RESEARCHES REGARDING THE ESTABLISHMENT FOR NEW PLANTATION FOR APPLE AND PEAR TREES IN BIHOR COUNTY

Venig Aurora*

*University of Oradea, Faculty of Environmental Protection, 25 Gen. Magheru , Oradea, Bihor; venig_aurora@yahoo.com

Abstract

The researches that were carried out in Bihor County highlight the favorability and suitability of the main acid soil types in order to establish new orchards. The studies resemble the favorability and suitability classes of the acid grounds from the county for the species apricot and peach.

Keywords: hidropedo-improving system, production capacity, land calibration.

INTRODUCTION

The main reason of this paper is to highlight some essential aspects concerning the acid soils quality and less acid soils situated in Bihor County.

The studied information were taken from the pedology papers from O.S.P.A. Bihor and from the national monitoring system organized by I.C.P.A. Bucharest.

The approached issues refer to a surface of 22.864 ha, containing high acid soils, 118.578 ha medium acid soils and 129.039 less acid soils, resulting a surface of 270.481 ha, which represent the surface which will be the studying object.

In accordance with the Romanian Soils Taxonomy System (SRTS-2003) in the area studied, there have been identified 10 categories of soils, 18 types approximately 120 sub-types and numerous detailed units.

In close relation with the variety of geomorphologic and geolitic factors which lead to a great diversity of parental materials, as well as of the various anthropic interventions, there resulted a numerous population of soils which, in keeping with the Romanian Soils Taxonomy System (SRTS-2003) and with the percentage at soil type level encountered in the area studied, present the following situation: litosoils 3,5%, regosoils 1.3%, psamosoils 1,6%, alluviosoils 7,6%, chernozom 6,8%, phaeozom 3,0%, rendzins 0,7%, entricambosoils 10,9%, districambosoils 1,8%, preluvisoils 11,1%, luvosoils 31,8%, podosoils 3,6%, vertosoils 0,8%, gleysols 7,5%, stagnosols 0,2%, solonetz 1,9% and erodosoils 5,9%.

MATERIALS AND METHODS

To calculate the evaluation marks, which characterizes each soil unit limited in the pedological study which were made in Bihor County, there were made the most important characteristics, easy and certainly measurable, that are found in pedologic studies known as indicators of evaluation. Evaluation marks for each utilization category of soils and crop were made multiplications by 100 the product of the coefficients (17 indicators), which participate directly to the calculus:

$y = (x_1 * x_2 * \ldots * x_{17}) * 100$

where:

y = evaluation marks;

$x_1 * \ldots * x_{17}$ = the value of the 17 indicators

RESULTS AND DISCUSSIONS

The favorability, according to the Romanian Pedology School, is the measure that a soil meets the needs of a plant's life, in the usual climate conditions and within a good agrotechnique.

So the agricultural land calibration regarding the favorability establishment for the seed species resemble the followings:

For the apple crop (table nr.1, figure nr.1), the phaezom obtained 71 points, being situated in the 3rd fertility class and the vertosoil obtained 7 points, being situated in the 10th fertility class.

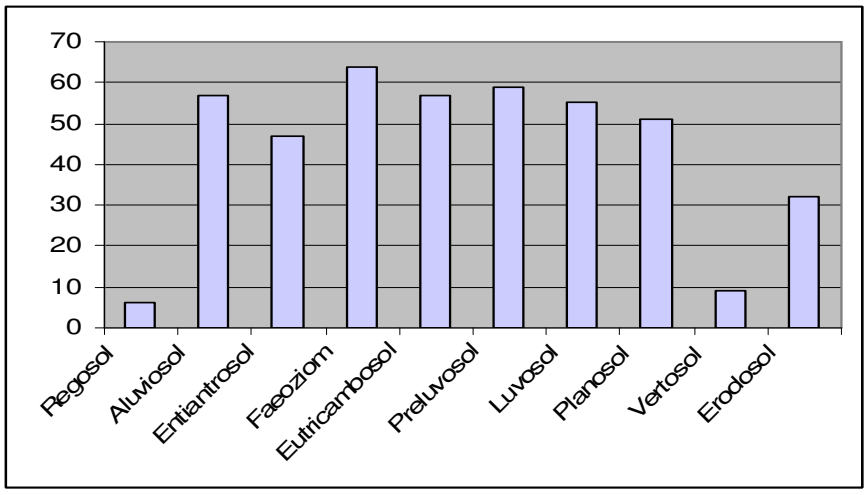

Fig. 1 Graphical representation of soil's favorability for apple-tree

Table 1

Soil's favorability for apple-tree and pear-tree

Nr. crt.	Soil type	Apple		Pear	
		Marks	Class	Marks	Class
1.	Regosol	7	X	5	X
2.	Aluviosol	55	V	58	V
3.	Entiantrosol	52	V	58	V
4.	Faeoziom	71	III	71	III
5.	Eutricambosol	39	VII	40	VII
6.	Preluvosol	67	IV	67	IV
7.	Luvosol	34	VII	35	VII
8.	Planosol	58	V	66	IV
9.	Vertosol	7	X	16	IX
10.	Erodosol	35	VII	35	VII

For the pear crop (table nr.1, figure nr.2), the phaezom obtained 71 points, so that it is situated in the 3rd fertility class and the regosoil obtained 5 points, being situated in the 10th fertility class.

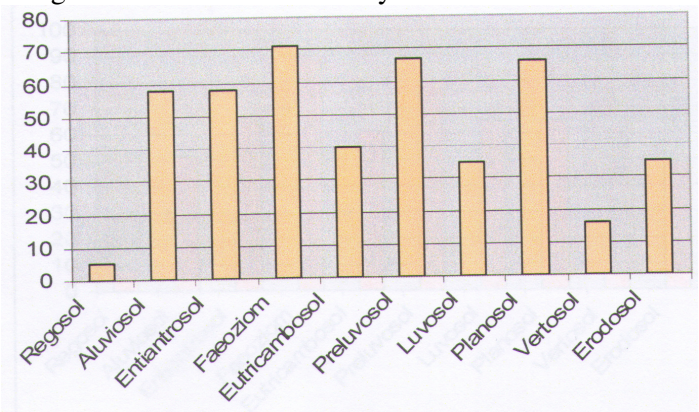

Fig. 2. Graphical representation of soil's favorability for pear-tree

Concerning the suitability of the studied lands, an important role before establishing of the orchards of seed species, has the knowledge of the production capacity of every soil unit and land calibration.

The studies that were carried out resemble the following suitability classes:

- 1rst class, with very suitable lands, occupy 8,09% from agricultural surface of the studied land.
- 2nd class, with a suitable lands, occupy 16,22% from the agricultural surface of the studied land.
- 3rd class, with a medium suitability, occupy 32,92% from the studied land.
- 4th class, with less suitable lands, occupy 30,32% from the agricultural studied land.

- 5^{th} class, with unsuitable lands, occupy 11,85% from the agricultural studied land.

CONCLUSIONS

From the geomorphological point of view, in Bihor County there took place many hidropedoimproving interventions, significant changes, representing an important element for the pedological research.

The acid soils improvement target the state reaction adjustment and the other negative aspects amendment, that have an influence over the production capacity, as well as the insufficient supply with nutrients and the defective aerohidric system.

The acid reaction is usually followed by a low macro and microelements system.

The acid soil physical and hydrophysical acquitrines should be completed with fertilization and improvement systems.

Regarding the favorability of the acid soils from the Bihor County, for the seed species plantation, the situation is a following:

- for the apple crop :
  - → the phacozom obtained 71 points, being situated in the 3^{rd} fertility class,
  - → the vertosoil obtained 7 points, being in the 10^{th} fertility class.
- for the pear crop:
  - → the phaezom obtained 71 points, being situated in the 3^{rd} fertility class,
  - → the regosoil obtained 5 points, being situated in the 10^{th} fertility class.

REFERENCES

1. Chira A. and co.,2006, Fruit trees, Ed. MAST,Bucharest,21
2. Chira L. and co. 2005, Apricot and peach trees",Ed MAST,Bucharest,42.
3. Chirita C.D.,1978, Describing and classifying the soils in ecological purposes"Ed Acad. Romane,82.
4. Chira L. and co., 2004, Apple crop",Ed. MAST,Bucharest,89
5. Chira L. and co.,2007, Pear and quinces crop",Ed. MAST,Bucharest,69.
6. Draganescu E.,2002, Pomology",Ed Mirton,Timisoara,176.
7. Ghinea L.,1985, Live in soil",Ed Ceres,Bucharest, 47.
8. Teaci D.and co.,1980, Evaluation marks of the agricultural soils",Ed. Ceres,Bucharest,25
9. Tarau D.and co.,2001, Evaluating the ecopedological soil conditions from the Western part of the country, under the production aspect" ,Scientific Paper Salonta, Commemorative Session,100 years of Agricultural Education.38-47.
10. Tarau and co., Soil resources from the Western part of the country and their importance in establishing some alternative agricultural systems, Scientific papers, USAMV Bucharest,58.