PRINCIPALELE CULTURI ŞI FOLOSINŢE AGRICOLE

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***Abstract**: The researches that were made around vineyards Miniş-Măderat shows the capability of main soil types for different utilizations of lands and agricultural crops. They shows the evaluation marks for the four soil types, calculated after the physical and chemical properties who are being pedological studies in the last 10 years. Research conducted in the Miniş-Măderat vineyards highlights Suitability main soil types in various categories of land use and farmland. They play bonitary notes for the 6 soil types, calculated on the basis of physical features and chemical soil found in studies over the past 10 year*

***Rezumat:** Cercetările efectuate la nivelul localităţii Berzovia evidenţiază pretabilitatea principalelor tipuri de soluri la diverse categorii de folosinţă ale terenurilor şi culturi agricole. Ele redau notele de bonitare pentru cele 6 tipuri de soluri, calculate pe baza unor însuşiri fizice şi chimice care se regăsesc în studiile pedologice efectuate în ultimii 10 ani.*

***Key words:** soil, capability, fertility class, indicators and coeficients of soil evaluation.*
***Cuvinte cheie**: sol, capacitate, clasa de fertilitate, indicatori şi coeficienţi de evaluare a solului*

INTRODUCTION

Production capacity shows the way of manifestation of all vegetation factors, Which act independently for the plants and determine the satisfaction level of Physiological needs of those in certain place and certain time. It refers to soil fertility (who is Determined by a series of properties of soil, such as: pH, the level of nutrient elements, go content etc..) And to the way of manifestation for the plants of the others environmental factors, beginning with the cosmically-atmospherically (light, heat, water), continuing with the geo-morphological factors and the Hydrological ones, having as effect the different productivity of human work reported to the way of Physiological needs satisfaction.

MATERIAL AND METHOD

To calculate the evaluation marks, who characterize each soil unit in the limited pedological study who were made in Caras Severin department, we made the most important characteristics, easy and certain measurable, who has been in pedological studies known as indicators of evaluation. Evaluation marks for each category of soils and crop utilization were made multiplicities with 100 the product of the coefficients (17 indicators), who participate directly to the calculus

$$Y = (X1 * X2 * ... ... x17) * 100$$

Were:

Y = evaluation mark;

X1 ... ... X17 = the value of the 17 indicators.

RESULTS AND DISCUSSION

For the use of grassland (Fig. 1 and Table 1) haplic chernozem got 81 points mold being located grade II fertility and vertosoil won 60 points are located in the fifth grade of fertility.

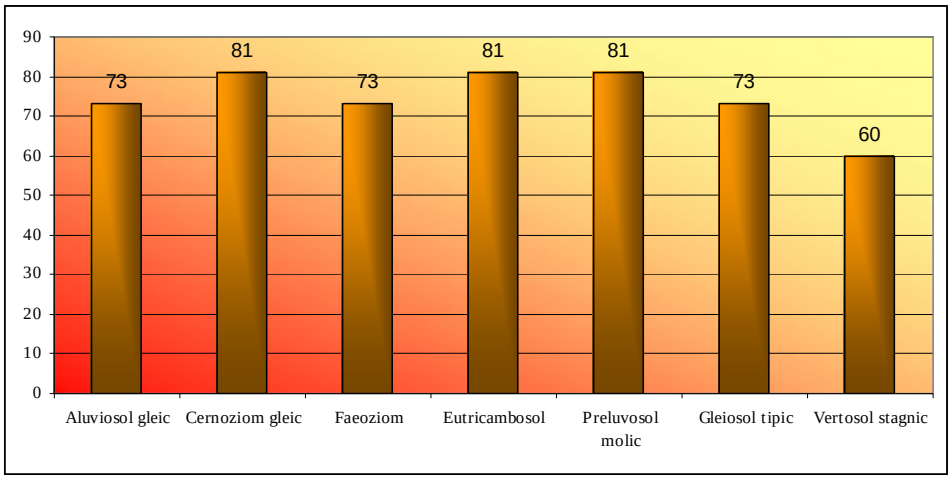

Figure 1 Graphical representation for the suitability use of pasture land

For the use of meadow (Figure 2 and Table 1) haplic chernozem got 72 points mold was located in class III Fertility and won 58 points gleiosoil is located in the fifth grade of fertility.

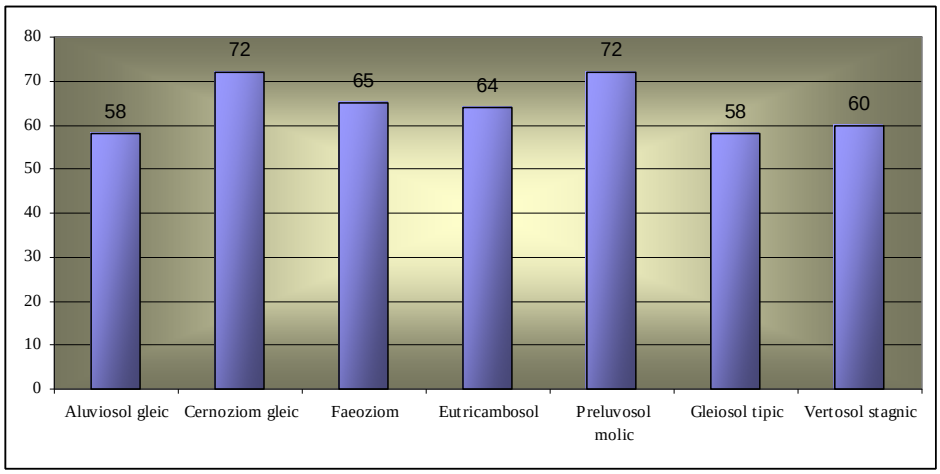

Figure 2. Graphical representation for the suitability use of meadow soils

For the use of arable (Figure 3 and Table 1) haplic chernozem got 81 points mold being located grade II fertility and vertosoil won 60 points are located in the fifth grade of fertility.

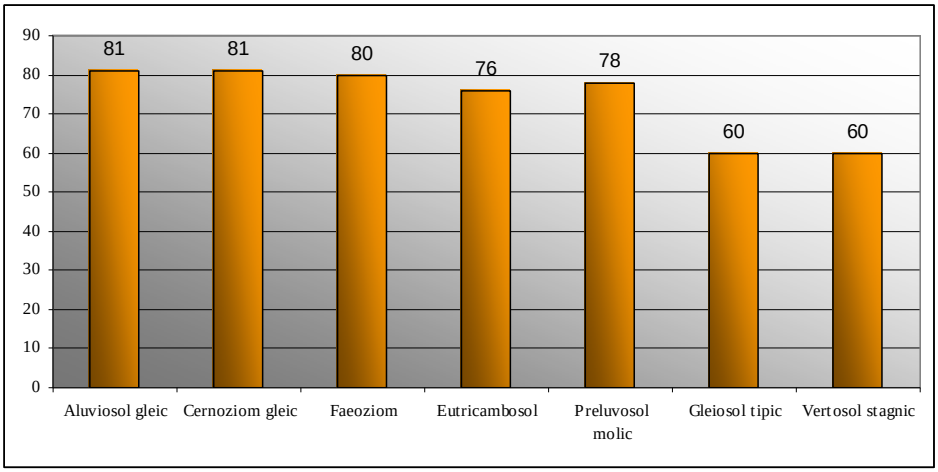

Figure 3. Graphical representation for the use suitability of arable land

Table 1

Suitability of soils for land use of pasture, meadow and arable

Nr. Crt.	Soil type	Pasature		Meadow		Arable	
		Note	Class	Note	Class	Note	Class
1.	Gleyi Aluviosoil	73	III	58	V	81	II
2.	Gleyi chernozem	81	II	72	III	81	II
3.	Phaeozems	73	III	65	IV	80	III
4,	Eutricambosoil	81	II	64	IV	76	III
5.	Molic luvisoil	81	II	72	III	78	III
6.	Gleiosoil	73	III	58	V	60	V
7.	Vertosoil	60	V	60	V	60	V

For the wheat crop (Figure 4 and Table 2) gley chernozem got 90 points mold being located grade II fertility and vertosoil won 45 points are located in Class VI fertility.

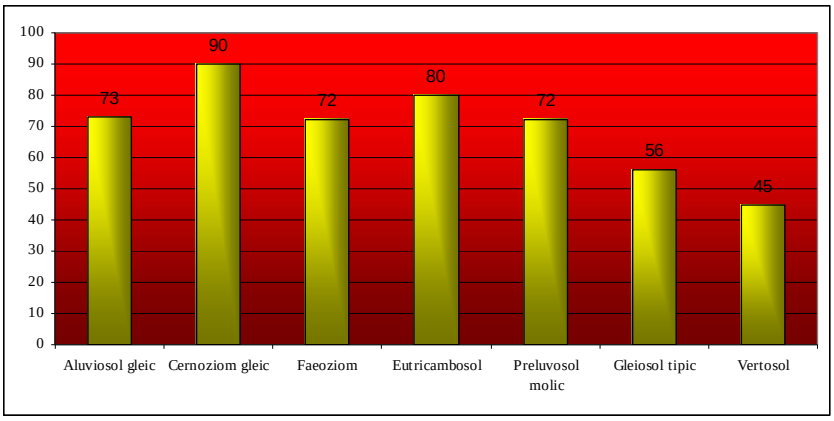

Figure 4 Graphical representation of land favorability for growing wheat

For culture of barley (Figure 5 and Table 2) got 90 points mold being located grade II fertility and vertosoil won 46 points being located grade VI fertility.

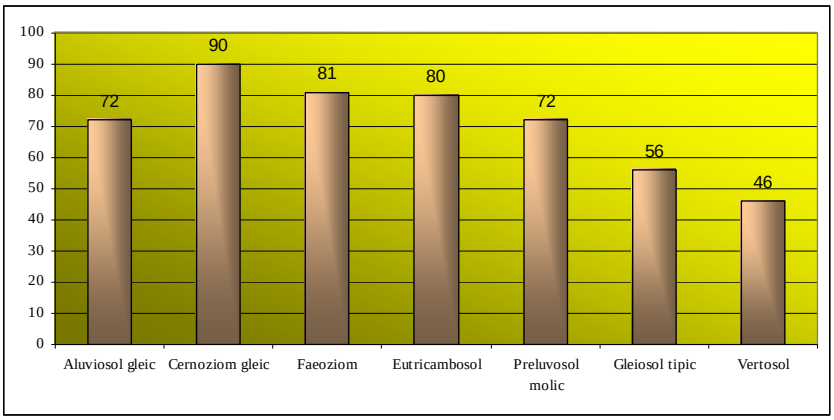

Figure 5. Graphical representation of land favorability for growing barley

Table 2

Favorability soil for growing wheat and barley

Nr. Crt.	Soil type	Wheat		Barley	
		Note	Class	Note	Class
1.	Gleyi aluviosoil	73	III	72	III
2.	Gleyi chernozem	90	II	90	II
3.	Phaeozems	72	III	81	II
4,	Eutricambosoil	80	III	80	III
5.	Molic luvisoil	72	III	72	III
6.	Gleiosoil	56	V	56	V
7.	Vertosoil	45	VI	46	VI

For corn crop (Figure 6, Table 3) gleyi chernozem got 90 points mold being located grade II fertility and vertosoil won 30 points were located in class VIII fertility.

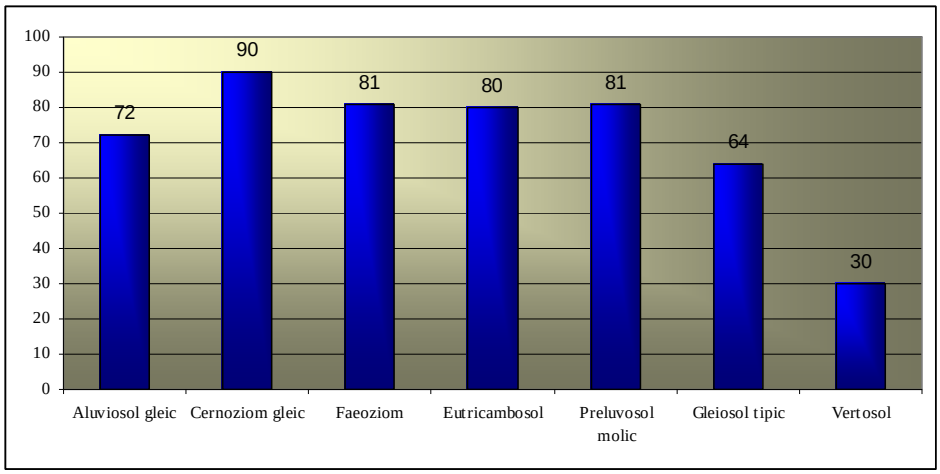

Figure 6. Graphical representation soil favorability for corn crop

For sunflower crop (Figure 7 and Table 3) gleyi chernozem got 90 points mold being located grade II fertility and vertosoil won 30 points were located in class VIII fertility.

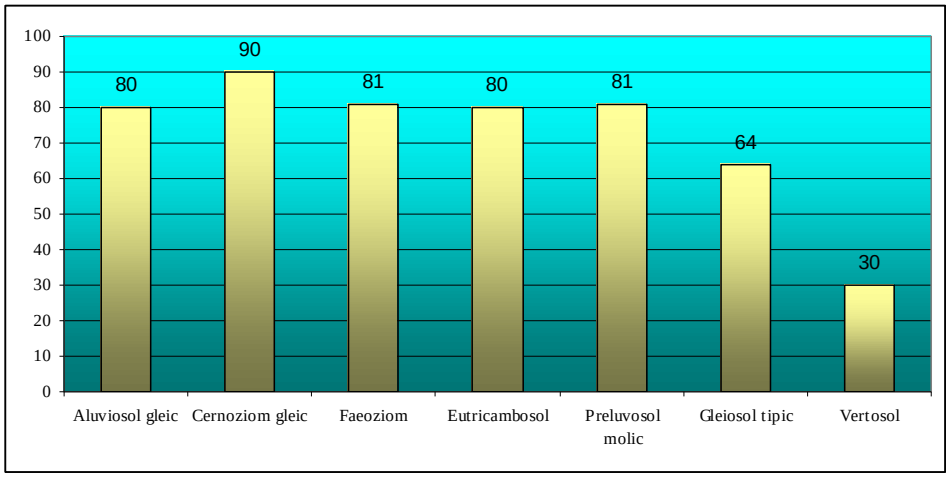

Figure 7 Graphical representation of land favorability for the cultivation of sunflower

Table 3

Favorability soil for the cultivation of maize and sunflower

Nr. Crt.	Soil type	Maize		Sun flower	
		Note	Class	Note	Class
1.	Gleyi aluviosoil	72	III	80	III
2.	Gleyi chernozem	90	II	90	II
3.	Phaeozems	81	II	81	II
4,	Eutricambosoil	80	III	80	III
5.	Molic luvisoil	81	II	81	II
6.	Gleiosoil	64	IV	64	IV
7.	Vertosoil	30	VIII	30	VIII

CONCLUSIONS

Based on weighted average grades calculated from land use and agricultural crops, the current methodology bonitare, we stated:

a) for agricultural land use:

- In terms of very suitable land: pasture 60.82% 10.83% arable, vineyards and orchards 14.19% 53.59%;
- In terms of suitable land: 10.52% grassland, arable land 54.35%, 61.02% meadows, vineyards and orchards 53.55% 10.79%;
- In terms of land suitable medium: 37.18% meadows, pastures 27.66% 33.82% arable, vineyards and orchards 3.08% 30.68%;
- In terms of less suitable land: 1.80% arable land, pasture 1.80% 1.80% meadows, vineyards and orchards 32.54% 4.88%;

b) agricultural crops:

- In terms very favorable areas meet the following situation: 6.97% wheat, barley, 7.47%, 7.47% corn, sunflower 46.87% 46.37%;
- In terms of favorable areas meet the following situation: 57.41% wheat, barley 56.91%, 59.99% corn, sunflower 20.59%, 7.22% ;
- As regards the Middle favorable areas meet the following situation: 33.82% wheat, barley 33.82%, 13.87%;
- In terms less favorable areas meet the following situation: 1.80% wheat, barley, 1.80%, 32.54% corn, sunflower 32.54%.

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