PHYSICAL AND CHEMICAL PROPERTIES OF THE MAIN SOILS IN THE MEHEDINTI COUNTY

PROPRIETĂȚILE FIZICE ŞI CHIMICE ALE UNOR SOLURI DIN JUDEȚUL MEHEDINȚI

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Abstract: *Knowing in detail yielding and technological features, favouring and restricting factors of agricultural production on each land portion both from the point of view of present response and of real possibilities of turning them into better ones can be, for the decision-maker a precious tool in achieving the most suited practical measures of producing plant biomass in a dynamics well correlated with environmental ecological requirements.*

Rezumat: *Cunoscând în detaliu însuşirile productive şi tehnologice, a factorilor favorizanți şi restrictivi sau limitativi ai producției agricole, a fiecărei porțiuni de teritoriu, atât sub aspectul actual de manifestare, cât şi sub aspectul posibilităților reale de modificare în bine ale acestora, poate constitui pentru decident ,un prețios instrument pentru realizarea celor mai corespunzătoare măsuri practice de producere a biomasei vegetale, într-o dinamică riguros corelată cu exigențele ecologice ale mediului înconjurător*

Key words: *soil, profile, characteristics*
Cuvinte cheie: *sol, profil, caracteristici*

INTRODUCTION

Soil plays many roles, as natural resource, as support and place for many activities, but what is the most important it is its role as main way of vegetal production.

MATERIAL AND METHOD

To make the assessment calculus we have chosen from the multitude of environmental conditions that characterise each land unit within the District of Mehedinți only those considered most important, easier and more accurate to measure, that could usually be found in soil study works, called assessment indices.

In assessing lands for natural conditions each of the indices mentioned except for index number 69 that intervenes directly participate in the establishing of assessment grade for an assessment coefficient that oscillates between 0 and 1, depending on the total unfavourableness or favourableness of the grade for the requirements of the use to take into account.

For each index depending on its scale and on its use or crop, we made up tables containing the values of the coefficients.

RESULTS AND DISCUSSION

Coarse sand has values oscillating between 42.0-46.3, the minimal value being in the Ao horizon, and maximal value being in the C horizon.

Fine sand has values that decrease from the soil surface to lower horizons, maximal value being in the Ao horizon.

Dust has values oscillating between 3.5 and 2.1.

The most important component part of the granulo-metrical fraction (clay) has the maximum value in the last horizon (C – 8,2), its value being lower in the first horizon (Ao – 6.6).

Table 1

Physical – chemical proprieties of the soil: Psamosoil

Horizon Depth of the horizon	UM cm	Ao 0-35	C 35-120
Coarse sand 2.0-0.2mm	%	42.0	46.3
Fine sand 0.2-0.02mm	%	47.9	43.4
Dust 0.02-0.002mm	%	3.5	2.1
Clay 0.002mm	%	6.6	8.2
Humus	%	0.58	0.31
I.N.	%	0.45	0.29
pH in H_2O	%	5.6	6.35
S.B.	me/100g	6.56	6.56
H. sch.	me/100g	1.80	0.42
T	me/100g	8.36	6.98
V	%	78.5	93.9
P mobile	ppm	23.6	17.1
K mobile	ppm	116	66

After having analysed and after having consulted the triangular diagramme of the texture we measured the texture of the psamosoil, which is a sandy-clayish texture, undifferentiated on the profile.

Soil reaction is with no significant differences whatsoever per profile, with values between 5.6-6.35.

The sum of changeable bases is low for the whole profile.

The humus percentage being 0.58-0.31, it shows a low content in humus in the soil.

Potassium (K) supply is low towards the lower horizon, having a value of 66.

Table 2

Physical – chemical proprieties of the soil: Chernozem

Horizon Depth of the horizon	UM cm	Am 0-51	AC 51-80	C 80-135
Coarse sand 2.0-0.2mm	%	15.5	9.1	9.9
Fine sand 0.2-0.02mm	%	49.5	55.8	54.8
Dust 0.02-0.002mm	%	17.1	17.1	16.3
Clay 0.002mm	%	17.9	18.0	19.0
Humus	%	2.11	1.33	1.20
I.N.	%	2.11	1.33	1.20
pH in H_2O	%	7.40	7.98	8.10
V	%	100	100	100
P mobile	ppm	62.6	81.3	23.8
K mobile	ppm	140	88	55

Coarse sand has values oscillating between 15.5-9.1, the maximal value being in the Ao horizon, and minimal value being in the AC horizon.

Fine sand has values that crease from the soil surface to lower horizons, maximal value being in the Ao horizon.

Dust has values oscillating between 17.1 and 16.3.

The most important component part of the granulo-metrical fraction (clay) has the maximum value in the last horizon (C – 19,0), its value being lower in the first horizon (Ao – 17.9).

After having analysed and after having consulted the triangular diagramme of the texture we measured the texture of the chernozem, which is a sandy-clayish texture, undifferentiated on the profile.

Soil reaction is with no significant differences whatsoever per profile, with values between 7,40-8,10.

The sum of changeable bases is low for the whole profile.

The humus percentage being 2,11-1,20, it shows a low content in humus in the soil.

Potassium (K) supply is low towards the lower horizon, having a value of 23,8.

Table 3

Physical – chemical proprieties of the soil: Preluvosoil

Horizon Depth of the horizon	UM cm	Ap 0-19	Ao 19-36	Bt_1 50-94	Bt_2 94-128	C 128-160
Coarse sand 2.0-0.2mm	%	10.5	6.5	8.5	8.0	**7.0**
Fine sand 0.2-0.02mm	%	58.1	56.1	55.1	58.7	59.8
Dust 0.02-0.002mm	%	11.8	13.2	13.6	12.7	14.2
Clay 0.002mm	%	19.6	24.2	22.8	20.6	19.0
Humus	%	1.16	6.92	4.24	2.35	1.24
I.N.	%	0.91	6.29	4.01	2.20	1.24
pH in H_2O	%	6.42	6.64	6.88	6.85	8.18
S.B.	me/100g	9.95	16.76	18.86	17.81	-
H.sch.	me/100g	2.70	1.65	1.07	1.15	-
T	me/100g	12.65	18.41	19.93	18.96	-
V	%	78.7	91.0	94.6	93.9	100
P mobile	ppm	8.0	6.6	22.0	12.7	19.5
K mobile	ppm	108	100	74.0	116	62

Coarse sand has values oscillating between 10.5-7.0, the maximal value being in the Ao horizon, and minimal value being in the C horizon.

Fine sand has values that crease from the soil surface to lower horizons, maximal value being in the C horizon.

Dust has values oscillating between 11.8 and 14.2.

The most important component part of the granulo-metrical fraction (clay) has the maximum value in the last horizon (C – 19,0), its value being lower in the first horizon (Ao – 19.6).

After having analysed and after having consulted the triangular diagramme of the texture we measured the texture of the chernozem, which is a sandy-clayish texture, undifferentiated on the profile.

Soil reaction is with no significant differences whatsoever per profile, with values between 6,42-8,18.

The sum of changeable bases is low for the whole profile.

The humus percentage being 1,16-1,24, it shows a low content in humus in the soil.

Potassium (K) supply is low towards the lower horizon, having a value of 62.

CONCLUSIONS

After calculating the note class for all cultures and plantations taken in consideration, there has been observed that the most fertile soils are typical chernozem and cambic chernozem.

From these studies valuable information result regarding the lands soil reconstruction for various uses, their characteristic localization and their surface stowing the sources-soil deposits for many reasons, especially for the enlargement of the arable surface and the placement of the different agricultural regions.

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