THE QUALITY OF THE EDAPHIC RESOURCES FROM THE HĂLMAGIU-GURAHONT-ALMAŞ DEPRESSION

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Abstract. *The work aims the accumulation of knowledge on the characteristics of the natural environment, as elements that define the structure of the edaphic cover and of the ecological factors specific to the soil, as well as to highlight a series of limiting factors that act on the production capacity of agricultural or forestry lands, development of sustainable soil and land resource management systems.As a basic component of the terrestrial ecology, the edaphic coating is one of the most important elements of the environment, being in a close interdependence with the vegetal coating.The issue addressed concerns an area of 89802 ha (37451 ha, 41.70% are agricultural land and 48610 ha, 54.13% forests), located in The Hălmagiu and Gurahonnţ-Almaş depressions, crossed by the Crisul Alb river.Considering these facts, in the paper are presented some aspects regarding the physical-geographical and pedo-climatic characteristics based on the existing pedological information in the OSPA Timiş and Arad archive, but also based on the research carried out in time by the authors (within OSPA, USAMVBT and UPT), some aspects regarding the pedoclimatic characteristics as elements that define the fertility and the quality of the soils.The paper provides basic information and methodological elements on the classification and assessment of soil resources, thus integrating into the wider field of complex studies of natural resources and their capitalization with the protection of the environment.The physical-geographical conditions of soil formation and evolution are briefly but comprehensively mentioned, mentioning the way in which the zonal particularities of the considered space, of only 89802 ha, as an area determine a great diversity of ecological conditions, generated by the variability of factors -atmospheric and telluric-edaphic), and more broadly the composition of the edaphic cover, some restrictive characteristics of the quality and suitability of the lands for certain agricultural or forestry uses, with specific requirements and improvement measures.*

Keywords: *quality, edaphic, forestry, productivity, land*

INTRODUCTION

As a basic component of terrestrial ecology, the edaphic coating is one of the most important elements of the environment, which has the role, on the one hand, of a complex indicator of the state of evolution of the properties that determine the growth of plants and, on the other hand, of depository of the influence of all other conditions and factors As an open ecological system, it is in close contact with the elements of the environment, in the immediate vicinity, through a continuous flow of matter and energy, phytocenoses acting on the soil both directly and indirectly

Numerous studies and research at national level have shown that between agricultural technological systems of plant cultivation, environmental status and quality of life, there are interdependent relationships (Borcean et al. 1996, Borza et al., 2003, 2005, David et al. , 2018, Dumitru et al., 2000, Munteanu, 2000, Munteanu et al., 2003, Rogobete et al., 1997,2021, Teaci, 1980, Ţărău et al., 2005,2016,219, Vlad, 2009).

Given these considerations in the paper are presented based on existing pedological information in the archive OSPA Arad and Timisoara, but also based on research conducted over time by the authors (within OSPA, USAMVB), some aspects of pedoclimatic characteristics as defining elements fertility and soil quality in order to ensure, land users, specialized support for the development of management programs for renewable natural resources (soil, water, biodiversity).

MATERIAL AND METHODS

The issue addressed refers to an area of 89802 ha (tab.1) of which 37451 ha (41.70%) are agricultural land and 48610 ha (54.13%) land with forest vegetation, which from an administrative point of view belongs to a number of 9 territorial administrative units (ATU): Almaş (with villages Cil,Joia Mare and Rădeşti), Brazii (with villages Buceava-Şoimuş, Iacobin, Mădrigeşti and Secas), Gurohonţ (with the villages of Balţele, Bonţeşti, Brusturescu, Dulcele, Fenis, Honţişor, Iosaş, Iosas, Iosasel, Mustesti, Pescari,Valea Mare and Zimbru), Hăllagiu (with the villages Bănești, Bodești, Brusturi, Cristești,Ionești, Leasa, Leștioara, Poienari, Tisa and Țărmure), Hălmăgel (with the villages Luncșoara, Sârbi, Târnăvița and Țohești), Igneşti (with the villages Minead, Nădălbești and Susani), Pleşcuţa (with the villages Aciuţa, Budeşti, Dumbrava, Gura Văii, Rostoci and Tălagiu) and Vârfurile (with villages Avram Iancu, Groși, Lazuri, Măgulicea, Mermești, Poiana,Vidra).

Table 1

Land fund situation (ha /%) *

No.	UAT	Arable	Pasture	Hayfield	Vineyard	Orchards	Total agricultural	Forestry	Waters	Other categories	Total
1	Almaş	2233	2246	219	-	-	4698	2823	88	518	8127
2	Brazii	783	2765	583	-	-	4131	7341	71	334	11877
3	Dieci	3169	1532	124	-	6	4831	2921	29	592	8373
4	Gurahonţ	2130	3350	1212	4	129	6825	9711	83	462	17081
5	Hălmagiu	1385	1958	821	-	-	4164	3682	58	499	8403
6	Hălmăgel	939	1199	379	-	---	2517	5046	20	100	7683
7	Igneşti	1114	514	97	-	-	1725	3231	6	226	5188
8	Pleşcuţa	576	2313	932	-	1	3822	3728	72	268	7890
9	Vârfurile	1373	1888	1477	-	-	4738	10127	18	297	15180
	Total ha	13702	17765	5844	4	136	37451	48610	445	3296	89802
	%	15.26	19.78	6.51	-	0.15	41.70	54.13	0.50	3.67	100

* National Institute of Statistics, Bucharest, AGR 101B-2014 Arad County

The research of the ecopedological conditions was done in accordance with the "Methodology of Elaboration of Pedological Studies" (vol I, II, III) elaborated by ICPA Bucharest in 1987, completed with specific elements from the Romanian Soil Taxonomy System (SRTS-2012), as well as other normative acts updated by MAAP Order 223/2002, respectively MADR Order 278/2011, based on the pedological information accumulated in the OSPA archive in Timişoara (for about 70 years), but also on the basis of research carried out in time by the authors (within OSPA, USAMVB from Timişoara), studies that were completed with elements recently collected from the field.

RESULTS AND DISCUSSIONS

The object of study is the land with an area of 89802 ha (tab.1) of which 37451 ha (41.70%) are agricultural land and 48610 ha (54.13%) land with forest vegetation, located in The Hălmagiu and Gurahonnţ-Almaş depressions**,** respectively the identified soil and land units (TEO) and their quality status.

Hălmagiu Depression, known as The land of Hălmagi it is a land located between Codru Moma Mountains (west) - Bihor Mountains (east) and Zarand Mountains (south), which is a well-marked geographical individuality in the landscape, which is more related to the depressions Brad (on Crisul Alb) and Beiuş (on the saddle from Groşi). Its connection with the Almaş-Gurahonţ Depression is made through the epigenetic gorge of Criş Alb between Vârfurile and Gurahonţ (the Pleşcuţa gorge).

The depression is furrowed, from east to west towards the main river Crişul Alb by a rich hydrographic network consisting of: Hălmagiului valley (with three branches in which are the villages Hălmagiu, Hălmăgel and Băneşti), which gathers the waters of Brusturilor, Lârbşorilor and S valleys, then the valley of Leucii which gathers the waters from the hydrographic network of the Vârfurilor area, the valley of Tăcăselelor fed by the streams Poienii, Izbucului, Rogozului, the valley of Aciuţii, with the village of Aciuţa etc.

On one of these tributaries, respectively the Izbucului brook, there is one of the most well-known intermittent karst springs in our country, the Călugări, Ponoarele spring.

The relief forms are represented by low and medium altitude mountains and pre-mountain hills that make the transition from the depression to the mountainous area (Fig. 1), on the edges of the depression meeting three mountain groups, respectively the Apuseni Mountains through the peaks Bihor (1849 m) and Găina (1486 m), Codru-Moma Mountains through the Moma peak (900 m), Zărandului Mountains through the Bontău peak (700 m).

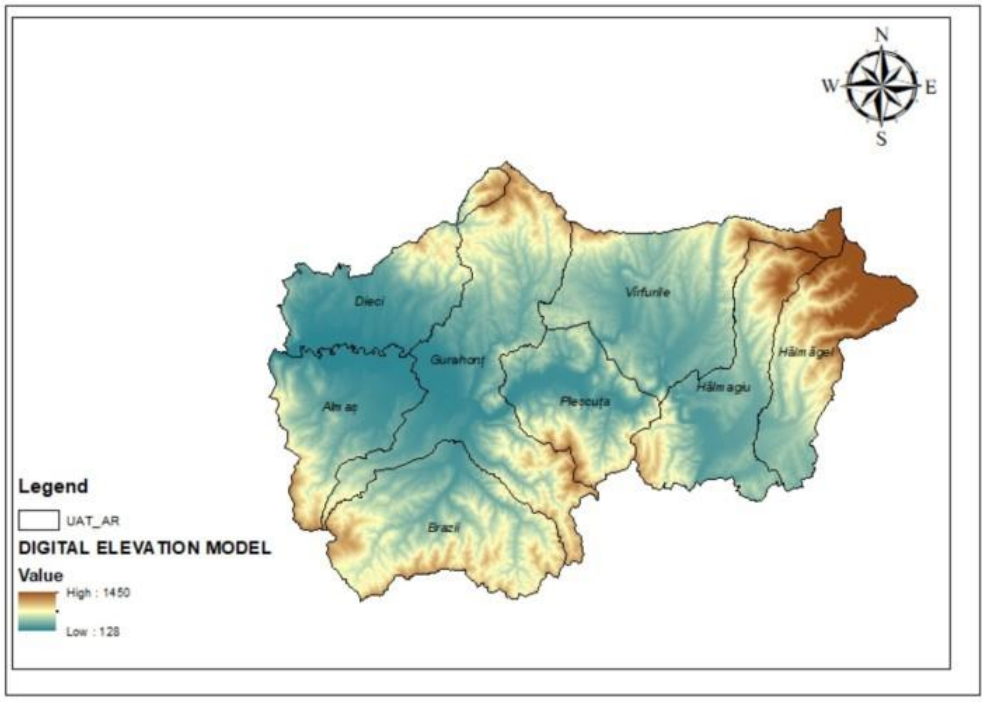

Fig. 1 Digital elevation model

Gurahonţ - Almaş depression is carried out on both sides of the Crişul Alb river, the Gurahonţ - Almaş depression, surrounded by lofty hills, some covered with towering oaks and beeches and others bald, showing its stony and hard face, includes the terminations of the

northern and southern foothills, the meadow and the terraces of Criş White between Gurahonţ and the epigenetic gorge from Joia Mare.

The unity and geographical individuality of the depression make it a true intramountain "country", full of large villages specializing in animal husbandry, the depression being bordered on the north by the Codru-Moma mountain range, on the south by the Zărand mountains, and on the east and west by the hills of Cuied and Codrului.

As it results from the archeological discoveries (from Rădești) and from other historical documents, this territory- "country" of ancient habitation has known a socio-economic flourishing since the time of Burebista-Decebal, later, with the appearance of the first political formations. The territory was part of Menumorut's voivodeship.

The hydrographic network of Crișul Alb is represented in the Almaş area by the course of Almaș, Rădești valley and Musteşti, through which the alluvial-colluvial plain penetrates deep into the mountain in the form of depression bays, which favored the development of an intense agro-pastoral activity.

In the Pleşcuţa area, a segment from Crișul Alb, which crosses the territory from the east to the west, collects from its right and left slopes a series of tributaries such as: Valea Ursului, Valea Satului, Valea Tălagiului, Valea Pietrei, Valea lui Tudor, Tăcăşele brook, Calului brook, Valea Lungă and Valea Concii, Valea Pleşcuţei, Valea Muntelui.

Climatic peculiarities of The Hălmagiu and Gurahonnţ-Almaş depressions are determined by their geographical position within the European continent which is specific to a certain circulation of air masses of various types, circulation printed either by the centers of action of dynamic origin (Azores and subtropical anticyclones) or by centers of seasonal thermal action (Siberian anticyclone, Asian or Mediterranean depression).

Also, the orientation of some slopes on the SV-NE direction ensures the penetration in certain periods of the year of the sub-Mediterranean air masses, a fact reflected in the presence of vegetation of this type in certain areas of the commune.

The relief, through altitude and orientation of the slopes, generates a layered climate, influences the climatic elements through the overall configuration, through altitude, through the degree of inclination and the exposure of the slopes. Favoring the presence of man in this land to the highest mountain peaks (fig. 2).

The floristic peculiarities are highlighted both by the endemics and by the thermophilic, southern elements, present in a remarkable number, giving to the immoral and practical vegetation a mosaic, specific shade, reason for which the flora of the researched space falls in the East-Carpathian (Dacian) province, Codru-Zarand –Trascău district.

The natural vegetation within the researched area is made up of deciduous forests, meadows and ruderal groups being arranged in specific floors, conditioned by the natural environment in which the varied lithology and the diversified relief (mountain, hill, terraces, meadow) and the generally warm climate , have a decisive role.

The forest presents an interpenetration of the continental elements with the thermophilic ones, a rich phytocenological variety, a mosaic character of the associations and frequent changes of the layer, conditioned by the orientation of the valleys and interfluves, by the presence of petrographic and structural steepness, by the depression relief

On the hills the forest associations present alternations dominated by: beech (Fagus silvatica), beech (*Fagus silvatica*) + oak (*Quercus petrae*), oak (*Quercus petrae*) + pedunculate oak (*Quercus pedunculata*), oak (*Quercus pedunculata*) + sky (*Quercus ceris*)) and sky (*Quercus ceris*) + oak (*Quercus pedunculata*).

On the terraces the forests have associations of oak (*Quercus pedunculata*) + sky (*Quercus ceris*) + oak (*Quercus petrae*) + jujube (*Acer campestre*).

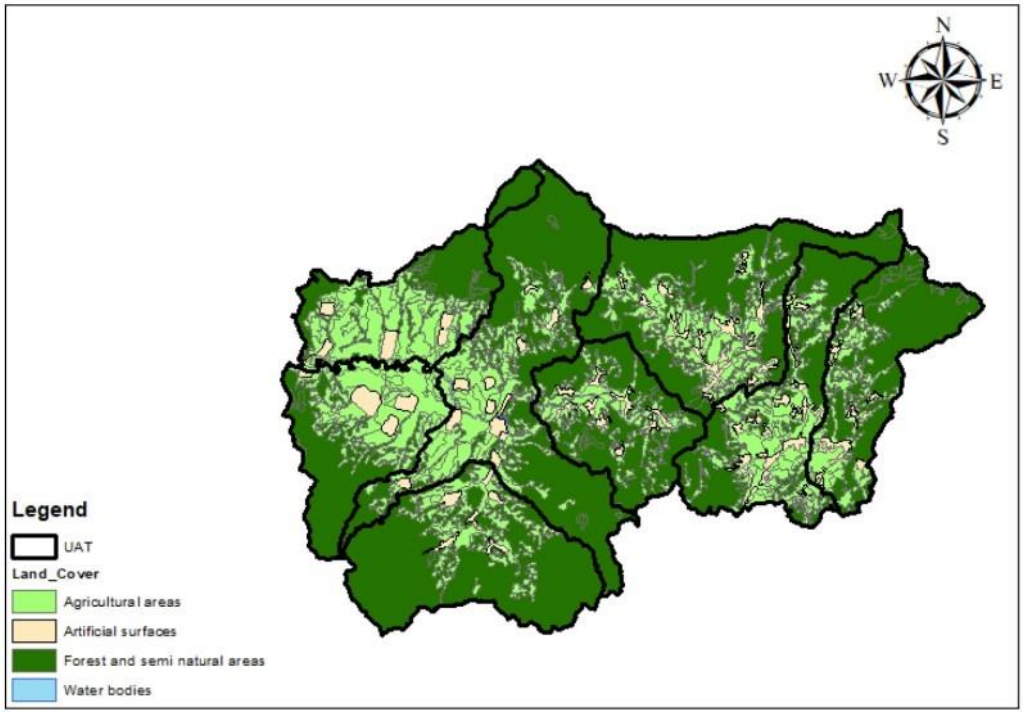

Fig. 2. Land cover

On meadows and secondary valleys: alder (*Alnus glutinosa*) + white poplar (*Populus alba*) + willow (*Salix sp*.).

A significant part of the species that make up the natural vegetation is highlighted by the dendrological park "Arboretumul Sylva" Gurahonţ, the natural laurel reservation in "Dosul Laurului" on the Zimbrului Valley and the Băltele reservation.

"Arboretumul Sylva" located on the left bank of Crişul Alb in Gurahonţ is a dendrological park with species of trees and shrubs brought from all over the globe, has an area of 12.8 ha and is crossed by Valea Honţişorului. It is a unique park in Europe due to the species that populate it. Although it was founded in 1965 by the care of Stefan Eusebiu, in "Garden Journal" there is talk of a park between 1892 and 1898 that mentions the first plantings since 1750.

Laurel Botanical Reserve from the village of Zimbru, unique in Romania, has an actual area of 0.8 ha and is housed in a clearing with an area of about 300 square meters surrounded by a well-cohesive and moist beech forest which together with the surrounding massifs protects the winds maintaining a mild climate with temperatures that do not drop below winter below 10 degrees C, and in summer it is cool and humid.

It was mentioned at the end of the 19th century by the botanist Simonkai, who speaks of several scattered groups. It was declared a natural monument and placed under the protection of the law through the Journal of the Council of Ministers no. 645/1938.

Bălţele Reservation is located on the pasture of Gurahonţ commune and occupies a protected area of about 2 ha. It was established by Decision no.1 / 1995 of the Administrative Commission of the Prefecture of Arad County, for the protection of the rare herbaceous species Centaurea Simonkaiana unique in the county, along with which are found other herbaceous

elements, including a species of wild garlic (*Allium flavum*), carnation (*Dianthus carthusianorum*),prunella (from the species *Prunella laciniata*) etc.

In close correlation with the diversity of landforms, with the variability of climate and vegetation conditions, with the evolution over time, under various anthropogenic interventions, of the surface structure (for the main categories of use) the soils in the researched space present a great diversity, according Soil Taxonomy (SRTS-2012), being identified, in the agricultural area of 37451 ha (tab.2), 17 soil types: Litosol (LS), Regosol (RS), Aluviosol (AS), Rendzina (RZ), Nigrosol (NS), Homosiosol (HS), Eutricambosol (EC), Districambosol (DC), Preluvosol (EL), Luvosol (LV), Alosol (AL), Prepodzol (EP), Vertosol (VS), Stagnosol (SG), Gleiosol (GS) and Antrosol (AT), their share in the territory being closely related to the main form of relief, to the nature of the meso and microrelief forms,as well as the influences of the pedophreaphreatic level and the intensity of the anthropic interventions.

Table 2

The main types of soil in the Hălmagiu-Gurahonţ-Almaş Depression

	UAT	Agric Ha	Type, subtype of soil																	
			LS	RS	AS	RZ	NS	HS	EC	DC	EL	LV	PL	AL	EP	VS	SG	GS	AT	Asoc
1	Almaş	4698	0	0	1529	0	0	0	87	0	847	2235	0	0	0	0	0	0	0	0
2	Brazii	4131	1012	0	269	0	0	0	0	0	764	2066	0	0	0	0	0	20	0	0
3	Dieci	4831	63	0	888	0	0	0	353	0	1918	1015	0	0	0	0	0	101	493	
4	Gurahonţ	6825	566	209	1235	57	0	50	0	916	150	1608	389	608	0	498	0	0	218	321
5	Hălmagiu	4164	63	52	835	15	0	10	1200	326	315	685	0	0	0	94	16	245	308	0
6	Hălmăgel	2517	113	98	253	0	**0**	**0**	1390	313	0	156	0	0	0	0	2	37	155	0
7	Igneşti	1725	**0**	**0**	230	0	0	0	140	0	19	1190	0	0	0	0	0	29	117	0
8	Pleşcuţa	3822	0	0	763	13	0	0	800	0	443	1515	0	0	0	44	0	75	169	0
9	Vârfurile	4738	19	138	612	50	137	0	2174	194	450	715	0	0	60	0	0	90	99	0
	Total ha	37451	1836	497	6614	135	137	60	6144	1749	4906	11185	389	608	60	636	18	597	1559	321
	%		4.90	1.33	17.66	0.36	0.37	0.16	16.41	4.67	13.10	29.87	1.04	1.62	0.16	1.70	0,05	1.59	4.16	0.85

The Forest Fund of Arad County, with an area of 48,610 ha (INS, 2019) is represented by the forests lined on one side and on the other by Criş Alb, which is managed by the Arad Forestry Directorate within the National Forests Authority - Romsilva through forestry schools: Gurahonţ, Sebiş-Moneasa (partially) as well as its own forestry structures, established by the new owners Ocolul Privat „Codrii Iancului", Ocolul Privat „Codrii Zarandului" SRL, Sebiş (partially) and other forestry structures (tab.3).

As it appears from the presented the researched area represented by mountains, hills, terraces and meadows, presents a great diversity of relief forms and variability of climatic conditions, particular that are found in the structure of the edaphic cover, so that according to the Romanian Taxonomy System (SRTS 2012) within the space designated by the area of the 8 territories (tab.3) were identified 12 types of soil: Litosol (LS), Regosol (RS), Aluviosol (AS), Rendzina (RZ), Nigrosol (NS), Homosiosol (HS), Eutricambosol (EC), Districambosol (DC), Preluvosol (EL), Luvosol (LV), Alosol (AL), Prepodzol (EP) with numerous detailed units, which are distinguished by their properties, capacity forestry production and measuressustainable management of the forest fund and distribution in the territory.

Table 3

The main forest soils from the Hălmagiu-Gurahonţ-Almaş Depression

No	UAT	ha INS 201	Tip, subtip de sol												
			ha	LS	RS	AS	RZ	NS	HS	EC	DC	EL	LV	AL	EP
1	Brazii	7341	7341	2580	0	141	0	0	0	0	0	*1100*	3520	0	0
2	Gurahonţ	9711	9711	2100	570	90	411	0	80	*0*	900	2120	3240	200	0
3	Hălmagiu	3682	3682	660	540	60	82	0	20	340	500	680	800	0	0
	OS Gurahonţ	20734	20734	5340	1110	291	493	0	100	*340*	1400	*3900*	7560	200	0
4	Almaş OS Sebiş-Moneasa	2823	2823	0	0	123	0	0	0	*630*	0	*970*	1100	0	0
5	Igneşti OS Sebiş-Moneasa	3231	3231	0	0	31	*0*	*0*	*0*	*890*	0	1110	1200	0	0
6	Hălmăgel	5046	5046	646	400	30	0	0	0	*2500*	470	400	600	0	0
7	Pleşcuţa	3728	3728	250	300	50	28	0	0	*1300*	1000	300	500	0	0
8	Vârfurile	10127	7576	620	980	70	90	176	0	*2860*	940	*700*	920	120	100
	OS Codrii Iancului		16350	1516	1680	150	118	176	0	6660	2410	1400	2020	120	100
	Vârfurile Alte structuri		2551	140	100	20	40	32	0	1100	*220*	*400*	*419*	0	80
9	Dieci OS Codr.Zarandului	2921	2921	420	280	21	0	0	0	*500*	0	*720*	980	0	0
	Total ha	48610	48610	7416	3170	636	651	208	100	*10120*	4030	*8500*	13279	320	180
	%			15,25	6,52	1,31	1,34	0,43	0,21	*20,82*	8,29	*17,49*	27,32	0,66	0,36

The peculiarities of the soil cover in the studied area are determined by the natural conditions, by the factors and by the local pedogenetic processes that have manifested and are manifested in various ways in time and space.

In this sense, the implementation of agricultural technologies requires knowledge of the suitability of natural conditions to the expected crop system, in areas of ecological suitability for the main uses (agricultural or forestry) given the limitations that may determine some factors of the agricultural ecosystem, especially soil factors. which were the ground and land unitscharacterized according to the Romanian Soil Taxonomy System (SRTS-2012), and the Methodology for the Elaboration of Pedological Studies, using the 23 rating indicators, indicators that represent more important, significant, more precise and more easily measurable characters and properties, which they are usually found in the pedological mapping works, elaborated after 1987 by territorial OSPAs under the methodological guidance of ICPA Bucharest.

Table 4

Quality classes for the use category ARABIL (ha),
Hălmagiu-Gurahonţ-Almaş Depression

TERRITORIAL ADMINISTRATIVE UNIT (ATU)	Year of execution	Arable	Class I (81-100 points) Ha	Class a II (61-80 pct.) Ha	Class a III (41-60 pt.) Ha	Class and IV (21-40 points) ha	Class a Va (1-20 points) ha	Weighted average grade
1.Almaş	1974	2233	22	348	466	639	758	31
2.Brazii	1972	783	0	43	376	191	173	28
3.Dieci	1973	3169	0	271	593	1652	653	26
4. Gurahonţ	2003	2130	0	47	729	595	759	36
5.Hălmagiu	1981	1385	0	101	421	305	558	32
6.Hălmăgel	1981	939	0	26	419	264	230	29
7.Igneşti	1973	1114	0	90	444	398	182	39
8.Pleşcuţa	1977	576	0	14	290	167	105	43
9.Vârfurile	1981	1373	0	158	824	199	192	46
Total Ha		**13702**	**22**	**1098**	**4562**	**4410**	**3610**	
%			**0.16**	**8.01**	**33.29**	**32.19**	**26.35**	

Each of the indicators participates in establishing the rating rating by a coefficient that shows values between 1 (one) and 0 (zero) depending on the intensity of the limiting factor (1

= very favorable, 0 = unfavorable), for each use or culture there are tables comprising the respective coefficients (both for natural conditions and for potentiated conditions, according to the annexes from 3-2 to 3-29, MESP, 1987), finally establishing the quality of the lands by rating notes, from 1 to 100 .

Thus, based on the pedological information processed according to the Methodology for Elaboration of Pedological Studies (ICPABucureşti 1987) and other normative acts updated by Order MADR278 / 2011, the agricultural lands of the researched area can be grouped (from 20 to 20 points) in V quality classes in depending on their vocation for arable use (tab.4)

The lands with pastures occupy an area of 17765 ha (tab. 5), the classification in the five quality classes registering close values within the cadastral territories (tab. 5).

Table 5

Quality classes for the use category PASTURE (ha),
Hălmagiu-Gurahonţ-Almaş Depression

TERRITORIAL ADMINISTRATIVE UNIT (ATU)	Year of executio n	Pasture	Class I (81-100 points) Ha	Class a II (61-80 pct.) Ha	Class a III (41-60 pt.) Ha	Class and IV (21-40 points) ha	Class a Va (1-20 points) ha	Weighted average grade
1.Almaş	1974	2246	315	907	540	484	-	52
2.Brazii	1972	2765	180	594	1120	194	677	32
3.Dieci	1973	1532	54	732	620	106	20	51
4. Gurahonţ	2003	3350	275	794	1564	641	76	42
5.Hălmagiu	1981	1958	96	576	854	295	137	44
6.Hălmăgel	1981	1199	154	406	313	265	61	44
7.Igneşti	1973	514	57	164	291	2	0	44
8.Pleşcuţa	1977	2313	421	802	868	210	12	52
9.Vârfurile	1981	1888	189	918	735	28	18	54
Total Ha		**17765**	**1741**	**5893**	**6905**	**2225**	**1001**	
%			**9.80**	**33.18**	**38.87**	**12.52**	**5.63**	

Table 6

Situation of land with excess surface moisture and groundwater
Hălmagiu-Gurahonţ-Almaş Depression

Nr. crt.	UAT	Total Ha (agricultural)	of which land with:					
			excess surface moisture			excess groundwater		
			weak	moderate	strong; excessive	moderate	strong	very strong; excessive
1	Almaş	4698	890	385	53	465	280	-
2	Brazii	4131	434	186	-	-	21	20
3	Dieci	4831	2213	1805	410	565	420	110
4	Gurahonţ	6825	1965	1630	655	250	369	30
5	Hălmagiu	4164	419	481	77	42	50	245
6	Hălmăgel	2517	395	173	3	17	-	37
7	Igneşti	1725	143	600	-	18	-	29
8	Pleşcuţa	3822	185	247	-	38	-	75
9	Vârfurile	4738	706	57	-	236	-	90
	Total ha	**37451**	**3750**	**5564**	**1198**	**1631**	**1140**	**636**
%			**19.63**	**14.86**	**3.20**	**4.36**	**3.04**	**1.70**

The operation of classifying the agricultural lands in quality classes based on the rating notes highlighted a series of limiting factors that act on the production capacity of the agricultural lands, within the researched space, among which we mention: granulometric

composition (soil texture), reserve humus, soil reaction, degree of compaction or compactness, excess moisture, some of which are exemplified by the affected areas (tab.6-7), for which case, on a case-by-case basis, pedo-hydro-ameliorating measures are required (drying, drainage, deep loosening, etc.) to achieve a balanced aero-hydric regime and measures to promote the development of processes of concentration of nutrients and organic matter in the soil (ameliorating fertilizers,long-term crops with leguminous plants and perennial grasses, etc.).

Table 7

Situation of land affected by compaction and acidification
Hălmagiu-Gurahonţ-Almaş Depression

Nr. Crt.	UAT	Total Ha (agricultural)	of which land with:					
			settlement			acidified		
			weak	moderate	strong excess	weak	moderate	strong excess
1	Almaş	4698	940	1760	1442	1610	1876	932
2	Brazii	4131	103	1487	2375	2079	1315	365
3	Dieci	4831	400	1698	2130	1657	1863	980
4	Gurahonţ	6825	1010	3316	2149	1884	3242	1454
5	Hălmagiu	4164	837	752	1885	1493	1485	542
6	Hălmăgel	2517	784	329	647	694	495	328
7	Igneşti	1725	140	402	838	298	1087	190
8	Pleşcuţa	3822	765	1817	1071	1987	662	215
9	Vârfurile	4738	1147	592	673	2137	1052	194
	Total ha	**37451**	**6126**	**12153**	**13210**	**13839**	**13077**	**5200**
	%		**16.36**	**32.45**	**35.27**	**36.95**	**34.92**	**13.88**

All measures aimed at raising the quality of the soil will take into account the promotion of the processes that lead to the concentration of nutrients and organic matter. In order to prevent the physical degradation of the soil, it is necessary to minimize its preparation works, to carry out the agrotechnical works at the optimum humidity, as well as to ensure an adequate structure of the crops with ameliorating plants.

In terms of restoring the forest fund to the optimum potential level, it involves the conservation and improvement of normal structural and functional stands, ensuring them a management that prevents any kind of degradation.

It should also be noted that the diversity of species, the presence of valuable species and the diverse assortment of trees in the forests of the researched area make them an important material wealth in the county's economy, their value in terms of tourism and hunting potential being considerable.

Given the share of non-agricultural land and pedoclimatic conditions specific to the area, which allow the development of a rich and varied honey flora, we recommend improving the floristic composition with species such as Tylia tomentosa, T. cordata, Acer tataricum, Robinia spp., Salix spp. Etc.

CONCLUSIONS

The knowledge of the natural conditions and especially of the ecological potential of the lands for the main categories of use and cultures presents a special importance in carrying out the qualitative land evaluation works fact that justifies the necessity and actuality of the pedological mapping activity and periodic agrochemistry, as well as the need to respect the

periodicity of soil investigations at all points in the 8x8 Km grid of the National Soil-Field Monitoring System and to supplement it with pedological and agrochemical studies.

The systematic pedological and agrochemical mapping of soils carried out in our country provides valuable data on the evolution of soil quality, the establishment and differentiated application of cultivation technologies, land reclamation and establishing favorable for various crops. substantiation of land improvement works and improvement technologies, organization and systematization of the territory.

In this conception, the determination of the land production capacity as well as the substantiation of the technologies for their improvement can be for the decision maker (Government, Local Public Administration) an effective tool for choosing working procedures that favor an efficient use of land resources within the space researched in accordance with the specifics of the pedoclimatic conditions that allow the integration of the vegetal and the animal sector with the processing and sale of agri-food products being able to constitute an ecological and efficient solution for the future.

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