SOIL RESOURCES IN THE COMMUNETEREGOVA CARAS - SEVERIN COUNTY

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Abstract. *The present paper refers to the land pertaining to the cadastral territory of the Teregova commune, in Caraş-Severin county, respectively the soils identified in the mentioned perimeter. It is studied in relationship with the environmental factors that condition its existance, together forming homogenous ecological territory units (UT or TEO) which display specific favour abilities in different agricultural or silvicultural uses and with specific amelioration technologies and requirements. The paper aims at obtaining an information fund regarding technical and fertility characteristics, so as to determine the current general production capacity of the lands for various crop plants, respectively various usages which should fundament from a technical-scientific perspective the optimal practical measures regarding the rational preserving usage of the land fund, implementation of the nitrate directive, application of the epuration mud directive regulations, the biofuel directive, the directive regarding underprivileged areas delimitation, climatic changes, ecologic agriculture. Data interpretation, the natural frame characterizartion, analysis of production limiting factors like agricultural land assessment, were carried out according to the ″Methodology of Pedologic Study Elaboration ″(vol. I, II, III) developed by I.C.P.A. Bucharest under the A.S.A.S. Bucharest seal in a 1987, ″The Romanion Soil Taxonomy System ″(SRTS) from 2003, as well as the MAAP Order 223/28.05.2002 published in the Public Gazette from 13.08.2002, respectively the theoretical and practical materials from the paper ,,Guide to describing the soil profile and the specific climatic conditions in the field" elaborated by the National Institute for Research and Development in the field of Pedology, Agro-chemistry and Environmental Protection in Agriculture - ICPA Bucharest, in 2009. The Teregova commune territory lies in the Caraş-Severin county, at about 35 km from Caransebeş and about 70 km from Orşova. The Teregova commune is surrounded by: - the communal territory of Zăvoi, Armeniş, Slatina Timiş and Brebu Nou to the north - the communal territory of Mehadica, Luncaviţa and Domaşnea to the south - the communal territory of Cornereva to the east - the communal territory of Văliug and Prigor to the west The total surface of the researched territory is of 33121 ha, the studied one of 16109 ha, and the total mapped surface is of 14008 ha, distributed on usage categories.*

Key words: *soil, Teregova, technical and fertility characteristic*

INTRODUCTION

The object of the present study is represented by the land belonging to the Teregova commune territory, in the Caraş-Severin county, respectively soils identified in the mentioned perimeter. They are studied in relationship with the environmental factors which condition their existence, forming, together with these factors, land units or ecologically homogenous territories (UT or TEO) with favorability triats specific for various agricultural and forestry usages and with specific amelioration requirements and technologies.

The present study brings forth the following objectives:

- morphological, physical and hygrophysical, and chemical characterization of the soil units identified and outlined on the map.
- land assessment and favorability establishment for the main crops.
- highlighting the nature and intensity of the limitative and/or restrictive factors of the agricultural production.
- land grouping depending on the favorability for various usages (tillable, grassland, hay land etc).
- establishing usage categories and subcategories for agriculture and forestry depending on land favorability.
- identifying, outlining and inventorying types of soil/land degradation, establishing land restrictions for various usages and establishing optimal agro-pedo-ameliorative and antierosional measures.

MATERIAL AND METHOD

Agricultural land assessment represents an operation of in depth knowledge about plant growth, development and fruition conditions, as well as determining their favorability degree for certain crops (or usage categories), through a system of technical indices and assessment grades. As such, assessment determines the degree to which a territory is better than another, considering its fertility, reflected by the productions it determines. The harvest quantity obtained per surface unit, meaning the productivity of agricultural plants, depends on the entirety of environmental conditions, as well as on the influence man carries out, which can positively modify natural factors or plant traits, so that it better capitalizes natural conditions.

The assessment grade for usages and crops is obtained by multiplying with 100 the product of the coefficients (the 17 indicators) which directly participate in the establishing of the assessment grade.

$$Y = (x1, x2, x3…..x17) \square 100$$

Where:

Y = assessment grade

x1, x2, x3…..x17 = coefficient value (17 indicators)

Limitative and restrictive factors of the agricultural production (humus reserve, fine texture, compaction, low upward force, land unevenness, underground humidity excess, stagnant humidity excess etc.) determine the amelioration and/or usages requirements and measures mandatory in case of non-arrangement, thus requirements and measures for the prevention of soil-land degradation and for the preservation of soil-land fertility.

RESULTS AND DISCUSSIONS

The Teregova commune territory is situated in the Caraş-Severin county, at about 35 km from Caransebeş and about 70 km from Orşova. The Teregova commune is surrounderd by the following neighbours:

- to the north the communal territory of Zăvoi, Armeniş, Slatina Timiş and Brebu Nou
- to the south the communal territory of Mehadica, Luncaviţa and Domaşnea
- to the east the communal territory of Cornereva
- to the west the communal territory of Văliug and Prigor

The total surface of the researched territory, is of 33121 ha, the studied one of 16109 ha, and the total mapped surface of 14008 ha, distributed in usage categories as in the table:

Table1

Surface structure for the main usage categories

Specification	Tillable	Grassland	Haylands	Vineyards	Orchards	Agricultural	Forests	Waters	Total
Ha	1186	7 607	4 664	0	551	14008	18553	85	33118

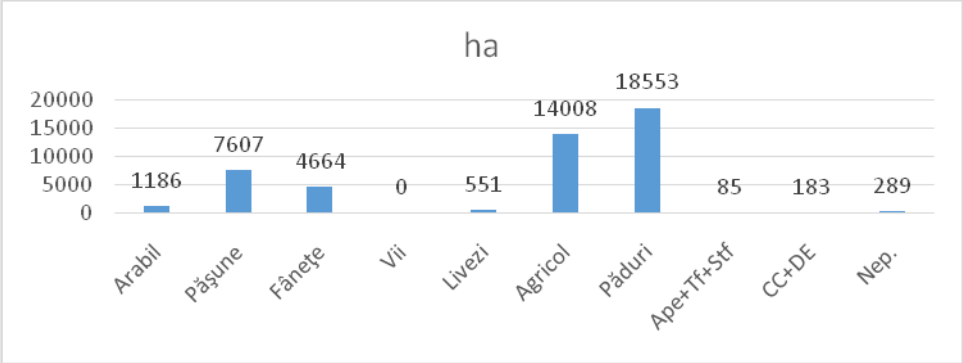
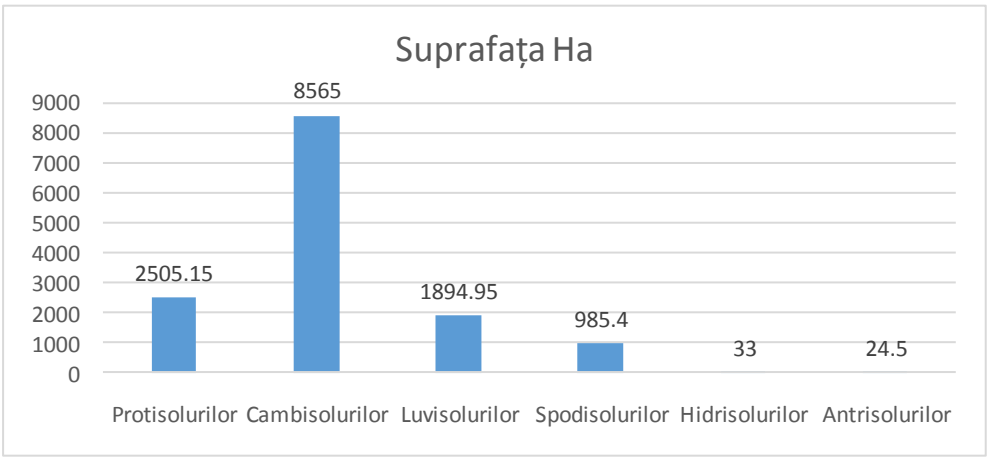


Fig. 1 Surface structure

Based on the field study and the analysis of the 71 main profiles, the soil legend was determined, namely 6 soil classes, 9 soil types and 24 subtypes, as follows:
class Protisoils S = 2505.15 ha, 17.89 %
class Cambic soils S = 8565.00 ha, 61.14 %
class Luvisoils S = 1894.95 ha, 13.53 %
class Spodisoils S = 985.40 ha, 7.03 %
class Hygric soils S = 33 ha, 0.24 %
class Antrisoils S = 24.5 ha, 0.17 %



After the calculation of assessment grades, the following values were obtained, as presented in the table below:

Usage categories / Quality classes		Tillable	Grassland	Hayland	Vineyards	Orchards	Agricultural Total	TOTAL
Class I	Grade	0	84	90	0	0	0	0
	Ha	0	100.95	88.2	0	0	0	0
	%	0.00	1.33	1.89	0	0.00	0.00	0.00
Class II	Grade	62	70	69	0	0	68	68
	Ha	3.9	404.8	217.2	0	0	18.6	18.6
	%	0.33	5.32	4.66	0	0.00	0.13	0.13
Class III	Grade	50	50	47	0	53	49	49
	Ha	374.65	3878.45	781.4	0	141.75	498.6	498.6
	%	31.59	50.99	16.75	0	25.73	3.56	3.56
Class IV	Grade	27	36	29	0	31	26	26
	Ha	635.2	150	3245.2	0	317.3	2923.15	2923.15
	%	53.56	1.97	69.58	0	57.59	20.87	20.87
Class V	Grade	17	15	17	0	4	6	6
	Ha	172.25	3072.8	332	0	91.95	10567.65	10567.65
	%	14.52	40.39	7.12	0	16.69	75.44	75.44
Average	Grade	33	37	34	-	32	11	11
	Ha	1186	7607	4664	0	551	14008	14008
	%	100	100	100	0	100	100	100

With regards to the data presented above, depending on the specific traits of each soil and land unit (described and characterized according to MESP, 1987), within the researched perimeter, the following limitation groups were encountered:

Limitations			**Extremely severe (ha)**	**Very severe (ha)**	**Severe (ha)**	**Moderate (ha)**	**Reduced (ha)**
Limitations due to some chemical soil characteristics	**Acidity**		-	-	4169.05	5006.35	3525.65
	Humus reserve		-	-	53.95	700.15	2695.25
Limitations due to some physical soil characteristics	**Texture**	**Course**	-	-	-	3083.30	1812.60
		Fine	-	-	-	-	44.00
	Compaction		-	-	-	-	2115.15
	Low upward force		-	74.75	-	2904.85	1760.10
Limitations due to erosion and land slides	**Limitations due to the land's slope**		24.5	1012.75	1217.05	66.55	2876.45
Limitations due to erosion	**Limitations due to slides**		-	4513.50	1712.20	2405.85	997.80
Limitations due to land coverage or unevenness	**Limitations due to land rock and boulder coverage**		6462.65	-	4425.60	-	-
	Limitations due to land unevenness		-	-	-	285.75	350.65

Limitations due to humidity excess (drainage)	**Limitations due to underground humidity excess**	-	-	33.00	147.90	133.40
	Limitations due to stagnant humidity excess	-	-	424.45	1512.20	1745.25
	Limitations due to floodabilty by overflowing	-	-	208.75	-	-
Limitations due to climate	**Limitations due to low temperatures**	6055.90	4107.10	-	-	-
	Limitations due to humidity deficit	-	-	-	368.15	573.55

CONCLUSIONS

The agricultural land of the studied space, with a 14.008 ha surface (86.96% of the surface taken into account), is made up by the following usage categories: tillable 1186 ha (8.47%), grassland 7607 ha (54.30%), hayland 4664 ha (33.30%) and orchards 551 ha (3.93%).

Regarding the distribution on quality (fertility) classes, for the usage category "tillable", the situation is as follows: class II 28.20 ha (2.38 %), class III 775.65 ha (65.40 %), class IV 307.40 ha (25.92 %), class V 74.75 ha (6.30 %).

Main limitative factors impacting the soil cover are: acidity, low humus reserve, texture, high compaction (very low porosity), land upward force, land slope, landslides and unevenness, land rock and boulder coverage, surface erosion (including erosion risk), humidity excess (underground, surface, by overflowing or flowing down the versant), low temperature, and humidity deficit.

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