ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ

ΥΠΟΥΡΓΕΙΟ ΓΕΩΡΓΙΑΣ ΑΓΡΟΤΙΚΗΣ
ΑΝΑΠΤΥΞΗΣ ΚΑΙ ΠΕΡΙΒΑΛΛΟΝΤΟΣ

Τμήμα Γεωργίας

ΤΑ ΕΔΑΦΗ ΤΗΣ ΚΥΠΡΟΥ

THE SOILS OF CYPRUS

Εδαφολογικός χάρτης της Κύπρου βασισμένος στο αναθεωρημένο σύστημα ταξινόμησης που εξέδωσε ο Οργανισμός Τροφίμων και Γεωργίας (FAO).

ΛΕΥΚΩΣΙΑ – 2022

Σκοπός της παρούσας έκδοσης είναι η εκπόνηση εδαφολογικού χάρτη της Κύπρου, βασισμένου στο τελευταίο αναθεωρημένο σύστημα ταξινόμησης των εδαφών, που εξέδωσε ο Οργανισμός Τροφίμων και Γεωργίας (F.A.O). Η έκδοση αξιοποιεί επίσης τη διαθέσιμη εδαφολογική εργασία και τις χημικές αναλύσεις, που έχουν εκτελεστεί σε διάφορες περιόδους από το Τμήμα Γεωργίας. Η παρούσα έκδοση θα συμβάλει σημαντικά στην ενημέρωση κάθε ενδιαφερομένου σε θέματα ταξινόμησης και γνώσης των κυριοτέρων χαρακτηριστικών των αντιπροσωπευτικών εδαφών και θα εμπλουτίσει τη πληροφόρηση όσον αφορά τα εδάφη της Κύπρου.

Η παρούσα έκδοση ετοιμάστηκε από τους Κλάδους Χρήσης Γης και Ύδατος και Εργαστηριακών Αναλύσεων του Τμήματος Γεωργίας σε συνεργασία με τον Τομέα Τηλεπισκόπισης του Τμήματος Δασών και με τη συμβολή των κ. Λοΐζου Μαρκίδη και κ. Νίκου Σιαμαρία.

Πίνακας Περιεχομένων.

Γενικά

Εδαφολογικές Επισκοπήσεις στην Κύπρο.

Η συστηματική μελέτη για την ταξινόμηση των εδαφών στην Κύπρο άρχισε το 1957 με γενικές παρατηρήσεις και συγκέντρωση στοιχείων για τις φυσικές και χημικές ιδιότητες αυτών. Το πρώτο σύστημα ταξινόμησης που χρησιμοποιήθηκε λάμβανε υπόψη κυρίως την προέλευση, τον τρόπο σχηματισμού και τα γενικά χαρακτηριστικά των κυριότερων οριζόντων του εδάφους. Με βάση τα πιο πάνω, είχαν αναγνωρισθεί και ταξινομηθεί οι πιο κάτω κυριότερες ομάδες εδαφών.

α) Αυτόχθονα εδάφη
Σχηματίστηκαν επί τόπου, πάνω σε γεωλογικά στρώματα ή πετρώματα και έχουν φυσικά και χημικά χαρακτηριστικά των στρωμάτων αυτών. Γενικά έχουν περιορισμένο βάθος και μεγάλες κλίσεις.

β) Αλλουβιακά εδάφη
Εδάφη που προήλθαν από ποτάμιες εναποθέσεις και συναντώνται σε κοιλάδες και πεδιάδες. Έχουν διάφορα χημικά και φυσικά χαρακτηριστικά και είναι κυρίως εδάφη με μεγάλο βάθος και μικρές κλίσεις.

γ) Κολλουβιακά εδάφη
Σχηματίστηκαν από συσσωρεύσεις υλικών στα χαμηλότερα τμήματα των πλαγιών. Έχουν τα κυριότερα χαρακτηριστικά των πετρωμάτων, των εδαφών και γεωλογικών στρωμάτων από όπου προέρχονται. Έχουν ποικίλο βάθος και κλίσεις, περιέχουν δε πολλά χονδρόκοκκα υλικά και χαλίκια.

δ) Μεσογειακά κόκκινα εδάφη
Αυτά τα εδάφη σχηματίστηκαν σε συνάγματα ("fanglomerate" παλαιές ασβεστούχες εναποθέσεις, που περιέχουν πολλές πυριγενείς κροκάλες) καθώς επίσης και σε δευτερογενείς εναποθέσεις ασβεστούχων υλικών (χαβάρας). Συναντώνται κυρίως σε χαμηλά οροπέδια (plateau). Ορισμένα από τα εδάφη αυτά είναι πολύ ξέβαθα με ένα χαρακτηριστικό σκληρό ορίζοντα με την ονομασία "καυκάλλα", που σχηματίστηκε από την ανακρυστάλλωση του $CaCO_3$.

Η ταξινόμηση των εδαφών αυτών βασιζόταν στην εξέταση ορισμένων βασικών χαρακτηριστικών των οριζόντων A, B, C, D των εδαφοτομών και στη μελέτη των αποτελεσμάτων των χημικών αναλύσεων. Σε όλες τις πιο πάνω περιπτώσεις, για την ονομασία των εδαφών και τον διαχωρισμό σε διάφορες εδαφοσειρές δόθηκαν τοπικές ονομασίες της περιοχής ή των χωριών που έχουν εντοπιστεί.

Μετά την υιοθέτηση από τον Οργανισμό Τροφίμων και Γεωργίας (F.A.O) ενός νέου συστήματος ταξινόμησης των εδαφών για σκοπούς ομοιομορφίας, ο Κλάδος Εδαφολογίας και Θρέψης Φυτών άρχισε να εφαρμόζει το σύστημα αυτό από το 1970. Το σύστημα είχε σκοπό την ετοιμασία ενός διεθνούς εδαφολογικού χάρτη. Η ταξινόμηση των εδαφών στηρήχθηκε στη μελέτη των κύριων οριζόντων, που ονομάστηκαν διαγνωστικοί ορίζοντες. Γενικά το σύστημα έδωσε έμφαση στην ανάπτυξη και εξέλιξη των εδαφών. Το νέο

σύστημα είχε ως βάση τον τρόπο και τη μεθοδολογία ταξινόμησης των εδαφών που εφαρμόστηκε στις Η.Π.Α. Τούτο απλοποιήθηκε για να είναι πιο εύκολο στην εφαρμογή του, για την ετοιμασία του πιο πάνω εδαφολογικού χάρτη.

Με βάση το απλοποιημένο αυτό σύστημα της F.A.O αναγνωρίστηκαν στην Κύπρο οι εξείς διαγνωστικοί ορίζοντες των εδαφών: Mollic, Ochric, Argillic, Natric, Cambic, Calcic, και Gypsic. Με την περιγραφή και τη μελέτη των φυσικών και χημικών ιδιοτήτων αυτών των οριζόντων, έγινε ο διαχωρισμός των εδαφών σε ομάδες. Ο γενικός εδαφολογικός χάρτης της Κύπρου, που εκπονήθηκε από τον Κλάδο Εδαφολογίας το 1970, βασίστηκε στο σύστημα αυτό.

Το 1998 έγινε αναθεώρηση του συστήματος αυτού (WORLD REFERENCE BASE FOR SOIL RESOURCES, 1998) και πέραν από τους διαγνωστικούς ορίζοντες, λήφθηκαν υπόψη ορισμένες ιδιότητες και χαρακτηριστικά των εδαφών. Η αναθεώρηση αυτή έδωσε και τη δυνατότητα να ταξινομούνται τα εδάφη σε ομάδες και υποομάδες. Με τον τρόπο αυτό παρεχόταν η δυνατότητα ώστε βασικά κριτήρια να καταγράφονται κατά προτεραιότητα και να καθιερώνεται ένα σύστημα χαρτογράφησης χωρίς τοπικές ονομασίες.

Με το νέο αυτό σύστημα ταξινόμησης των εδαφών του 1998 ετοιμάστηκε ένας εδαφολογικός χάρτης της Κύπρου σε ψηφιακή μορφή και το 2000 εκτυπώθηκε σε κλίμακα 1:250000. Για να γίνει κατορθωτό αυτό καταβλήθηκε προσπάθεια να μετατραπούν και να προσαρμοστούν, κατά το δυνατό, όλα τα στοιχεία και περιγραφές των προηγούμενων εδαφοσειρών στο νέο σύστημα. Τα κενά, που παρουσιάστηκαν στις περιοχές που δεν είχαν γίνει εδαφολογικές επισκοπήσεις, συμπληρώθηκαν σε κάποιο βαθμό με φωτοερμηνεία ή με επί τόπου παρατηρήσεις. Στις κατεχόμενες από τον Τουρκικό στρατό περιοχές έγινε επέκταση των στοιχείων παρακείμενων περιοχών με τα ίδια χαρακτηριστικά γνωρίσματα, όπου υπήρχαν.

Κατά την μετατροπή παρουσιάστηκαν πολλές δυσκολίες λόγω της πολυμορφίας των εδαφών, της μικρής έκτασης αυτών και του περιορισμένου αριθμού εδαφικών στοιχείων σε διάφορες περιοχές. Για τους λόγους αυτούς έγιναν δυο μεγάλες ομάδες ταξινόμησης που περιλάμβαναν τα επικρατέστερα εδάφη (DOMINANT SOILS) και τα συνυπάρχοντα εδάφη (ASSOCIATED SOILS) όπως αυτό φαίνεται στο υπόμνημα του εδαφολογικού χάρτη.

Η ψηφιακή αποτύπωση όλων αυτών των στοιχείων παρέχει τη δυνατότητα συμπλήρωσης, αλλαγής, διόρθωσης και εκτύπωσης σε διαφορετική κλίμακα ενός νέου και αναθεωρημένου εδαφολογικού χάρτη, όταν τούτο χρειαστεί.

The Status of Soil Mapping in Cyprus

In Cyprus, systematic soil studies classification started in 1957, aiming at collecting information and data about the physical and chemical properties of soils. The first soil classification system used, was based mainly upon the formation, the origin and the parent material of the soils. Accordingly, soils were classified mostly as Red soils, Sedentary and Alluvial or Colluvial soils. An examination of some characteristics, including soil physical and chemical analyses, were carried out in order to classify the soils of these groups into series using local names.

a. **Sedentary soils** were classified into soil series according to the type of parent material which constituted the D horizons. Soil series have in many cases the same names with the geological formations or local names.

b. **Alluvial or Colluvial soils** were classified into soil series according to their origin and their physical and chemical properties. Local names have also been used for soil series.

c. In general **Red soils** have been classified into soil series according to the accumulation of calcareous material (havara), or the formation of hard crust (kafkalla). They were usually developed on the fanglomerate of the plateau.

In 1970 the soil classification system, elaborated by the FAO (UNESCO) was introduced. Through this system, a new effort was undertaken to establish a common international language in soil classification. Within the framework of the preparation of the soil map of the world, a system of soil horizons has been adopted. Soil horizons, which are used for identifying soil units, are called diagnostic horizons. The definitions used in this system, are drawn from those, adopted in the soil taxonomy of the U.S Department of agriculture 1975. The definition of these horizons have been summarized and sometimes simplified, in accordance with the requirements of the FAO/UNESCO legend for the soil map of the world.

As a result of our observations and soil studies, the following diagnostic horizons from the FAO system have been adopted: Mollic, Ochric, Agrillic, Natric, Cambic, Calcic and Gypsic. In order to separate soil units, some diagnostic properties from FAO (UNESCO) system are used and a number of soil **Orders** and **sub-Orders** have been recognized, corresponding to the following general definition:

1. **Lithosols** – Soils which are limited in depth by continuous coherent and hard Rock within 10 cm of the surface. Lithosols are divided into sub-Orders Calcaric and Eutric.

2. **Fluvisols** – Soils from recent alluvial deposits, having no diagnostic horizons other than Ochric A or histic H horizon.

3. **Regosols** – Soils from unconsolidated material, having no diagnostic horizons other than on ochric A horizon. Regosols and Fluvisols have been divided into calcaric and eutric sub- orders.

4. **Rendzinas**- Soils having a mollic horizon immediately overlying extremely calcareous material.

5. **Solonchanks**- Soils having high salinity within 125 cm of the surface (EC>15 mmhos). These have been separated into Gleyic and Orthic Solonchaks.

6. **Solonetz –** Soils having a natric B horizon.

7. **Vertisols-** They have 40 per cent or more clay in all horizons, developing wide cracks from the soil surface downwards. Furthermore, they have slickensides and unfavourable physical properties.

8. **Cambisols –** These soils have a cambic B horizon and no other diagnostic Horizon than an ochric or an umbric a horizon, a calcic or a gypsic horizon. Soils classified into cambisols, occupy extensive areas and are subdivided into the Following sub- Orders: Vertic, Calcaric, Calcic, Chromic Combisols.

9. **Luvisols –** These soils have an argillic B horizon and they are subdivided into:
   Vertic, Calcic, Chromic Luvisols.

The General soil Map of Cyprus elaborated by Soil Section in 1970, was based on the former classification system. The FAO classification system was used, each time revised and improved in process of the soil mapping.

In 1998 a new revision was adjusted (WORLD REFERENCE BASE FOR SOIL RESOURCES) aiming at the preparation of a new soil map. In this system the diagnostic horizons, properties and materials are used, giving the possibilities for priorities and combinations of the additional characteristics of field identifications. In this way the local names have been avoided.

In 2000 an effort was undertaken so that the soil mapping carried out by soil section, based on the previous classifications to be adjusted to the FAO (WORLD REFERENCE BASE FOR SOIL RESOURCES).Since 1974, after the Turkish invasion, soil survey has been carried out in the Government control areas of the Republic of Cyprus. Concerning the areas not having been soil-surveyed by any means, other methods have been used such as extrapolation, photo- interpretation as well as revision of the general soil map of Cyprus.

The difficulties envisaged for adaptation lie mainly on the following factors:
Small areas with different soils, mountainous areas as well as the limited number of Soil data and soil description. For overleaping of these difficulties the terminology of DOMINANAT and ASSOCIATED SOIL GROUPS are used, as they are presented on the legend of soil map.
Based on the above, a new soil map of Cyprus was prepared in digital form, with the cooperation of Natural- Resource Information and Remote Sensing

Center of the Forestry Department (N.R.I.R.S.C). As it has been mentioned previously, all data of soil survey, soil maps as well as the typing of all results of analyses, have been done from soil section colleagues.
The chemical determinations were carried out in the chemical laboratory of the Department of Agriculture.

The electronic production of the map was carried out with cooperation of the personnel of N.R.I.R.S.C of the Forestry Department and the maps have been printed by Land and Surveys Department.

Βοηθητικές Επεξηγήσεις

α. Εδαφολογικός χάρτης της Κύπρου

Ο εδαφολογικός χάρτης της Κύπρου σε μικρή κλίμακα επισυνάπτεται με τους αριθμούς των εδαφοτομών στο Παράρτημα ΙΙ.
Κατάλογος με τους αριθμούς αυτούς, που αντιστοιχούν στους αριθμούς των εδαφοτομών στις φωτογραφίες, δίδεται στο Παράρτημα Ι.

β. Το υπόμνημα του εδαφολογικού χάρτη

Το υπόμνημα που ακολουθεί περιλαμβάνει τις επικρατέστερες και συνυπάρχουσες ομάδες εδαφών καθώς επίσης με τις διορθώσεις των κυριοτέρων παροραμάτων.

γ. Τα κυριότερα χαρακτηριστικά των εδαφών

Δίνεται ένας γενικός κατάλογος των κυριοτέρων χημικών και φυσικών χαρακτηριστικών των εδαφών για συνοπτική εικόνα.

Explanatory Information

a. The Soil map of Cyprus

A soil map of Cyprus at a small scale is given in Annex II in order to help locate the approximate position of soil profiles. A list of numbers, corresponding to the numbers of the photos provided, is also included in Annex I.

b. The legend of the Soil map

The legend with the dominant Soil Groups and associated Soil Groups is given below. The main paroramata have been corrected accordingly.

c. The main characteristics of the soils

A list of main chemical and physical characteristics and data is presented in order to give a general picture of the soils.

ΥΠΟΜΝΗΜΑ / LEGEND			
ΕΠΙΚΡΑΤΟΥΣΕΣ ΟΜΑΔΕΣ ΕΔΑΦΩΝ / DOMINANT SOIL GROUPS			**ΣΧΕΤΙΖΟΜΕΝΕΣ ΟΜΑΔΕΣ ΕΔΑΦΩΝ / ASSOCIATED SOIL GROUPS**
1a	LP.li.eu RG. sk.eu	eutric -lithic - LEPTOSOLS eutric -skeletic - REGOSOLS	(CM. le. cr) chromic - leptic - CAMBISOLS
1b	CM.eu RG.ah.eu	eutric -CAMBISOLS eutric - anthropic - REGOSOLS	(CM.vr. eu) eutric - vertic - CAMBISOLS (RG.sk.eu) eutric – skeletic- REGOSOLS
2a	LP.li CL.ptp	lithic - LEPTOSOLS epipetric - CALCISOLS	(RG. ca) calcaric REGOSOLS
2b	LP.li.ca RG.le.ca	calcaric -lithic - LEPTOSOLS calcaric - leptic - REGOSOLS	(GM. ca) calcaric - CAMBISOLS
3a	CL.ptp LV.cr.le	epipetric - CALCISOLS leptic -chromic - LUVISOLS	(CA.le. cr) chromic -leptic - CAMBISOLS
3b	LV.cc LV.vr.cr	calcic - LUVISOLS chromic - vertic - LUVISOLS	(CM. le.cr) chromic -leptic - CAMBISOLS
4a	RG.ca.sk LP.li.ca	skeletic - calcaric - REGOSOLS calcaric - lithic - LEPTOSOLS	(RG.le.ca) calcaric - leptic - REGOSOLS (LP.rz.ca) calcaric -rendzic - LEPTOSOLS
4b	LP.rz.ca CM.le.ca	calcaric - rendzic - LEPTOSOLS calcaric- leptic - CAMBISOLS	(RG.ah.ca) calcaric - anthropic- REGOSOLS (RG.ca.sk) sleletic - calcaric - REGOSOLS

ΥΠΟΜΝΗΜΑ / LEGEND			
ΕΠΙΚΡΑΤΟΥΣΕΣ ΟΜΑΔΕΣ ΕΔΑΦΩΝ / DOMINANT SOIL GROUPS			**ΣΧΕΤΙΖΟΜΕΝΕΣ ΟΜΑΔΕΣ ΕΔΑΦΩΝ / ASSOCIATED SOIL GROUPS**
5	RG.le.ca LP.li	calcaric- leptic - REGOSOLS lithic - LEPTOSOLS	(CM. vr) vertic - CAMBISOLS
5a	CM.vr.cr RG.ca	chromic -vertic - CAMBISOLS calcaric - REGOSOLS	(LP. li.ca) calcaric - lithic - LEPTOSOLS
6a	CM.fv.ca CM.vr	calcaric- fluvic - CAMBISOLS vertic - CAMBISOLS	(RG. ca) calcaric - REGOSOLS
6b	CM.ca RG.ca	calcaric - CAMBISOLS calcaric - REGOSOLS	(CM.cr.ca)calcaric -chromic - CAMBISOLS (LP.rz. ca) calcaric -rendzic - LEPTOSOLS
7	CM.vr LV.cc.cr	vertic - CAMBISOLS chromic - calcic - LUVISOLS	(CM.fv.ca) calcaric -fluvic - CAMBISOLS
7a	VR.cr CM.vr.ch	chromic - VERTISOLS chromic -Vertic - CAMBISOLS	(RG. ca) calcaric - REGOSOLS
8	LP.li.ca LP.rz.ml	calcaric - lithic - LEPTOSOLS mollic - rendzic - LEPTOSOL	(CL.ptp.sk) skeletic -epipetric - CALCISOLS
10	SC.gl	gleyic - SOLONCHAKS	(SN.gl) gleyic -SOLONETS
11a	RG.sk	skeletic - REGOSOLS	(CM.vr.cr) chromic - vertic - CAMBISOLS

ΥΠΟΜΝΗΜΑ / LEGEND			
ΕΠΙΚΡΑΤΟΥΣΕΣ ΟΜΑΔΕΣ ΕΔΑΦΩΝ / DOMINANT SOIL GROUPS			**ΣΧΕΤΙΖΟΜΕΝΕΣ ΟΜΑΔΕΣ ΕΔΑΦΩΝ / ASSOCIATED SOIL GROUPS**
11b	VR.eu VR.cr	eutric - VERTISOLS chromic - VERTISOLS	(RG.le.sk) skeletic - leptic - REGOSOLS
12	RG.gp GY.le	gypsiric - REGOSOLS leptic - GYPSISOLS	(LP.li. gy) gypsiric - lithic - LEPTOSOLS

Soil data of soil groups in general form.

					Mechanical analysis								Exch. Cations meg./100g Soil	
		Clay Mineralogy		Depth in cm	Clay % 5 ±	Silt % 5 ±	M.C. Sand % 5 ±	F. Sand % 5 ±	pH 0.3 ±	CaCO3 % 10 ±	Organic Matter %	C.E.C. meg./100g soil -(0-10)	Ca -5	K
LEPTOSOLS														
eutric -	lithic	LP	**Montmorillonite**	>60	0 - 4	13	32	36	18	7,2	nil	4,0	25	22	0,3
			Vermiculite	20-60%	4 - 10	18	29	38	15	7,3	nil	1,5	23	20	0,1
			Chlorite	0-20%											
calcaric -	lithic	LP	**Beidellite**	>60	0 - 10	32	35	14	19	8,4	68	0,7	31	28	0,28
			Montmorillonite	20-25%											
			Koalinite-Calcite	5-20%											
calcanic	rendzic	LP	**Montmorillonite)**		0 - 12	36	38	8	18	8,5	62	2,0	38	33	1,5
			Chlorite)	20-60%	12 - 25	40	35	6	19	8,6	68	0,8	37	34	1,0
			Kaolinite)												
			Calcite)	5-10%											
	rendzic	LP	**Montmorillonite)**		0 - 05	27	33	28	12	8,1	23	4,0	30	25	0,8
			Chlorite)	20-60%	5 - 25	46	28	17	9	8,3	17	1,0	28	23	0,09
			Kaolinite)												
	lithic	LP	**Calcite)**	5-20%											

Soil data of soil groups in general form.

			Clay Mineralogy		Mechanical analysis									Exch. Cations meg./100g Soil	
					Depth in cm	Clay % 5 ±	Silt % 5 ±	M.C. Sand % 5 ±	F. Sand % 5 ±	pH 0.3 ±	CaCO3 % 10 ±	Organic Matter %	C.E.C. meg./100g soil -(0-10)	Ca -5	K
VERTISOLS			**Montmorillonite**	**>60%**	**0 - 12**	**32**	**23**	**11**	**34**	**8,3**	**14**	**0,5**	**38**	**32**	**0,6**
eutric	chromic	**VR**	**Chlorite, Illite**	**05-10%**	**0 - 15**	**51**	**22**	**12**	**14**	**8,1**	**3**	**1,8**	**39**	**32**	**0,9**
					15 - 50	**62**	**21**	**9**	**10**	**8,3**	**4**	**0,5**	**40**	**35**	**0,6**
					50 - 120	**60**	**23**	**8**	**9**	**8,3**	**4**	**0,5**	**47**	**36**	**0,5**
	chromic	**VR**	**Montmorillonite**	**>60%**	**0 - 25**	**43**	**31**	**14**	**12**	**8,4**	**6**	**0,8**	**26**	**18**	**0,5**
			Chlorite	**20-60%**	**25 - 75**	**48**	**33**	**9**	**10**	**8,6**	**3**	**0,3**	**28**	**14**	**0,5**
	calcaric	**VR**	**Montmorillonite**	**>60%**	**0 - 30**	**42**	**36**	**6**	**14**	**8,4**	**25**	**1,0**	**40**	**32**	**0,9**
					30 - 60	**50**	**30**	**3**	**16**	**8,5**	**28**	**0,8**	**43**	**38**	**0,5**
					60 - 120	**47**	**29**	**6**	**17**	**8,5**	**27**	**0,5**	**45**	**37**	**0,6**
FLUVISOLS					**0 - 25**	**34**	**32**	**4**	**30**	**8,2**	**33**	**1,5**	**22**	**10**	**0,9**
	calcaric	**FL**			**25 - 60**	**26**	**37**	**3**	**34**	**8,4**	**38**	**0,9**	**20**	**11**	**0,6**
					60 - 120	**25**	**36**	**6**	**33**	**8,5**	**30**	**0,2**	**17**	**8**	**0,3**
SOLONCHAKS			**Beidellite**	**>60%**	**0 - 20**	**28**	**25**	**10**	**37**	**8,5**	**34**	**8,0**	**55**	**22**	**2,5**
	gleyic	**SC**	**Illite-Kaolinite**	**5-20%**	**20 - 50**	**33**	**28**	**4**	**36**	**8,3**	**36**	**6,0**	**58**	**26**	**1,5**
					50 - 120	**30**	**32**	**3**	**35**	**8,2**	**38**	**6,0**	**58**	**22**	**0,7**
SOLONETZ					**0 - 30**	**28**	**39**	**8**	**24**	**8,2**	**45**	**10,0**	**50**	**22**	**1,5**
	gleyic	**SN**			**30 - 60**	**42**	**36**	**6**	**15**	**8,5**	**52**	**6,0**	**58**	**28**	**1,8**
					60 - 120	**42**	**34**	**6**	**17**	**8,4**	**53**	**2,0**	**53**	**18**	**1,6**
GYPSISOLS					**0 - 30**	**36**	**28**	**4**	**32**	**8,4**	**48**	**1,5**	**32**	**25**	**0,8**
	leptic	**GY**			**30 - 75**	**42**	**34**	**8**	**15**	**8,6**	**52**	**1,0**	**48**	**28**	**0,5**

Soil data of soil groups in general form.

			Clay Mineralogy		Mechanical analysis									Exch. Cations meg./100g Soil	
					Depth in cm	Clay % 5 ±	Silt % 5 ±	M.C. Sand % 5 ±	F. Sand % 5 ±	pH 0.3 ±	CaCO3 % 10 ±	Organic Matter %	C.E.C. meg./100g soil -(0-10)	Ca -5	K
CALCISOLS			**Illite**	**20-60%**	**0 - 20**	**38**	**16**	**14**	**27**	**8,3**	**18**	**1,5**	**32**	**26**	**1,2**
	epipetric	**CL**	**Montmorillonite**	**5- 20%**	**20 - 45**	**45**	**25**	**10**	**20**	**8,4**	**24**	**0,5**	**34**	**28**	**0,8**
LUVISOLS			**Illite**	**>60%**	**0 - 20**	**37**	**30**	**8**	**25**	**8,3**	**14**	**1,5**	**43**	**36**	**1,5**
leptic	chromic	**LV**	**Montmorillonite)**		**20 - 45**	**48**	**24**	**8**	**20**	**8,4**	**18**	**0,8**	**41**	**32**	**0,8**
			Kaolinite	**(5-20%**											
			Calcite	**) < 5%**											
chromic	vertic	**LV**			**0 - 35**	**40**	**26**	**8**	**24**	**8,2**	**4**	**1,5**	**38**	**32**	**1,5**
					35 - 70	**55**	**20**	**6**	**18**	**8,4**	**6**	**0,8**	**42**	**37**	**0,8**
					70 - 120	**54**	**22**	**8**	**16**	**8,4**	**10**	**0,5**	**33**	**26**	**0,8**
	calcic	**LV**	**Beidellite**	**>60%**	**0 - 25**	**36**	**32**	**12**	**20**	**8,4**	**12**	**1,5**	**40**	**34**	**1,0**
			Montmorillonite	**5%**	**25 - 60**	**48**	**25**	**8**	**18**	**8,3**	**15**	**0,7**	**37**	**32**	**0,8**
			Illite-Kaolinite	**5-20%**	**60 - 70**					**8,6**	**65**				

Soil data of soil groups in general form.

					Mechanical analysis									Exch. Cations meg./100g Soil	
			Clay Mineralogy		Depth in cm	Clay % 5 ±	Silt % 5 ±	M.C. Sand % 5 ±	F. Sand % 5 ±	pH 0.3 ±	CaCO3 % 10 ±	Organic Matter %	C.E.C. meg./100g soil -(0-10)	Ca -5	K
CAMBISOLS			**Beidellite**	**>60%**	**0 - 10**	**15**	**32**	**38**	**14**	**6,2**	**Nil**	**15,0**	**36**	**29,0**	**0,6**
chromic	leptic	**CM**	**Illite-kaolinite**	**20-60%**	**10 - 30**	**17**	**36**	**30**	**13**	**6,5**	**Nil**	**4,0**	**27**	**18**	**0,4**
					30 - 70	**18**	**34**	**36**	**12**	**6,8**	**Nil**	**1,5**	**22**	**17**	**0,4**
	calcaric	**CM**	**Montmorillonite**	**>60%**	**0 - 25**	**18**	**24**	**8**	**50**	**8,2**	**12**	**0,8**	**42**	**38**	**0,5**
			Chlorite	**20-60%**	**25 - 60**	**22**	**18**	**11**	**48**	**8,3**	**16**	**0,5**	**44**	**40**	**0,3**
			Kaolinite	**5-20%**	**60 - 120**	**16**	**20**	**12**	**52**	**8,6**	**14**	**0,5**	**43**	**38**	**0,2**
			Calcite	**< 5%**											
	eutric	**CM**	**Montmorillonite**	**>60%**	**0 - 10**	**17**	**24**	**32**	**27**	**7,5**	**Nil**	**1,8**	**31**	**15**	**1,5**
			Vermiculite	**20-60%**	**10 - 35**	**18**	**19**	**40**	**23**	**7,6**	**Nil**	**1,0**	**25**	**9**	**0,8**
			Chlorite	**5-20%**	**35 - 75**	**22**	**25**	**41**	**22**	**7,6**	**Nil**	**0,6**	**28**	**14**	**0,5**
					75 - 120	**22**	**26**	**29**	**23**	**7,4**	**Nil**	**0,4**	**20**	**15**	**0,5**
eutric	vertic	**CM**	**Montmorillonite**	**>60%**	**0 - 30**	**48**	**38**	**7**	**8**	**7,5**	**Nil**	**1,5**	**32**	**26**	**0,6**
			Vermiculite	**20-60%**	**30 - 75**	**45**	**45**	**6**	**7**	**8,2**	**2,2**	**0,8**	**29**	**20**	**0,7**
			Chlorite	**5-20%**	**75 - 120**	**60**	**30**	**4**	**6**	**7,8**	**Nil**	**0,5**	**33**	**25**	**0,5**
calcaric	leptic	**CM**	**Beidellite**	**>60%**	**0 - 30**	**36**	**42**	**8**	**14**	**8,5**	**63**	**0,1**	**39**	**32**	**0,1**
			Montmorillonite	**5-20%**	**30 - 75**	**38**	**40**	**6**	**16**	**8,7**	**65**	**0,5**	**43**	**38**	**0,3**
			Kaolinite, Calcite	**< 5%**											
chromic	vertic	**CM**	**Montmorillonite**	**>60%**	**0 - 30**	**49**	**29**	**7**	**15**	**8,1**	**19**	**1,5**	**31**	**22**	**1,4**
			Chlorite-Illite	**5-20%**	**30 - 65**	**56**	**25**	**5**	**14**	**8,2**	**20**	**0,9**	**29**	**21**	**1,3**
					65 - 120	**65**	**21**	**9**	**5**	**8,1**	**12**	**0,5**	**37**	**29**	**1,2**

Soil data of soil groups in general form.

			Clay Mineralogy		Mechanical analysis									Exch. Cations meg./100g Soil	
					Depth in cm	Clay % 5 ±	Silt % 5 ±	M.C. Sand % 5 ±	F. Sand % 5 ±	pH 0.3 ±	CaCO3 % 10 ±	Organic Matter %	C.E.C. meg./100g soil -(0-10)	Ca -5	K
CAMBISOLS															
calcaric	fluvic	**CM**	**Beidellite**	**>60%**	**0 - 25**	**35**	**37**	**2**	**26**	**8,1**	**43**	**1,2**	**19**	**15**	**1,1**
			Illite-chloride	**< 5%**	**25 - 64**	**40**	**36**	**2**	**22**	**8,2**	**45**	**0,7**	**23**	**17**	**1,0**
					64 - 120	**34**	**34**	**2**	**20**	**8,2**	**42**	**0,4**	**21**	**14**	**0,5**
calcaric	chromic	**CM**	**Montmorillonite**	**>60%**	**0 - 25**	**25**	**44**	**22**	**9**	**8,1**	**70**	**1,0**	**25**	**23**	**0,6**
			chlorite	**10-20%**	**25 - 60**	**26**	**41**	**29**	**4**	**8,0**	**69**	**0,6**	**26**	**23**	**0,6**
					60 - 85	**36**	**37**	**29**	**3**	**8,3**	**68**	**0,3**	**28**	**25**	**0,4**
					85 - 120	**37**	**35**	**26**	**2**	**8,4**	**64**	**0,3**	**28**	**26**	**0,3**
vertic	leptic	**CM**	**Montmorillonite**	**>60%**	**0 - 15**	**32**	**41**	**11**	**15**	**8,6**	**4**	**0,8**	**39**	**34**	**0,3**
			chlorite-Illite	**5-10%**	**15 - 35**	**36**	**45**	**6**	**12**	**8,4**	**Nil**	**0,3**	**34**	**29**	**0,1**
REGOSOLS			**Montmorillonite**	**>60%**	**0 - 25**	**20**	**22**	**16**	**41**	**8,0**	**0,3**	**1,5**	**26**	**13**	**0,3**
eutric	skeletic	**RG**	**Chlorite**	**5-20%**	**25 - 60**	**18**	**37**	**18**	**27**	**7,6**	**Nil**	**0,6**	**24**	**11**	**0,1**
					60 - 100	**10**	**35**	**28**	**26**	**7,7**	**Nil**	**0,2**	**33**	**15**	**0,2**
	calcaric	**RG**	**Montmorillonite**	**>60%**	**0 - 30**	**13**	**25**	**33**	**29**	**8,3**	**35**	**0,9**	**45**	**41**	**0,9**
			Chlorite	**20-60%**	**30 - 65**	**17**	**23**	**32**	**28**	**8,6**	**37**	**0,5**	**46**	**45**	**0,5**
			Kaolinite-Calcite	**5-20%**	**65 - 100**	**21**	**26**	**28**	**23**	**8,8**	**42**	**0,4**	**49**	**46**	**0,7**
	gypsiric	**RG**			**0 - 25**	**33**	**30**	**13**	**18**	**7,8**	**48**	**0,8**	**35**	**30**	**0,5**
					25 - 50	**30**	**42**	**10**	**12**	**7,6**	**49**	**0,2**	**41**	**33**	**0,5**

Soil data of soil groups in general form.

			Clay Mineralogy		Mechanical analysis								C.E.C. meg./100g soil	Exch. Cations meg./100g Soil	
					Depth in cm	Clay %	Silt %	M.C. Sand %	F. Sand %	pH	CaCO3 %	Organic Matter		Ca	K
						5 ±	5 ±	5 ±	5 ±	0.3 ±	10 ±	%	-(0-10)	-5	
REGOSOLS															
calcaric	leptic	**RG**	**Montmorillonite**	**>60%**	**0 - 30**	**22**	**21**	**30**	**27**	**9,0**	**31**	**0,5**	**52**	**49**	**0,4**
			Chlorite	**20-60%**	**30 - 75**	**18**	**22**	**33**	**27**	**8,8**	**37**	**0,2**	**56**	**52**	**0,3**
			Kaolinite-Calcite	**5-20%**											
skeletic	calcaric	**RG**			**0 - 25**	**28**	**41**	**12**	**15**	**8,4**	**69**	**1,3**	**36**	**27**	**0,7**
					25 - 60	**27**	**43**	**13**	**17**	**8,6**	**73**	**0,5**	**32**	**26**	**0,6**
					60 - 110	**30**	**40**	**12**	**18**	**8,7**	**75**	**0,3**	**31**	**23**	**0,4**
xertic	leptic	**RG**	**Montmorillonite**	**>60%**	**0 - 35**	**40**	**24**	**16**	**20**	**8,2**	**5**	**0,5**	**29**	**27**	**0,6**
			Vermiculite)		**35 - 70**	**43**	**27**	**16**	**13**	**8,0**	**3**	**0,2**	**34**	**28**	**0,9**
			Chlorite	**20-60%**											

Key to the reference soil groups.

For describing and defining the reference soil groups of the World Reference Base for Soil Resources, use is made for soil characteristics, properties and horizons which are combined to define soils and their relationships.

Soil characteristics are single parameters which are observable or measurable in the field or laboratory, or can be analyzed using microscope techniques. They include such characteristics as color, texture and structure of the soil, features of biological activity, arrangement of voids and pedogenic concentrations (mottles, cutans, nodules, etc.) as well as analytical determations (soil reaction, particle-size distribution, cation exchange capacity, exchange cations, amount and nature of soluble salts, etc.).

Soil properties are combinations (assemblages) of soil characteristics which are known to occur in soils and which are considered to be indicative of present or past soil-forming prosses (e.g. vertic properties, which are a combination of heavy texture, smectitic mineralogy, slickenside, hard consistence when dry, sticky when wet, shrinking when dry and swelling when wet).

Soil horizons are three-dimensional pedologigal bodies which are more or less parallel to the earth's surface. Each horizon contains one or more property, occurring over a certain depth, which characterizes it. The thickness varies from a few centimeter to several meters; most commonly it is about a few decimeters. The upper and lower limits (boundaries) are gradual, clear or abrupt. Laterally, the extension of soil horizon varies greatly, from a meter to several kilometers. However, a soil horizon is never infinite. Laterally, it disappears or grades into another horizon.

Soils are defined by the vertical combination of horizons, occurring within a defined depth, and by the lateral organization (sequence) of the soil horizons, or by the lack of them, at a scale reflecting the relief or a land unit.

In Cyprus the followings Soil Groups were recognized and mapped.

1. LEPTOSOLS (LP)
2. VERTISOLS (VR)
3. FLUVISOLS (FL)
4. SOLONCHAKS (SC)
5. GLEYSOLS (GL)
6. CALCISOLS (CL)
7. LUVISOLS (LV)
8. CAMBISOLS (CM)
9. REGOSOLS (RG)

Diagnostic horizons, properties and materials

Soil horizons, properties and materials are intended to reflect features which are widely recognized as occurring in soils and which can be used to describe and define soil classes. They are considered to be diagnostic when they reach a minimum degree of expression, which is determined by appearance, measurability, importance,

relevance and quantitative criteria. To be considered diagnostic, soil horizons also require a minimum thickness, which must be appraised in relation to bioclimatic factors (e.g. an albic horizon in boreal regions is not expected to be as thick as one in the tropics).

The diagnostic horizons, properties and materials are described, where possible, giving a general description, the diagnostic criteria, possibilities for field identification and additional characteristics. Some relationships with other important diagnostic horizons are also given.

The cation exchange capacity (CEC), used as a criterion in the definition of diagnostic horizons or properties as well as in the key to the reference soil groups, is essentially meant to reflect the nature of mineral component of the exchange complex.

Diagnostic horizons

For WRB purposes the diagnostic horizons, defined in Revised Legend (FAO, 1988), have been used as a basis, with the exception of the firmic horizon which has not been retained. New ones are introduced, such as andic anthropedogenic ferric.

Argic horizon

General description. The argic horizon (from L. Argilla, white clay) is a subsurface horizon which has distinctly higher clay content than the overlying horizon. The textural differentiation may be caused by an illuvial accumulation of clay, by predominant pedogenetic formation of clay in the subsoil or destruction of clay in the surface horizon, by selective surface erosion of clay, by biological activity, or by a combination of two or more of these different processes. Sedimentation of surface materials which are coarser than the subsurface horizon may enhance a pedogenetic textural differentiation. However, a mere lithological discontinuity, such as may occur in alluvial deposits, does not qualify as an argic horizon.

Diagnostic criteria. An argic horizon must have:

1. texture of sandy loam or finer and at least 8 percent clay in the fine earth fraction and
2. more total clay than an overlying coarser textured horizon (exclusive of differences which result from a lithological discontinuity only) such that:

Calcic horizon

General description. The calcic horizon (from L. Calx, lime) is a horizon which secondary calcium carbonate ($CaCO_3$) has accumulated either in a **diffuse form** (Calcium carbonate present only in the form of fine perticles of 1 mm or less, dispersed in the matrix) or as **discontinuous concentrations** (pseudomycelia, cutans, soft and hard nodules, or veins). The accumulation may be in the parent material, or in subsurface horizons, but it can also accur in surface horizons as a result of erosion. If the accumulation of soft carbonates becomes such that all or most of the pedological and/or lithologigal structures disappear and **continuous**

concentrations of calcium carbonate prevail, the horizon is named a hypercalcic horizon (from Gr.**hyper**, superseding, and **L. Calxis,** lime).

Diagnostic criteria. A calcic horizon must have:

1. calcium carbonate equivalent in the five earth fraction of 15 percent or more (for hypercalcic horizons more than 50 per cent calcium carbonate in the five earth fraction); and
2. thickness at least 15 cm, also for the hypercalcic horizon.

Field identification. The presence of calcium carbonate can be identified in the field using a 10% HCI solution. The degree of effervescence (audible only, visible as individual bubbles, or foam-like) is an indication of the amount of lime present. This test is important if only diffuse distributions are present.

Cambic horizon

General description. The cambic horizon (from L. Cambiare, to change) is a subsurface horizon showing evidence of alteration relative to the underlying horizons. It lacks the set of properties diagnostic for a ferralic, argic, natric or spodic horizon and the dark colors, organic matter content and structure of a histic, folic, mollic or umbric horizon.

Diagnostic criteria. A cambic horizon must have:

1. texture in fine earth fraction of sandy or finer; and
2. soil structure which is at least moderately developed or autochthonous rock structure is absent in at least half the volume of the horizon; and
3. evidence of alteration in one or more of the following forms:
    a. stronger chroma, redder hue, or higher clay content than the underlying horizon; or
    b. evidence of removal of carbonates. A cambic horizon always has less carbonate than an underlying horizon with calcium carbonate accumulation. However, not all primary carbonates have to be leached from a horizon in order for it to qualify as a cambic horizon. If all coarse fragments in the underlying horizon are completely coated with lime, some of these fragments in the cambic horizon are partly free of coatings. If the coarse fragments in the horizon showing calcium carbonate accumulation are coated only on the underside, those in the cambic horizon should be free of coatings; or
    c. if carbonates are absent in the parent material and in the dust that fallow on the soil, the required evidence of alteration is satisfied by the presence of soil structure and absence of rock structure

Mollic horizon

General description. The mollic horizon (from L. Mollis, soft) is a well structured, dark coloured surface horizon with high base saturation and a moderate to high content in organic matter.

Diagnostic criteria. A mollic horizon must have:

1. soil structure sufficiently strong that the horizon is not both massive and hard or very hard when dry. Very coarse prisms (prisms larger than 30 cm in diameter) are included in the meaning of massive if there is no secondary structure within the prisms; and
2. both broken and crushed samples have a Munsell chroma of less than 3.5 when moist, a value darker than 3.5 when moist and 5.5 when dry. If there is more than 40 percent finely divided lime, the limits of color value dry are waived; the color value, moist, should be 5 less or less. The color value must be at least one unit darker than that of the C horizon (both moist and dry), unless the soil is derived from dark colored parent material, in which case the color contrast requirement is waived. If a C horizon is not present, comparison should be made with the horizon immediately underlying the surface horizon; and
3. an organic carbon content of 0.6 percent (1 percent organic matter) or more throughout the thickness of mixed horizon. The organic carbon content is at least 2.5 percent if the colour requirements are waived because of finely divided lime, or 0.6 percent more than the C horizon if the colour requirements are waived because of dark colored parent materials

Field identification. A mollic horizon can easily be identified by its dark color, caused by the accumulation of organic matter, well developed structure (usually a granual or fine sub angular blocky structure), an indication of high base saturation, and its thickness.

O horizon

General description. The ochric horizon (from Gr. Ochros, pale) is a surface horizon lacking fine stratification and which is either light colored, or thin, or has an low organic carbon content, or massive and (very) hard when dry.

Diagnostic criteria. An ochric horizon lacks fine stratification and haw one (or more) of the following characteristics or properties:

1. both massive and hard or very hard when dry. Very coarse prisms (prisms larger than 30 cm in diameter) are included in meaning of massive if there is no secondary structure within the prisms; or
2. both broken and crushed samples have a Munsell chroma of 3.5 or more when moist, a value of 3.5 or more when moist and 5.5 when dry. If there is more than 40 percent finely divided lime, the color value, moist, should be more than 5; or
3. an organic carbon content of less than 0.6 percent (1 percent organic matter) throughout the thickness of mixed horizon. The organic carbon content must be less than 2.5 percent if there is more than 40 percent finely divided lime; or
4. thickness of:

Petrocalcic horizon

General discription. A petrocalcic horizon (from GR.petros, rock, and L. Calx, lime) is an indurate calcic horizon, which is cemented by calcium carbonate and, in places, by calcium and some magnesium carbonate. It is either massive or platy in nature, and extremely hard.

Diagnostic criteria. A petrocalcic horizon must have:

1. a calcium carbonate equivalent of 50 percent (by weight) or more; and
2. cementation to the extent that dry fragments do not slake in water and roots cannot enter; and
3. extremely hard consistence when dry so that it cannot be penetrated by spade or auger; and
4. thickness of at least 10 cm, or 2.5 cm if it is laminar and rests directly on bedrock.

Field identification. Petrocalcic horizons occur as **non-platy calcrete**, either or nodular in nature, or as **platy calcrete,** of which the following types are the most frequent:

- lamellar calcrete: superimposed separate petrified layers varying in thickness from a few millimeters to several centimeters. The color is generally white or pink.
- Petrified lamellar calcrete: one or several extremely hard layers, having grey or, more often, pink colors. They are generally more cemented than the lamellar calcrete and the internal organization is very massive (no fine lamellar structures, but coarse lamellar structures may be present).

Non-capillary pores in petrocalcic horizons are filled, and the hydraulic conductivity is moderately slow to very slow.

Vertic horizon

General discription. The vertic horizon (from L. vertere, to turn) is a clayey subsurface horizon which as a result of shrinking and swelling haw polished and grooved ped surfaces (slickenside), or wedge-shaped or parallelepiped structural aggregates.

Diagnostic criteria. A vertic horizon must have:

1. 30 percent or more clay throughout ; and
2. wedge- shaped or parallelepiped structural aggregates with a longitudinal 10° and 60° from the horizontal; and
3. intersecting slickenside and
4. a thickness of 25 cm or more.

Field identification. Vertic horizons are clayey, and have a hard to very hard consistency. When dry, vertic horizons show cracks of 1 or more centimeter wide. In the field the presence of polished, shiny ped surfaces (slickenside) which often sharp angles each other, is very obvious.

Classifying subdivisions of the reference soil groups.

Anthropic: consisting of snthropogeomorphic soil material, or showing profound modification of the soil by human activity caused by other factors than those related to cultivation (in Regosols only).

Calcaric: calcareous at least between 20 and 50 cm from the soil surface. Soils on calcareous sediments or materials.

Calcic: having a calcic horizon or concentrations of secondary carbonates between 50 and 100 cm from the soil surface.

Chromic: having a B horizon which in the major part has a Munsell hue of 7.5 YR and a chroma , moist, of more than 4, or a hue redder than 7.5 YR.

Eutric: (having a base saturation (by 1 M NH_4 Oac) of 50 percent or more at least between 20 and 100 cm from the soil surface).Soils mainly on igneous rocks or materials, having a very low content in $CaCO_3$.

Fluvic: having fluvic soil materials within 100 cm from the soil surface, with very low content in $CaCO_3$.

Gleyic: having gleyic properties within 100 cm from the soil surface.

Gypsic: having a gypsic horizon within 100 cm from the soil surface.

Gypsiric: having gypsiric soil material at least between 20 and 50 cm from the soil surface.

Leptic: having continuous hard rock between 25 and 100 cm from the soil surface.

Endoleptic: having continuous hard rock between 50 and 100 cm from the soil surface.

Epileptic: having continuous hard rock between 25 and 50 cm from the soil surface.

Lithic: having continuous hard rock within 10 cm from the soil surface.

Paralithic: having within 10 cm from the soil surface a broken rock contact with fissures less than 10 cm apart which allow roots to penetrate the underlying rock.

Luvic: having an argic horizon which has a cation axchange capacity equal to or more than 24 $cmol_c\ kg_\kappa^{-1}$ clay throughout, and a base saturation by 1 M NH_4 OAc of 50 percent or more throughout the horizon to a depth of 100cm from the soil surface.

Mollic: having a mollic horizon.

Ochric: having an ochric horizon.

Petric: strongly cemented or indurate within 100 cm from the soil surface.

Petrocalcic: having a petrocalcic horizon within 100 cm from the soil surface.

Rendzic: having a mollic horizon which contains or immediately overlies calcareous materials containing more than 40 percent calcium carbonate equivalent (in Leptosols only).

Rhodic: having a B horizon which has a Munsell hue redder than 5YR (3.5YR or redder) in all parts (apart from minor transitional horizons to A and C horizons), and has a moist color value of less than 3.5, and dry color value no more than one unit higher than the moist value.

Skeletic: having between 40 and 90 percent (by weight) gravel or other coarse fragments to a depth of 100 cm from the soil surface.

Instructions for filling out measured data for soil profiles.

- Measured data for soil profiles is recorded in Table II. The data represents actual soil profile measurements and descriptions in the field, as well as analysis of soil samples in the laboratory. Ideally, soil profiles that describe best the dominant soil type (STU) in the mapping unit (SMU) where the georeference profile is found. Otherwise, georeferenced, measured soil profiles should be selected to illustrate the central concept that defines a STU. They should not be very different from values recorded for the estimated soil profile, except in very specific circumstances.
- The structure of this table is similar to that proposed for estimated data except for the introduction of a second column to record a code defining the type, method and/or units of measurement.
- The following table provides a summary of the data contained in |Table II: measured data for soil profiles.

NAME	DESCRIPTION	TYPE	SIZE
CY	Country	Character	2
STU	Soil Typological Unit (STU) identifying Number	Integer number	6
WRB-GRP	Soil Group code of the STU taken from the World Reference Base (WRB) for Soil Resources	Character string	2
WRB-ADJ	Soil Group code of the STU taken from the World Reference Base (WRB) for Soil Resources	Character string	4
WRB-CMP	Complementary code of the STU taken from the World Reference Base (WRB) for Soil Resources.	Character string	5

Description of the COUNTRY

- Country codes (CY) use the abbreviation from the International Standards Organisation for the area covered by the database, are listed Appendix I of this manual.

Description of the IDENTIFIER of the STU

- The STU number is a link to the corresponding STU and SMU identifiers in STU. ORG table .
- The STU identifier is mandatory.

Description of the SOIL NAME

- The name of the soil type is idicated following the WRB and FAO-90 nomenclature.

Description of the LOCATION of the Measured Soil Profile

- Geographical location is described LAT, LONG and ALT data:

  LAT Latitude
  LONG Longitude
  ELEV Elevation

- Latitude (LAT) and Longitude (LONG) should be recorded in the tratitional way using degrees and minutes in relation to the Greenwich Meridian and the Equator.
- Elevation (ELEV) should be recorded in metres above Mean Sea Level.

Description of the PARENT MATERIAL of the Measured Soil Profile

- Codes for Parent Material (PAR-MAT) of the measured soil profile are those in the STU-ORG table and in the estimate soil profiles table. Use the same parent materials table given in the first part of this instructions guide.
- Use the 4-digit code provided, with the highest level of detail possible.

Major Class level		**Group level**		**Type level**		**Sub-type level**	
0000	No infaormation	0000	No information	0000	No information	0000	No information
1000	consolidated-clastic-sedimentary rocks	1100	psephite or rudite	1110	conglomerate	1111	pudding stone
				1120	breccia		
		1200	psammite or arenite	1210	sandstone	1211	calcareous sandstone
						1212	ferruginous sandstone
						1213	clayey sandstone
						1214	quartzitiic sandstone/ orthoquartzite
						1215	micaceous sandstone
				1220	arkose		
				1230	graywacke	1231	feldspathic graywacke
		1300	pelite, lutite or argilite	1310	claystone/ mudstone	1311	kaoline
						1312	bentonite
				1320	siltstone		
		1400	facies bound rock	1410	flysch	1411	sandy flisch
						1412	clayey and flysch
						1413	conglomeratic flysch
				1420	molasse		

Major Class level		Group level		Type level		Sub-type level	
2000	sedimentary rocks (chemically precipitated, evaporated, or organogenic or biogenic in origin)	2100	calcareous	2110	limestone	2111	hard limestone
						2112	soft limestone
						2113	mary limestone
						2114	chalky limestone
						2115	detrital limestone
						2116	carbonaceous limestone
						2117	lacustrine or fresh water limestone
						2118	travertine/ calcareous sinter
						2119	cavernous limestone
				2120	dolomite	2121	cavernous dolomite
						2122	calcereous dolomite
				2130	marlstone		
				2140	marl	2141	chalk marl
						2142	gypsiferous marl
				2150	chalk		
		2200	evaporites	2210	gypsum		
				2220	anhydrite		
				2230	halite		
		2300	siliceous rocks	2310	chert, hornstone, flint		
				2320	diatomite/ radiolarite		
3000	igneous rocks	3100	acid to intermediate plutonic rocks	3110	granite		
				3120	granodiorite		
				3130	diorite	3131	quartz diorite
						3132	gabbro diorite
				3140	syenite		
		3200	basic plutonic rocks	3210	gabbro		
		3300	ultrabasic plutonic rocks	3310	peridotite		
				3320	pyroxenite		
		3400	acid to intermediate volcanic rocks	3410	rhyolite	3411	obsidian
						3412	quartz porphyrite
				3420	dacite		
				3430	andesite	3431	porphyrite (interm,)
				3440	phonolite	3441	tephritic phonolite
				3450	trachyte		
		3500	basic to ultrabasic volcanic rocks	3510	basalt		

Major Class level		Group level		Type level		Sub-type level	
				3520	diabase		
				3530	pikrite		
		3600	dike rocks	3610	aplite		
				3620	pegmatite		
				3630	lampophyre		
		3700	pyroclastic rocks (tempra)	3710	tuff/tuffstone	3711	agglomeratic tuff
						3712	block tuff
						3713	lapilli tuff
				3720	tuffile	3721	sandy tuffite
						3722	silty tuffite
						3723	clayey tuffite
				3730	volcanic scoria/ volcanic breccia		
				3740	volcanic ash		
				3750	ignimbrite		
				3760	pumice		
4000	metamorphic rocks	4100	weakly metamorphic rocks	4110	(meta-)shale/ argilite		
				4120	slate	4121	graphitic slate
		4200	acid regional metamorphic rocks	4210	(meta-)quartzite	4211	quartzite schist
				4220	phyllite		
				4230	micaschist		
				4240	gneiss		
				4250	granulite sensu stricto)		
				4260	migmatite		
		4300	basic regional metamorphic rocks	4310	greenschist	4311	prasinite
						4312	chlorite
						4313	talc schist
				4320	amphibolite		
				4330	eclogite		
		4400	ultrabasic regional metamorphic rocks	4410	serpentinite	4411	greenstone
		4500	calcareous regional metamorphic rocks	4510	marble		
		4600	rocks formed by contact metamorphism	4520	calcschist, skam		
				4610	contact slate	4611	nodular slate
				4620	hornfels		
				4630	calsilicate rocks		
		4700	tectogenetic metamorphism rocks or cataclasmic metamorphism	4710	tectonic breccia		
				4720	cataclasite		

Major Class level		Group level		Type level		Sub-type level	
				4730	mylonite		
5000	unconsolidated deposits (alluvium, weathering residum and slope deposits)	5100	marine and estuarine sands	5110	pre-quaternary sand	5111	tertiary sand
				5120	quaternary sand	5121	holocene coastal sand with shells
						5122	delta sand
		5200	marine and estuarine clays and silts	5210	pre-quaternary clay and slit	5211	tertiary clay
						5212	tertiary silt
				5220	quaternary clay and silt	5221	holocene clay
						5222	holocene silt
		5300	fluvial sands and gravels	5310	river terrace sand or gravel	5311	river terrace sand
						5312	river terrace gravel
				5320	floodplain sand or gravel	5321	floodplain sand
						5322	floodplain gravel
		5400	fluvial clays, silts and loams	5410	river clay and silt	5411	terrace clay and silt
						5412	floodplain clay and silt
				5420	river loam	5421	terrace loam
						5422	fllodplain clay and silt
				5340	overbank deposit	5431	floodplain loam
						5432	floodplain loam
		5500	lake deposits	5510	lake and sand deltasand		
				5520	lake marl, bog lime		
				5530	lake silt		
		5600	residual and redeposited loams silicate rocks from				
						5612	clayey loam
				5620	redeposited loam	5621	running- ground
		5700	residual and redeposited clays from calcareous rocks	5710	residual clay	5711	clay with flints
						5712	ferruginous residual clay
						5713	calcareous clay
						5714	non-calcareous clay
						5715	marly clay

Major Class level		Group level		Type level		Sub-type level	
				5720	redeposited clay	5721	stony clay
		5800	slope deposits	5810	slope-wash alluvium		
				5820	calluvial deposit		
				5830	talus scree	5831	stratified slope deposits
6000	unconsolidated glacial deposits/ glacial drift	6100	morainic deposits	6110	glacial till	6111	boulder clay
				6120	glacial debris		
		6200	glaciofluvial deposits	6210	outwash sand, glacial sand		
				6220	outwash gravels glacial gravels		
		6300	glaciolacustrine deposits				
				6310	varves		
7000	eolian deposits	7100	loess	7110	loamy loess		
				7120	sandy loess		
		7200	eolian sands	7210	dune sand		
				7220	cover sand		
8000	organic materials	8100	paet (mires)	8110	rainwater fed moor peat (raised bog)	8111	folic peat
						8112	firbic peat
				8120	groundwater fed bog peat		
		8200	slime and ooze deposits	8210	gyttja, sapropel		
		8300	carboneous rocks (caustobiolite)	8310	lignite (brown coal)		
				8320	hard coal		
				8330	anthracite		
		9000	anthropogenic deposits	9100	redeposited natural materials	9110	sand and gravel fill
						9120	loamy fill
				9200	dump deposits	9210	rubber/rubbish
						9220	industrial ashes and slag
						9230	industrial sludge
						9240	industrial waste
				9300	organic materials		

Description of the TYPE of a WATERTABLE in the Soil Profile

- The list of authorised codes and their corresponding meaning is given in the following table for attribute TWT:

TWT values and their meanings	
0	No water
1	Perched water table
2	Permanent water table

Description of DOMINANT LAND USE of the STU

- Land use will generally be agricultural for dominantly agricultural units.Other type of land use for units not dominantly agricultural must also be recorded.

USE- DOM and USE- SEC codes and their meanings	
0	No information
1	Peature, grassland, grazing land
2	Poplars
3	Arable land, cereals
4	Western, shrub
5	Forest, coppice
6	Horticulture
7	Vineyards
8	Garrigue
9	Bush, macchia
10	Moor
11	Halophile, grassland
12	Arboriculture, orchard
13	Industrial crops
14	Rice
15	Cotton
16	Vegetables
17	Olive trees
18	Recreation
19	Extencive pasture, grazing, rough pasture
20	Dehesa (extensive pastoral system in forest parks in Spain)
21	Cultivos enarenados (artificial soils for orchards in SE Spain)
22	Wildlife refuge, land above timberline

Description of the DEPTH of the Measured Soil Profile

- The rooting of the soil is defined with 3 attributes:

ROO	Rooting depth
ROC	Rock Depth
OBS	Other Obstacle

- The soil profile is considered to extend down to a depth to a depth of 2 m (200 cm) when no obstacle is present.

- Depth in cm (to nearest integer) to underlying bedrock should be recorded under ROC, and the depth (cm) to any other limiting horizon, such as a petrocalcic horizon, under OBS.

Description of the HORIZON NAME

- The different horizons, HRZ, are named according to the FAO nomenclature.

Description of the Soil Horizon DEPTH

- See Estimated Soil profile.

Description of the STRUCTURE of the Soil Horizon

- The type of structures (STR) is described following the FAO guidelines (1986).
- Do not describe size or stability but use the numeric code for the structure class.
- The following list of authorised codes and their corresponding meaning is given below:

STR codes and their meanings	
1	Platy
2	Prismatic
3	Columnar
4	Angular blocky
5	Subangular blocky
6	Granual
7	Crumb
8	Massive
9	Single
10	Wedgr shaped

Description of the SOIL COLOUR of the Soil Horizon

- The Soil Colour (COL) is given in Munsell notation: Hue, Value, Chroma.
- For estimated soil profiles, integers only are acceptable to characterize value and chroma. However, expression of colour should ordinarily be to the nearest chip.

Description of the TEXTURE of he Soil Horizon

- Texture of the earth in the Soil Horizon is divided into five classes recorded by five attributes given.
- Values are entered in the **CL, SLT, SD1, SD2**, and **SD3** columns, in percentage, with one decimal.
- Under “ESD”, an abbreviation equivalent spherical diameter, the upper limit of the range for a given particle size class (to the nearest integer) should be

recorded: 0-2 µm for clay, 50 or 60 µm for silt, 200,600,2000 µm or other (e.g. 200, 500 m) relevant limits for sand. This allows textural data that are divided in nin standard classes to be entered.

- However, standard textural classes are preffered. These are 0-2 2µm for clay (CL) , 2-50 m for silt (SLT), 50-200 m for fine sand (SD1), 200-500 µm for medium sand (SD2) and 500-2000 µm for coarse sand(SD2).

Description of STONES and GRAVEL content in the Soil Horizon

- Thiw attribute is not intended for dascription of mineralogy, particle size or weathering status.
- Estimation of the percentage of Stones and Gravel (SG) in the Soil Horizon.
- Use the following codes to record the amount of Stones+ Gravel for each horizon:

SG codes and their meaning		
0	No stones or gravel	
1	Very few	< 5% by volume
2	Few	5-15 % by volume
3	Frequent or many	15-40% by volume
4	Very frequent, very many	40-80% by volume
5	Dominant or skeletal	> 80% by volume

Description of the ORGANIC CARBON CONTENT of the Soil Horizon

- The Organic Carbon Content (OC) is estimated in g/100g of dry fine earth.
- Is given in %, with one deciman place (for example 3.8%), in the column "VAL".
- Under "COD", in the method used to measure organic carbon is recorded with the following codes.

1	Walkley- Black method
2	Leco Method Tabatabai and Bramner (1970)
3	Other (specify on seperate sheet)

Description of the TOTAL NITROGEN of the Soil Horizon

- The Total Nitrogen (TN) is recorded, in percentage, to one deciman place.
- Under "COD", the method used to obtain TN is recorded with the following codes.

4	Wet digestion (Kjeldahl method) (%)
5	Other

Description of the TOTAL CALCIUM CARBONATE CONTENT of the Soil Horizon

- The Total Calcium Carbonate CaCO3 (TCa) is expressed in % of the fine earth fraction.
- It also should be noted to the nearest integer (no decimals).

- Under “COD”, the method is recorded with one of the following codes

6	Calcimeter method (%) [measures CO_2 emitted]
7	Other

Description of GYPSUM CONTENT of the Soil Horizon

- The Gypsum ($CaSO_4.2H_2O$) content (GYP) is expressed in % of the fine earth.
- The GYP attribute value should be given to the nearest integer.
- Under “COD”, the method used to measure gypsum contents is recorded with the following codes.

8	For soils with small quantities of gypsum: by water extraction (USDA Handbook N^0 60, Diagnosis and Improvement of Saline and Alkaline Soils, 1954)
9	For highly gypsiferous soils: by loss of crystallisation water between 40 & 110^0 C.
10	Other

Description of the ACIDITY of the Soil Horizon

- The pH- values (column “VAL”) should be given by any real number to one deciman place.
- Under “COD”, method is recorded with the following codes

11	1:1 water (H_2O)
12	1:2.5 water (H_2O)
13	1:2.5 0.01 M Calcium Chloride ($CaCl_2$)

Descripton of ELECTRICAL CONDUCTIVITY of the Soil Horizon

- EC is measured in ds m^{-1} at 25 d^o C.
- Code ranges are expressed in ds m^{-1} at 25 d^o C.
- In non marin humid regions code 1 should be entered if analytical data are absent.
- Soil horizons are grounded into following classes and recorded codes given in the table below.
- The following table gives the authorised codes and their meaning foe EC attribute:

EC codes and their meanings		
1	0-4	Free
2	4-8	Slightly affected
3	8-15	Moderately affected
4	> 15	Strongly affected

Description of the SODIUM ADSORPTION RATIO of the Soil Horizon

- Sodium adsorption ratio (SAR) should be recorded and rounded to the nearest integer.
- In humid areas, SAR is usually less than 4. Unless data for these areas indicate otherwise, enter "<4".

Description of the EXCHANGEABLE SODIUM PERCENTAGE in the Soil Horizon

- The proportion of Exchangeable Sodium (ESP) is expressed as a percentage of the Cation Exchange Capacity (CEC). The value recorded should be rounded to the nearest integer.
- In humid areas, ASP is normally less than 15% and should be recorded as "<10"

Remark: Only one of these parameters, SAR or ESP, should be recorded.

Description of EXCHANGEABLE BASES of the Soil Horizon

- Exchangeable bases are:

Ca	Exchangeable Calcium
Mg	Exchangeable Magnesium
K	Exchangeable Patassium
Na	Exchangeable Sodium

- Exchangeable bases should be measured using the 1M NH_4AO_c at pH 7.0 extraction method.
- The values should be given to one decimal place except whwn values are lower than 0.1 cmol +/Kg

Description of the CATION EXCHANGE CAPACITY of the Soil Horizon

- Tha Cation Exchange Capacity (CEC) is noted in cmol +/Kg.
- Values are given to one deciman place.
- Under "COD", the analytical method is recorded with the following codes.

21	Destillation method (cmol+/Kg)
22	Exchangeable Bases Ca+Mg+K+NA Exchange acidity
23	Other

Description of the BASE SATURATION of the Soil Horizon

- Base saturation (BS) is calculated as the percentage of the CEC taken up by exchangeable bases.
- BS measurement are recorded to the nearest integer.
- Under "COD", the analytical method is recorded with the following codes

24	(Exch. Ca+Mg+K+Na/ CEC)x 100
25	Other

Description of the SOIL WATER RETENTION of the Soil Horizon

- Soil Water Retention (WR) is the volume percent of water in the soil horizons.
- Because much different suctions levels are used for measuring soil water retention, national correspondents are requested to enter measurements for water contents (WC) at 5 **suctions** levels.
- One of which should be Field Capacity **WRFC.**
- Values must be rounded to the nearest integer.
- The suction potential in kPa will be recorded in the "COD" column. It will record the measurement of the suction: for example WR1 = 5kPa; WR2 = 10kPa; WR3 = 40kPa; WR4 = 200kPa; WR5 = 1500kPa.
- With at least five measurements, a soil water suction curve can be constructed, from which, estimates at intermediate suctions values can be made.

Description of the TOTAL POROSITY of the Soil Horizon

- Total Porosity (TP) is given in %, to the nearest integer.
- Under "COD", the determination method is recorded with the following codes

26	(I-DB/DP)%, (DP is particle density: 2.55 – 2.65g/cm^3
27	Other

Description of the BULK DENSITY of the Soil Horizon

- The bulk density (BD) is noted in g/cm^3.
- BD values are recorded to two deciman places.
- Under "COD", the determination method is indicated using the following codes

28	Soil core in lab., g/cm^3
29	Wet measurement in the field, g/cm^3
30	Other

Analytical codes.

Any additional codes for analytical methods can be introduced from 30 onwards. It will not matter if these codes appear to be out of numerical sequences as they will be set up as a relational table which can be added to easily in the future.

Table of Analytical Codes

FAO 90-UNI	Soil Unit code the STU taken from the 1990 FAO-UNESCO Soil Legend.	Character string	3
FAO-SUB	Soil Sub-Unit code of the STU taken from the 1990 FAO-UNESCO Soil Legend	Character string	4
LAT	Latitude	real number	10
LONG	Longitude	real number	10
ELEV	Elevation above Mean Sea Level	real number	4
PAR-MAT	Code for Parent Material of the Soil profile	Integer number	44
TWT	Type of a Water Table	Integer number	1
HGWL	Highest Groundwater Level	real number	3
LGWL	Lowest Groundwater Level	real number	3
USE-DOM	Code for dominant Land use of the STU	Integer number	2
ROO	Root Depth	real number	3
ROC	Roc Depth	real number	3
OBS	Obstacle Depth	real number	3
HRZ	Horizon Name in the FAO nomenclature	Character string	6
DEP	Depth of the horizon lower boundary	real number	3
STR	Structure	Integer number	2
COL	Soil colour	Charact.+numb	8
CL	Clay fraction< 2µm	Integer number	4
SLT	2-50 µm fraction	real number	4
SD1	50-200 µm fraction	real number	4
SD2	200-500 µm fraction	real number	4
SD3	500-2000 µm fraction	real number	4
SG	Stones and Gravel	real number	4
OC	Organic Carbon	real number	4
TN	Total Nitrogen	real number	4
TCa	Total Calcium equivalent $CaCO_3$	real number	4
GYP	Gypsum ($CaSO4_3$) content	real number	4
pH	pH measured in water	real number	4
EC	Electrical Conductivity	Integer number	6
SAR	Sodium Adsorption Ratio	Integer number	6
ESP	Exchangeable Sodium Percentage	real number	6
Ca	Exchangeable Calcium	real number	6
Mg	Exchangeable Magnesium	real number	6

K	Exchangeable Potasssium	real number	6
Na	Exchangeable Sodium	real number	6
CEC	Cation Exchange Capacity	real number	5
BS	Base Saturation	real number	3
WR	Soil Water Retention of soil horizon at different suctions	Integer number	3
WRCF	Soil Water Retention of soil horizon at Field Capacity	Integer number	3
TP	Total Porosity	Integer number	3
BD	Bulk Density	real number	4

- In general, two columns have to be filled for a same attribute:
  - the measurement is recorded in the “VAL” column, abbreviation for value,
  - the measurement method is recorded in the “COD” column, abbreviation for code. A list contains the codes defining the methods used to measure the different soil characteristics.
- For examle, under C.E.C, “I” under “COD” means the CEC measurement was made using the $1NH_4AO_c$ at pH 7.0 extraction method.

- If there is evidence that the measured value should be zero, but no analysis has been carried out, enter “o” in the “VAL” column and “-9” under “COD”.

- Missing values will be recorded as “-1”.

Soil groups – Soil chemical and physical data and pictures of the main soil profiles.

LEPTOSOLS (LP)

Soils, which are either

1. limited in depth by continuous hard rock within 25 cm from the soil surface; or
2. overlying material with a calcium carbonate equivalent of more than 40 percent within 25 cm from the soil surface; or
3. contains less than 10 percent (by weight) fine earth of 75 cm or more from the soil surface; and
4. having no diagnostic horizons other than a mollic ochric or vertic horizon.

Mollic Horizon

Field identification. A mollic horizon can easily be identified by its dark color, caused by the accumulation of organic matter, well developed structure (usually a granual or fine sub angular blocky structure), an indication of high base saturation, and its thickness.

Ochric Horizon

General description. The ochric horizon (from Gr. Ochros, pale) is a surface horizon lacking fine stratification and which is either light coloured, or thin, or has an low organic carbon content, or is massive and (very) hard when dry.

Τα εδάφη αυτά έχουν περιορισμένο βάθος συνήθως μέχρι 25 εκ. από την επιφάνεια και σχηματίστηκαν πάνω σε πυριγενή πετρώματα ή γεωλογικές ασβεστούχες στρώσεις των ορεινών και ημιορεινών περιοχών και γενικά εκεί που το έδαφος παρασύρεται λόγω της κλίσης και της διάβρωσης. Οι ορίζοντες που επικρατούν είναι οι mollic και ochric.

LEPTOSOLS - Profile : 1 (LP.li.eu)- **number on the map 1**

LEPTOSOLS Profile 1 (LP. li.eu) entcic-lithic-LEPTOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	1	LP	Lpli		LP	g		35˚04'20"	35˚54'02"	306

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
3520	0	0	0	5	-1	-1	-1	A	10	6
					-1	-1	-1	R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
7,5YR5/4	14,5	2	32,0	50,0	18,0	200,0	35,5	500	-1		4
	-1,0		-1,0		-1,0		-1,0		-1		

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
2,0	1	-1		0	6	-1		7,2	15	1	17	<4
-1,0				-1		-1		-1				

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	22,3	19	18,0	19	0,3	19	1,0	19	32,3	22	-1	
	-1,0		-1,0		-1,0		-1,0		-1,0		-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1								
-1		-1		-1		-1,0		-1,0	-1,0		-1,00	

LEPTOSOLS - Profile : 2 (LP.li)**-number on the map 2**

LEPTOSOLS profile 2 (LP li) lithic-LEPTOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	2	LP	Lpli		LP	g		35˚01'00"	33˚44'00"	110

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
1110	0	0	0	5	-1	-1	-1	A	10	6
					-1	-1	-1	C-R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5YR4/4	26,0	2	25,0	50,0	22,5	200	26,5	500	-1		1
-1	-1,0		-1,0		-1,0		-1,0		-1		

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
2,5	1	-1		5	6	-1		7,6	15	1	17	<4
						-1		-1,0		1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	14,5	19	8,5	19	0,4	19	1,3	19	19,7	22	-1	
	-1		-1		-1		-1		-1		-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		-1,0	-1		-1	
-1		-1		-1		-1		-1,0	-1		-1	

LEPTOSOLS - Profile : 3 (LP.li.ca)**- number on the map 3**

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	3	LP	Lpli		LP	g		34˚51'20"	32˚28'00"	580

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2141	0	0	0	9	-1	-1	-1	A	10	7
					-1	-1	-1	C-R		

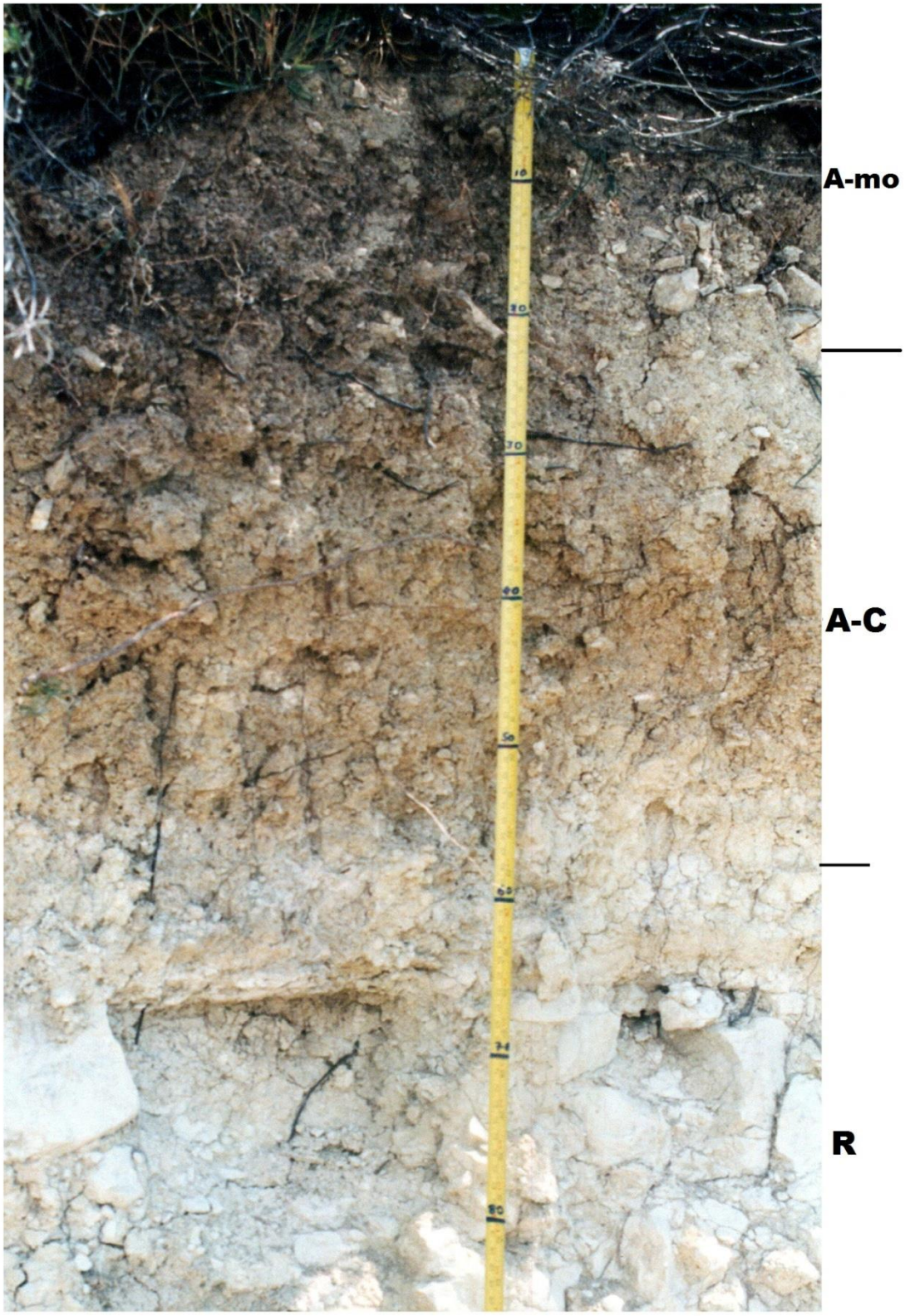
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR7/3	32,5	2	35,0	50	14,0	200,0	18,5	500	-1		4
-1											

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,7	1	-1		65,8	6	-1		8,4	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	45,0	19	6,0	19	1,5	19	1,8	19	44,3	22	-1	
	-1		-1		-1		-1		-1		-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		-1	-1		-1	
-1		-1		-1		-1		-1	-1		-1	

LEPTOSOLS - Profile : 4 (LP.rz.ca)**- number on the map 4**



LEPTOSOLS profile 4 (LP.rz.ca) calkaric.rendzic. LEPTOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	4	LP	LPrz		LP	K		34˚45'00"	32˚58'20"	420

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2141	0	0	0	7	-1	-1	-1	A-Mo	15	4
					-1	-1	-1	A-C	45	6
					-1	-1	-1	R	80	6

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR4/2	28,0	2	45,0	50	12,0	200	15,0	500	-1		4
10YR5/3	33,5	2	38,5	50	11,0	200	17,0	500	-1		4
10YR6/3	32,0	2	42,0	50	9,0	200	17,0	500	-1		

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,8	1	-9		66,5	6	-1		8,0	15	1	17	<4
1,4	1	-9		70,2	6	-1		8,2	15	1	17	<4
				75,3	6	-1		8,5	15			<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	29,0	19	2,5	19	1,2	19	0,8	19	30,5	22	-1	
	30,0	19	1,8	19	0,9	19	0,8	19	29,0	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1								
-1		-1		-1								
-1		-1		-1								

LEPTOSOLS - Profile : 5 (LP.rz) **- number on the map 5**

LEPTOSOLS profile 5 (LP.rz.) rendzic. LEPTOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	4	LP	LPrz		LP	g				820

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2141	0	0	0	7	-1	-1	-1	mo-A	20	7
								R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR4/2	14,5	2	32,0	50,0	18,0	200	35,5	500	-1		4
-1	-1,0		-1,0		-1,0		-1,0		-1		-1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
3,0	1	-1		66,5	6	-1		7,2	15	1	17	<4
-1,0		-1		-1,0		-1		-1		1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	29,0	19	2,5	19	1,2	19	0,8	19	30,5	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD

LEPTOSOLS Other Profiles Profiles No. 7, No. 8, No. 9

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	7	LP	Lpli		LP	l		35˚05'30"	33˚23'30"	212
CY	8	LP	Lpli		LP	g		35˚08'40"	33˚13'30"	280
CY	9	LP	Lpli		LP	g		34˚59'40"	33˚44'30"	62

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2120	0	0	0	8	-1	-1	-1	A	8	7
					-1	-1	-1	R		
2120	0	0	0	3	-1	-1	-1	A	-1	-1
					-1	-1	-1	R		
1210	0	0	0	3	-1	-1	-1	A	10	4
					-1	-1	-1	R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
7,5YR6/4	27,4	2,0	20,8	50,0	26,5	200,0	25,3	500	-1		3
10YR7/2	36,0	2	22,0	50	35,5	200	6,5	500	-1		2
-1	-1		-1		-1		-1		-1		-1
5YR5/3	30,0	2	24,5	50	20,5	200	25,0	500	-1		5
-1	-1		-1		-1		-1		-1		-1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,5	1			33,0	6	-1		8,5	15	1	17	<4
0,5	1	-1		28,3	6	-1		8,6	15	1	17	<4
-1		-1		-1		-1		-1		1	17	<4
0,5	1	-1		25,6	6	-1		8,4	15	1	17	<4
-1		-1		-1		-1		-1		-1		-1

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD

FLUVISOLS (FL)

1. fluvic soil material starting within 25 cm from the soil surface and continuing to a depth of at least 50 cm from the soil surface
2. no diagnostic horizons other than an ochric.

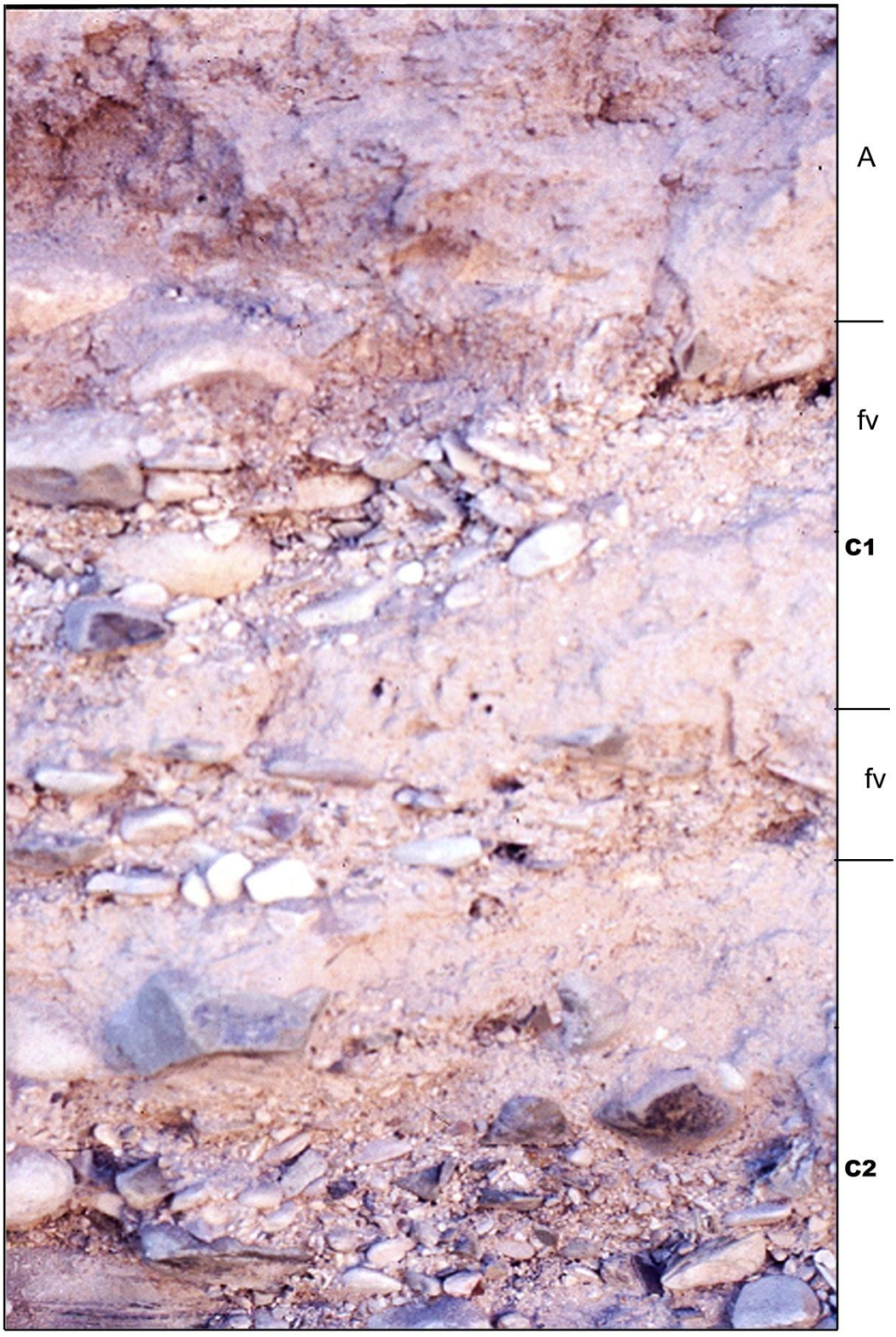
General description. Fluvic soil material (from L. fluvius, river) refers to fluviatile, marine and lacustrine sediments, which receive fresh material at regular intervals, or have received it in the recent past.

Diagnostic criteria. Fluvic soil material which shows stratification in at least 25 percent of the soil volume over a specified depth: stratification may also be evident from an organic carbon content decreasing irregularly with depth, or remaining above 0.2 percent to a depth of 100 cm. Thin strata of sand may have less organic carbon if the finer sediments below, exclusive of buried A horizons, meet the letter requirement.

Field identification. Fluvic soil material shows stratification. Alternating darker coloured soil layers may reflect an irregular decrease in organic carbon content with depth.

Τα πιο πάνω εδάφη συναντώνται κυρίως κατά μήκος των ρυακιών ή ποταμών από πρόσφατες εναποθέσεις και καταλαμβάνουν πολύ μικρές εκτάσεις.
Είναι ανώριμα εδάφη χωρίς καμία ανάπτυξη και έχουν συνήθως ένα orchic ορίζοντα.

FLUVISOLS - Profile : 1 (FL.ca) **- number on the map 10**



FLUVISOLS profile 1 (Fl.ca) Calcaric- Fluvisols

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	1	FG	RGca		RC	c		34˚54'00"	33˚30'30"	120

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2141	0	0	0	7	-1	-1	-1	A	30	6
					-1	-1	-1	C_1	85	6
					-1	-1	-1	C_2	120	7

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR6/4	28,5	2	46,5	50	10,0	200	15,0	500	-1		
2,5Y6/2	32,5	2	44,5	50	12,0	200	11,0	0500	-1		3
2,5Y6/4	38,0	2	42,5	50	10,0	200	9,5	500	-1		4

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,3	1	-1		65,0	6	-1		8,3	15	1	17	<4
1,0	1	-1		68,2	6	-1		8,5	15	1	17	<4
0,7	1	-1		68,5	6	-1		8,6	15	-1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
31,4	19	2,4	19	0,6	19	0,5	19	29,1	22	-1		-1
32,6	19	3,4	19	0,5	19	0,6	19	26,1	22	-1		-1
37,9	19	3,2	19	0,5	19	0,6	19	39,1	22	-1		-1

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD

REGOSOLS (RG)

O horizon

Soils formed from unconsolidated materials, on calcareous geological layers or igneous rocks.
They are founded on mountainous and semi- mountainous areaw and due to the severe erosion they have usually an orchic horizon and limited depth.
Regosols inclouds also deep soils which are found usually on accumulation of eraded soils.

General description. The ochric horizon (from Gr. Ochros, pale) is a surface horizon lacking fine stratification and which is either light colored, or thin, or has an low organic carbon content, or massive and (very) hard when dry.

Diagnostic criteria. An ochric horizon lacks fine stratification and haw one (or more) of the following characteristics or properties:

1. both massive and hard or very hard when dry. Very coarse prisms (prisms larger than 30 cm in diameter) are included in meaning of massive if there is no secondary structure within the prisms; or
2. both broken and crushed samples have a Munsell chroma of 3.5 or more when moist, a value of 3.5 or more when moist and 5.5 when dry. If there is more than 40 percent finely divided lime, the color value, moist, should be more than 5; or
3. thickness of:

Στα Regosols (RG) περιλαμβάνονται εδάφη, που σχηματίστηκαν σε ασβεστούχες γεωλογικές στρώσεις ή και πυριγεβή πετρώματα Συναντώνται σε διάφορα μέρη και κυρίως σε ορεινές και ημιορεινές περιοχές, όπου λόγω της έντονης διάβρωσης έχουν περιορισμένο βάθος και ένα orchic συνήθως ορίζοντα. Στα Regosols περιλαμβάνονται επίσης βαθιά εδάφη και κυρίως εκεί όπου τα διαβρωθέντα εδάφη συσσωρεύονται.

Κατά την ταξινόμηση των REGOSOLS, καθώς επίσης και των LEPTOSOLS έχει χρησιμοποιηθεί ο όρος eutric και calcaric γιατί θεωρείται ότι γίνεται πιο κατανοητός ο διαχωρισμός των εδαφών, που σχηματίζονται σε πυριγενή μη ασβεστούχα πετρώματα και ασβεστούχες γεωλογικές στρώσεις.

REGOSOLS - Profile : 1 (RG.sk.eu) - **number on the map 11**

REGOSOLS Profile 1 (RG.sk. eu) skeletic - eutric- REGOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	1	RG	RGeu		RG	e		34˚53'20"	32˚55'30"	1009

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
3520	0	0	0	5	-1	-1	-1	A	35	6
					-1	-1	-1	C	120	9

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR5/4	22,5	2	24,5	50	32,5	200	20,5	500	-1		3
7,5YR6/6	18,0	2	37,0	50	30,0	200	15,0	500	-1		4

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
2,0	1	-1		0	6	-1		7,5	15	1	17	<4
1,0	1	-1		0	6	-1		7,7	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	35,5	19	18,5	19	0,3	19	0,6	19	43,9	22	-1	
	26,4	19	14,6	19	0,2	19	0,4	19	34,6	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		18,5		36,8	56,3	26	1,29	28
-1		-1		-1		22,3		33,7	54,2	26	1,24	28

REGOSOLS - Profile : 2 (RG.le.eu)- **number on the map 12**

REGOSOLS Profile 2 (RG. le.eu) leptic - eutric - REGOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	2	RG	RGeu		RG	e		35˚02'50"	32˚47'00"	214

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
3520	0	0	0	7	-1	-1	-1	A	30	6
								C	40	4
								C-R		

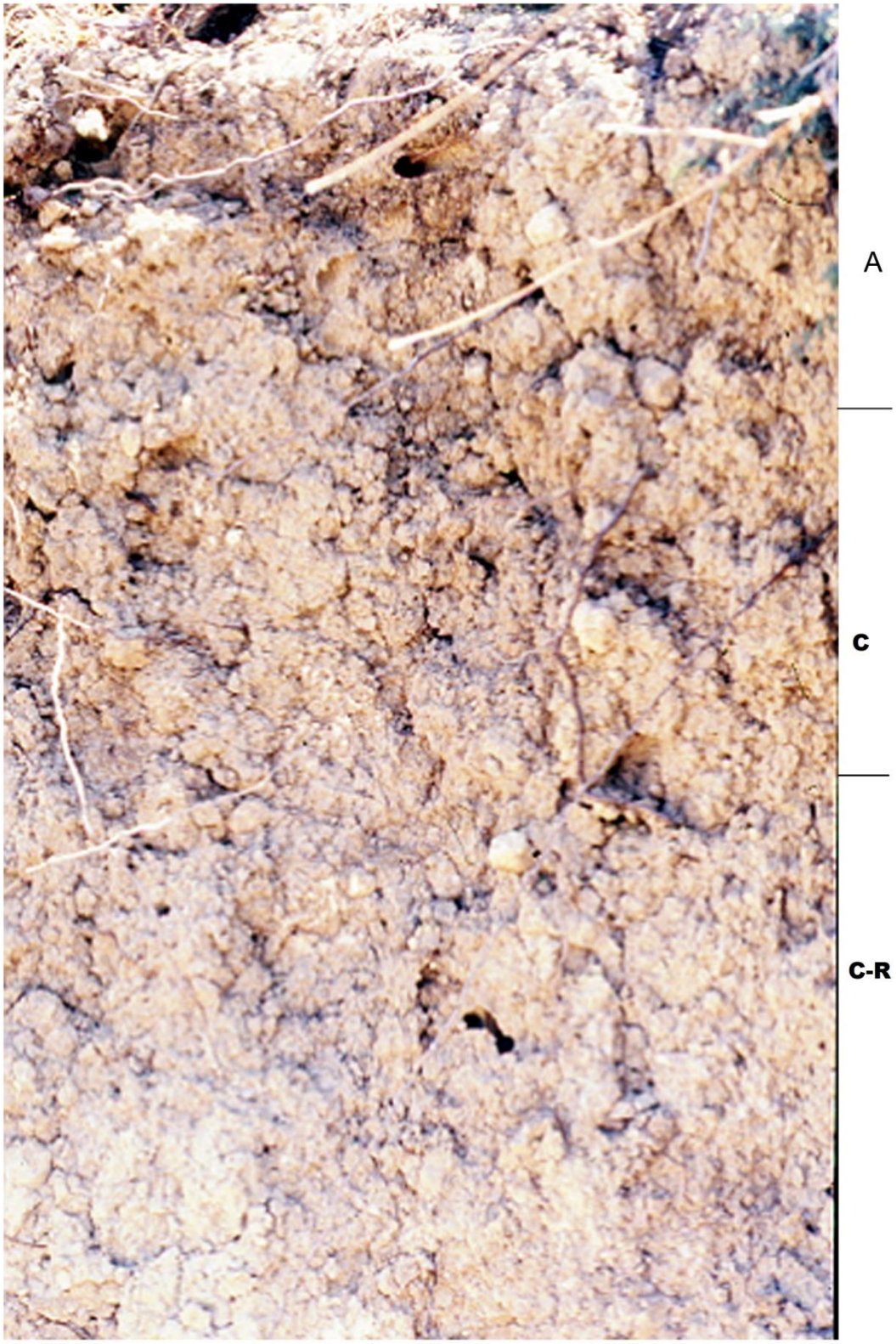
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
7,5YR5/4	30,0	2	17,5	50	18,5	200	34,0	500	-1		3
7,5YR6/6	35,0	2	15,5	50	25,5	200	24,0	500	-1		3

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,5	1	-1		0,0	6	-1		8,2	15	1	17	<4
-1,0	1	-1		0,0	6	-1		7,9	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	32,3	19	17,7	19	0,4	19	0,7	19	40,1	22	-1	
	27,6	19	13,2	19	0,2	19	0,6	19	32,8	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		16,4		30,5	54,4	26	1,30	28
-1		-1		-1		23,6		34,4	46,7	26	1,20	28

REGOSOLS - Profile : 3 (RG.ca)- **number on the map 13**



REGOSOLS Profile 3 (RG. ca) calcaric- REGOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	3	RG	RGca		RG	c		35˚03'00"	33˚21'00"	412

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	3	-1	-1	-1	A	30	6
					-1	-1	-1	C	70	6
					-1	-1	-1	C-R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR6/3	38,0	2	23,5	50	28,5	200	10,0	500	-1		2
10YR7/3	42,0	2	27,0	50	22,0	200	9,0	500	-1		2
2,5YR7/2											

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,0	1	-1		38,5	6	-1		8,3	15	1	17	<4
0,8	1	-1		43,0	6	-1		8,6	15	1	17	<4
				44,0	6			8,5				<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	37,3	19	2,3	19	1,0	19	1,7	19	33,6	22	-1	
	35,2	19	4,0	19	0,8	19	1,7	19	36,5	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		23,8		36,5	46,0	26	1,34	28
-1		-1		-1		25,6		38,6	43,6	26	1,43	28

REGOSOLS - Profile : 4 (RG.le.ca) **- number on the map 14**

REGOSOLS Profile 4 (RG.le.ca) calcaric- leptic- REGOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	4	RG	RGle		RG			34˚47'20"	32˚55'50"	620

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2141	0	0	0	4	-1	-1	-1	A	30	6
					-1	-1	-1	C	45	4
					-1	-1	-1	R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR6/3	24,0	2	33,0	50	24,5	200	18,5	500	-1		3
10YR7/4	28,0	2	38,0	50	20,0	200	14,0	500	-1		4

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,0	1	-1		55,5	6	-1		8,6	15	1	17	<4
-1,0	1	-1		60,0	6	-1		8,8	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	45,6	19	4,5	19	0,8	19	2,2	19	42,0	22	-1	
	50,5	19	6,8	19	0,5	19	2,0	19	46,5	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		22,6		36,7	48,3	26	1,40	28
-1		-1		-1		25,4		38,2	46,0	26	1,50	28

REGOSOLS - Profile : 5 (RG.ca.sk)**- number on the map 15**

REGOSOLS Profile 5 (RG. ca.sk) skeletic - calcaric - REGOSOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	5	RG	RGca		RG	c		34˚47'00"	32˚48'30"	582

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5800	0	0	0	3	-1	-1	-1	A	30	6
					-1	-1	-1	C-R	120	6

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5Y6/4	36,4	2	21,5	50	30,6	200	11,5	500	-1		5
2,5Y6/4	38,5	2	16,8	50	29,3	200	15,4	500	-1		5

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,0	1	-1		27,0	6	-1		8,2	15	1	17	<4
0,5	1	-1		35,8	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD

REGOSOLS Other profiles

Profile 6

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	6	RG	RGle		RG			35˚05'20"	33˚09'00"	350

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
1211	0	0	0	3	-1	-1	-1	A	20	4
					-1	-1	-1	C	85	8

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5RY6/2	38,0	2	32,5	50	13,9	200	15,6	500	-1		1
-1	35,0	2	25,6	50	17,0	200	22,4	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,8	1	-1		23,5	6	-1		8,2	15	1	17	<4
0,4	1	-1		28,0	6	-1		8,4	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	-1		20,3	19	1,4	19	2,6	19	45,2	22	-1	
	-1		-1		-1		-1		-1		-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		12,5		38,5	52,4	26	-1	
-1		-1		-1		-1		-1	-1		-1	

Profile **7**

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	7	RG	RG ca		RC	c		35˚28'00"	33˚28'00"	208

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2141	0	0	0	7	-1	-1	-1	A	30	6
					-1	-1	-1	C_1	45	6
					-1	-1	-1	C_2	110	7

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5Y6/4	28,5	2	46,5	50	10,0	200	15,0	500	-1		4
											3
											3

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,3	1	-1		65,0	6	-1		8,3	15	1	17	<4
1,0	1	-1		68,2	6	-1		8,5	15	1	17	<4
0,7	1	-1		68,5	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	31,4	19	2,4	19	0,6	19	0,5	19	29,1	22	-1	
	32,6	19	3,4	19	0,5	19	0,6	19	26,1	22	-1	
	37,9	19	3,2	19	0,5	19	0,6	19	39,1	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		36,0	48,6	26	1,30	28
-1		-1		-1		-1		43,3	53,2	26	1,20	28
-1		-1		-1		-1		43	51,4	26	1,2	28

Profile 8

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	8	RG	RG le		RG			34˚46'00"	32˚31'30"	220

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
4410	0	0	0	4	-1	-1	-1	A	45	4
					-1	-1	-1	C	75	4

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5Y5/2	27,2	2	26,5	50	27,9	200	18,4	500	-1		2
2Y5/4	23,5	2	38,6	50	26,3	200	11,6	500	-1		1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,6	1	-1		8,6	6	-1		8,4	15	1	17	<4
0,4	1	-1		3,2	6	-1		8,6	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	34,0	19	3,3	19	0,3	19	1,9	19	27,3	22	-1	
	54,0	19	4,5	19	0,5	19	3,0	19	43,3	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
	-1		-1	-1			-1	-1		-1		-1
	-1		-1	-1			-1	-1		-1		-1

Profile 9

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	9	RG	RG ca		RG	c		34˚52'20"	33˚32'10"	120
CY	20	RG	RG ca		RG	c		34˚58'30"	33˚37'20"	25

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5800	0	0	0	3	-1	-1	-1	A	25	6
					-1	-1	-1	C_1	86	6
					-1	-1	-1	C_2	110	7
5820	0	0	0	3	-1	-1	-1	A	35	6
					-1	-1	-1	C_1	86	6
					-1	-1	-1	C_2	120	7

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR5/4	34,5	2	25,6	50	21,9	200	18,0	500	-1		3
10YR6/4	36,5	2	26,2	50	12,8	200	24,5	500	-1		2
10YR7/3	30,5	2	28,5	50	22,2	200	18,8	500	-1		1
2,5Y7/2	34,5	2	27,4	50	31,9	200	6,2	500	-1		0
2,5Y6/4	35,2	2	29,0	50	27,0	200	8,8	500	-1		0
2,5Y6/4	38,7	2	27,5	50	27,0	200	6,8	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,2	1	-1		35,5	6	-1		8,4	15	1	17	<4
0,6	1	-1		38,0	6	-1		8,4	15	1	17	<4
0,4	1	-1		56,0	6	-1		8,5	15	1	17	<4
0,8	1	-1		48,5	6	-1		8,4	15	1	17	<4
0,5	1	-1		54,2	6	-1		8,5	15	1	17	<4
0,3	1	-1		55,0	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	36,0	19	5,0	19	1,5	19					-1	
	40,0	19	5,0	19	0,8	19	1,8	19	36,5	22	-1	
	44,5	19	5,0	19	0,5	19	1,7	19	41,0	22	-1	
	41,6	19	6,0	19	0,2	19	1,0	19	37,2	22	-1	

Profile 10

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	10	RG	RG ca		RG	c		35˚03'40"	33˚13'15"	396
CY	6	RG	RG ca		RG	c		35˚10'30"	33˚30'00"	238

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2140	0	0	0	3	-1	-1	-1	A	20	6
					-1	-1	-1	AC	45	4
					-1	-1	-1	C	80	8
5420	0	0	0	3	-1	-1	-1	A	35	6
					-1	-1	-1	AC	75	4
					-1	-1	-1	C	120	4

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5Y6/3	36,5	2	34,4	50	20,4	200	8,7	500	-1		1
2,5Y5/4	38,2	2	30,3	50	20,9	200	10,6	500	-1		0
5Y6/3	32,6	2	32,0	50	26,4	200	9,0	500	-1		0
10YR4/4	28,5	2	32,5	50	26,5	200	12,5	500	-1		0
10YR3/4	34,2	2	32,4	50	24,2	200	9,2	500	-1		0
10YR3/4	32,6	2	31,6	50	24,3	200	11,5	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,5	1			26,5	6	-1		8,2	15	1	17	<4
0,5	1			28,3	6	-1		8,4	15	1	17	<4
0,4	1			28,6	6	-1		8,5	15	1	17	<4
1,4	1			12,5	6	-1		8,4	15	1	17	<4
0,8	1			13,8	6	-1		8,1	15	1	17	<4
0,4	1			11,6	6	-1		8,2	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	46,0	19	5,0	19	1,0	19	0,6	19	38,6	22	-1	
	45,0	19	8,0	19	0,3	19	1,0	19	36,2	22	-1	
	38,5	19	11,5	19	0,2	19	1,5	19	32,0	22	-1	
	45,0	19	20,3	19	1,4	19	2,6	19	45,2	22	-1	
	36,5	19	33,5	19	0,6	19	3,3	19	43,5	22	-1	
	35,4	19	38,2	19	0,6	19	3,3	19	45,3	22	-1	

Profile 10

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		16,0		35,0	50,9	26	1,30	28
-1		-1		-1		18,0		33,1	50,0	26	1,20	28
-1		-1		-1		14,3		33,2	48,0	26	1,30	28
-1		-1		-1		12,5		38,5	52,4	26	1,20	28
-1		-1		-1		15,6		43,6	44,5	26	1,40	28
-1		-1		-1		13,7		45,2	50,9	26	1,30	28

CAMBISOLS (CM)

Other soils having either

1. a cambic horizon; or
2. a mollic horizon overlying a subsoil which has base saturation (by1M NH_4 OA_c) of less than 50 percent in some part within 100 cm from the soil surface; or
3. one of the following diagnostic horizons within the specified depth from the soil surface:

a. a vertic horizon starting between 25 and 100 cm;

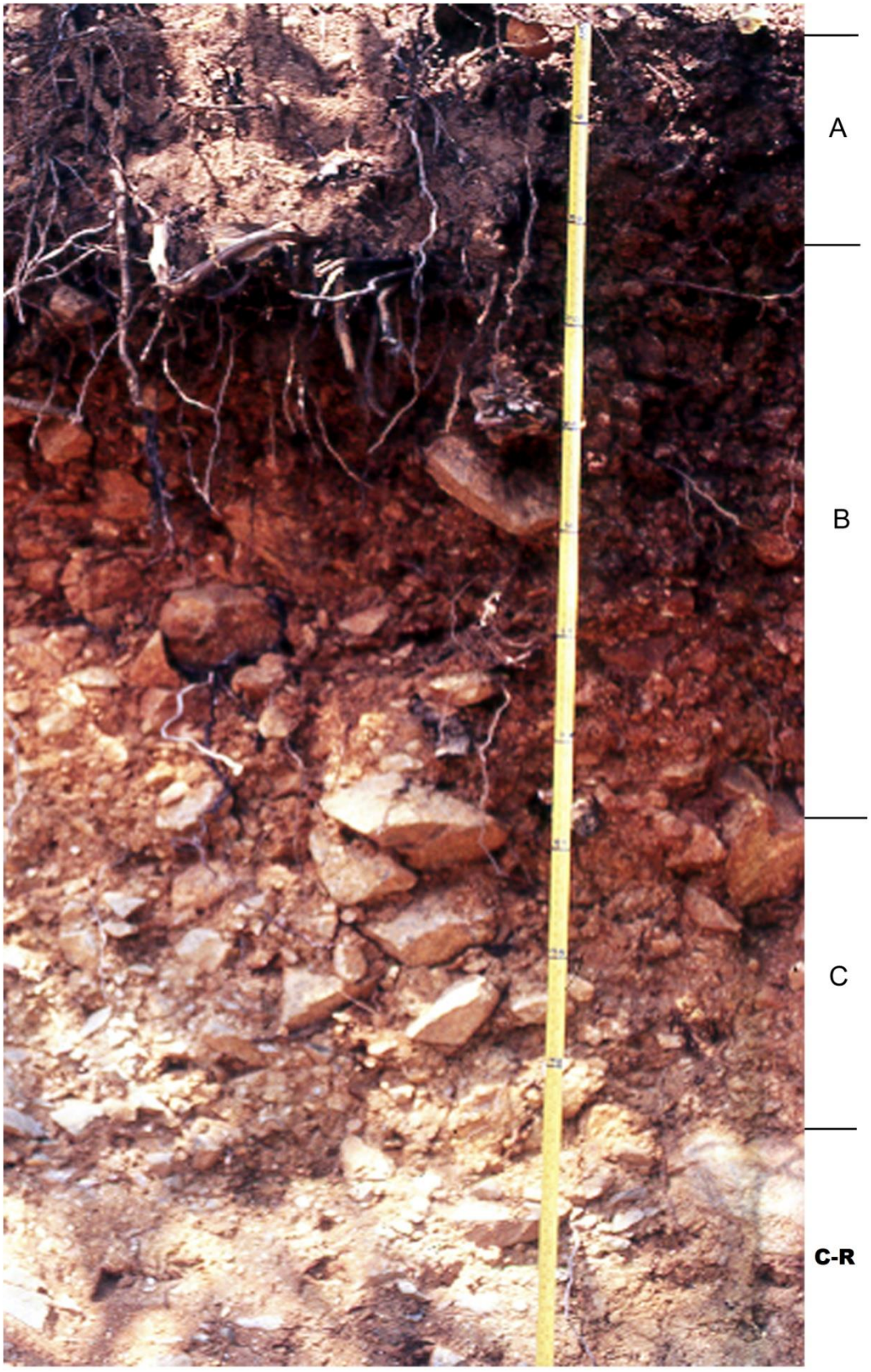
General description. The cambic horizon (from L. Cambiare, to change) is a subsurface horizon showing evidence of alteration relative to the underlying horizons.

Diagnostic criteria. A cambic horizon must have:

1. texture in fine earth fraction of sandy or finer; and
2. soil structure which is at least moderately developed or autochthonous rock structure is absent in at least half the volume of the horizon; and
3. evidence of alteration in one or more of the following forms:
    a. stronger chroma, redder hue, or higher clay content than the underlying horizon; or
    b. evidence of removal of carbonates. A cambic horizon always has less carbonate than an underlying horizon with calcium carbonate accumulation.

Στην ομάδα των Cambisols (CM) περιλαμβάνονται εδάφη, που παρουσιάζουν εξέλιξη οριζόντων και κυρίως ενός Cambic B ορίζοντος. Θεωρούνται ώριμα εδάφη με καλές φυσικές και χημικές ιδιότητες και βρίσκονται σε διάφορες περιοχές. Τα εδάφη αυτά προήλθαν από τη διάβρωση των διάφορων πετρωμάτων, που εξελίχτηκαν επιτόπου, είτε είναι εδάφη, που αναπτύχθηκαν σε εναποθέσεις και σε περιοχές συναγμάτων (faglomerate).

CAMBISOLS - Profile : 1 (CM.le.cr)- **number on the map 23**



CAMBISOLS Profile 1 (CM.le.cr) chromic - leptic - CAMBISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	1	CM	CMcr		CM			34°57'10"	32°55'30"	1211

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
	0	0	0	7	-1	-1	-1	A	20	6
3210								B	60	4
								C	8,5	
								C-R		

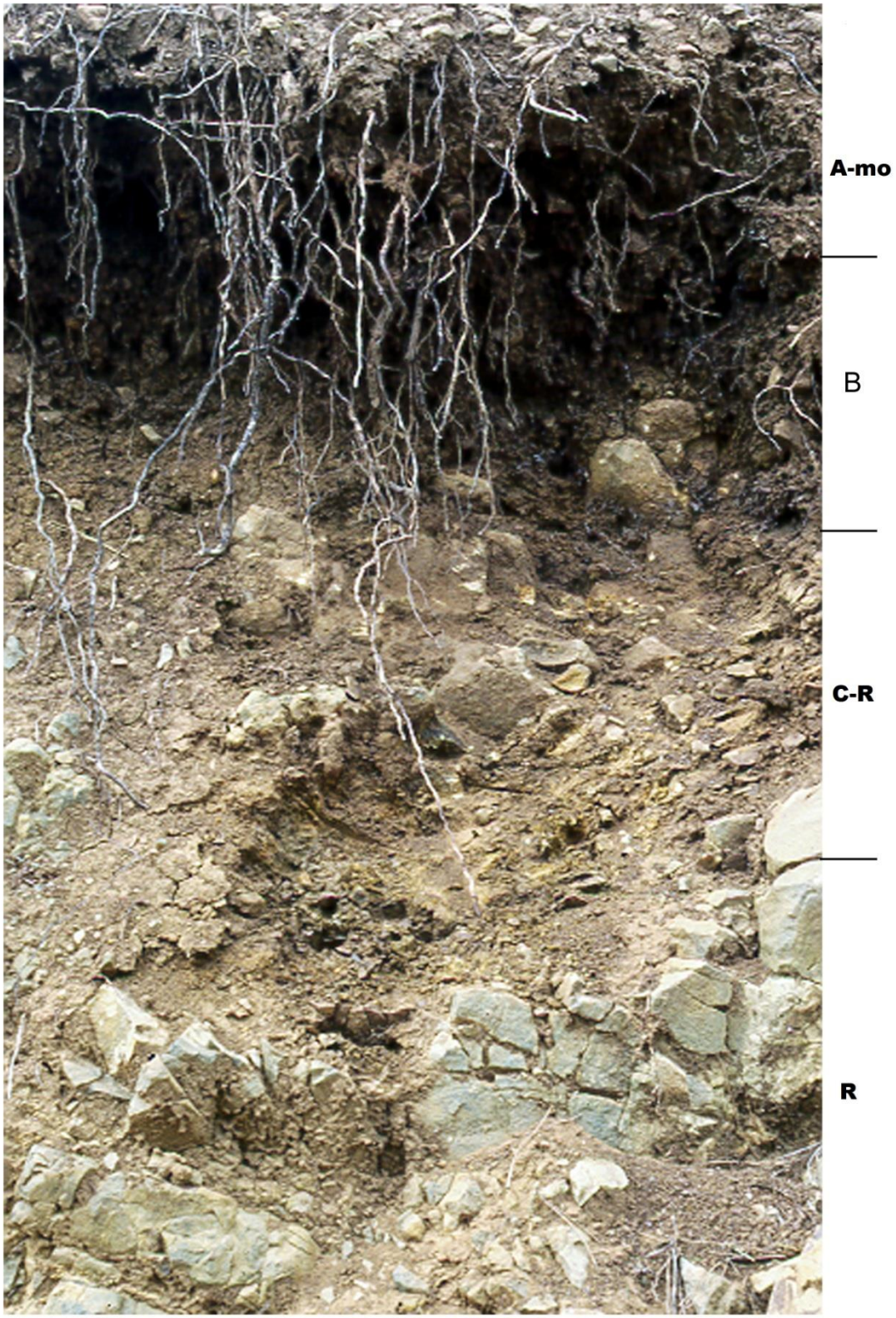
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR4/2	22,5	2	24,5	50	32,5	200	20,5	500	-1		3
5YR4/3	30,0	2	17,5	50	18,5	200	34,0	500	-1		3
2Y5/4	23,5	2	38,6	50	26,3	200	11,6	500	-1		4

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
2,0	1	-1		0	6	-1		65	15	1	17	<4
1,5	1	-1		0,0	6	-1		7,6	15	1	17	<4
0,4	1	-1		3,2	6	-1		7,6	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	35,5	19	18,5	19	0,3	19	0,6	19	43,9	22	-1	
	32,3	19	17,7	19	0,4	19	0,7	19	40,1	22	-1	
	35,0	19	4,5	19	0,5	19	3,0	19	43,3	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		-1	-1		-1	

CAMBISOLS - Profile : 2 (CM.eu)- **number on the map 24**



CAMBISOLS Profile 2 (CM. le.mo) molic - leptic - CAMBISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	2	CM	Cmme		CM	e		34°54'30"	32°57'50"	1310

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
3210	0	0	0	12	-1	-1	-1	A-mo	20	6
					-1	-1	-1	B	45	4
					-1	-1	-1	C-R	75	7
								R		

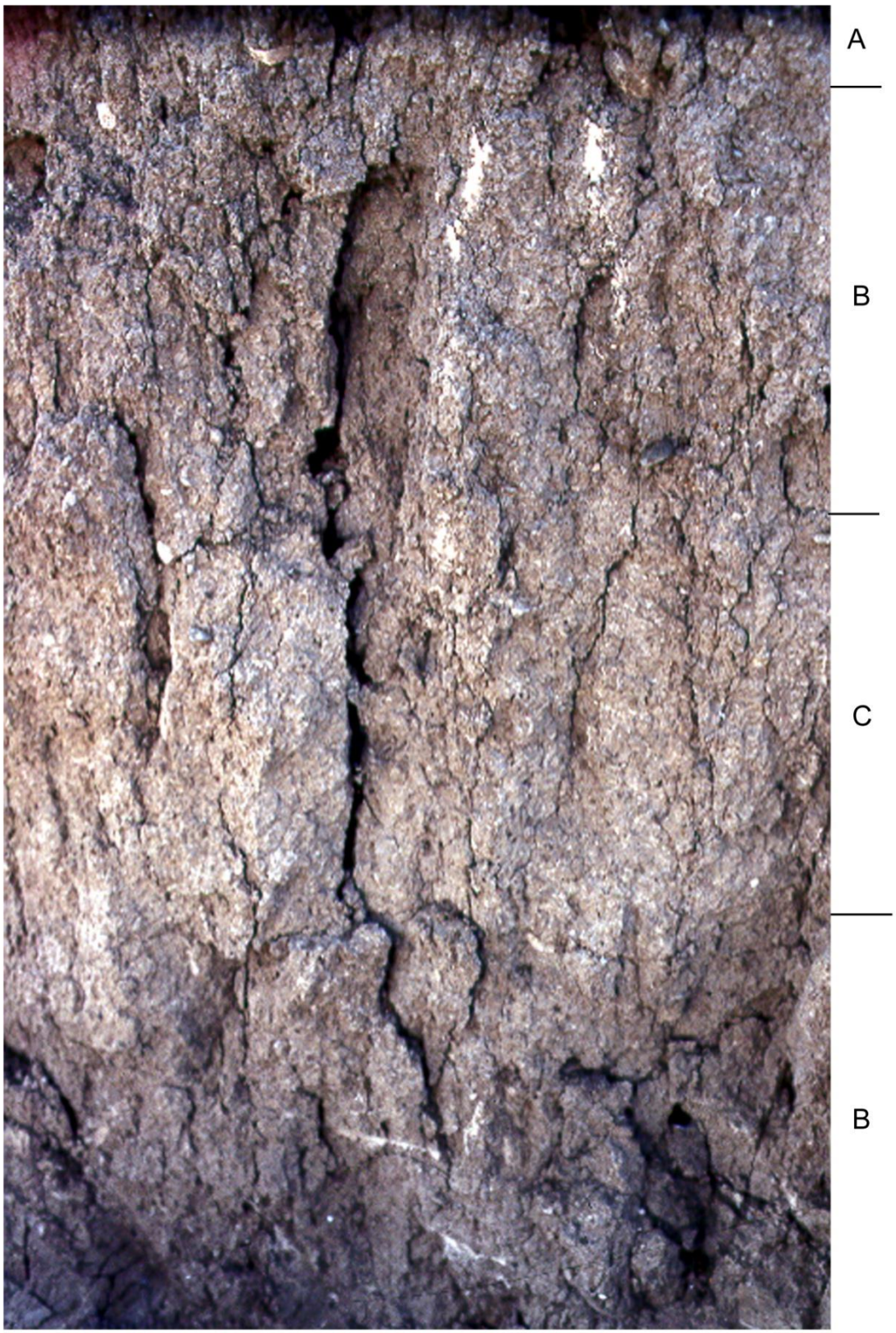
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR3/3	27,0	2	24,5	50	27,0	200	20,5	500	-1		2
10YR4/3	31,0	2	27,0	50	20,5	200	21,5	500	-1		2
5Y6/3	25	2	26,0	50	29,5	200	18,5	500	-1		5

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
4,0	1	-1		0,0	6	-1		7,5	15	1	17	<4
2,6	1	-1		0,0	6	-1		7,6	15	1	17	<4
0,6	1	-1		0,0	6	-1		7,4	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	31,5	19	23,0	19	0,5	19	1,7	19	43,1	22	-1	
	35,9	19	18,2	19	0,5	19	1,7	19	42,2	22	-1	
	41,0	19	20,0	19	0,2	19	2,0	19	45,3	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		22,5		37,0	50,6	26	1,30	28
-1		-1		-1		26,3		45,0	45,0	26	1,40	28
-1		-1		-1		28,5		42,3	47,2	26	1,46	28

CAMBISOLS - Profile : 3 (CM.vr.eu) **- number on the map 25**



CAMBISOLS Profile 3 (CM. vr.eu) eutric - vertic - CAMBISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	3	CM	CMvr		CM	v		35°01'30"	32°53'00"	542

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	12	-1	-1	-1	A	20	4
					-1	-1	-1	B		5
								C		
					-1	-1	-1	B	120	8

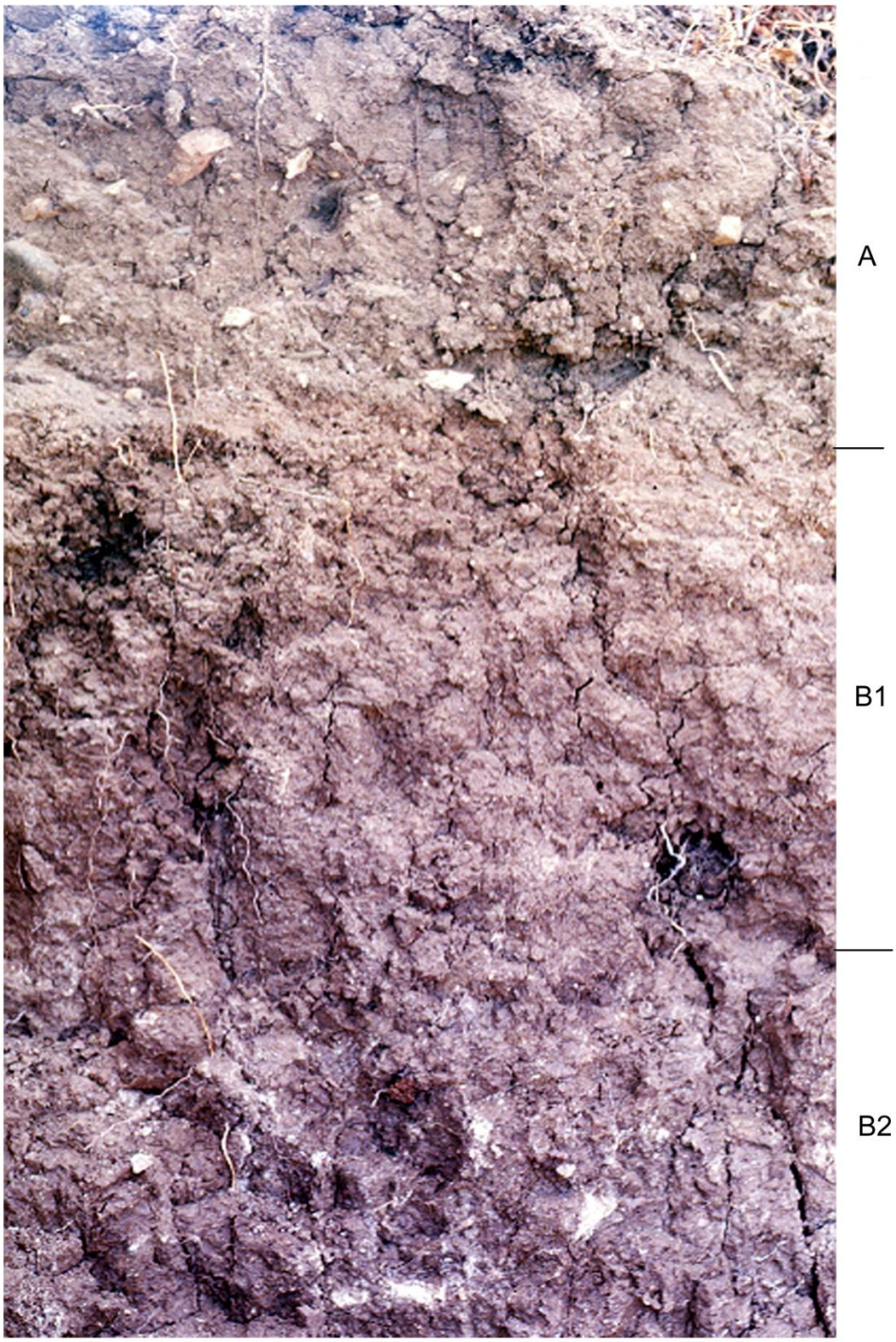
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR4/3	42,0	2	43,0	50	10,0	200	5,0	500	-1		1
10YR5/4	48,0	2	41,5	50	8,0	200	6,0	500	-1		1
2.5YR6/4	44,0	2	40,5	50	9,0	200	6,5	500	-1		1
10YR5/3	44,0	2	40,5	50	9,0	200	6,5	500	-1		1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,8	1			3,6	6	-1		7,8	15	1	17	<4
0,9	1			2,8	6	-1		8,0	15	1	17	<4
0,5	1			4,5	6	-1		8,2	15	1	17	<4
0,5	1			4,5	6	-1		8,2	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	30,0	19	20,2	19	1,62	19	1,74	19	38,4	22	-1	
	36,0	19	22,4	19	1,25	19	1,96	19	41,2	22	-1	
	35,0	19	22,3	19	1,20	19	1,87	19	40,0	22	-1	
	34,2	19	21,6	19	1,12	19	1,80	19	38,1	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		18,0		46,1	42,5	26	1,40	28
-1		-1		-1		20,0		48,2	41,6	26	1,50	28
-1		-1		-1		20,00		48,1	41,0	26	1,60	28
-1		-1		-1		17,00		46,3	42,8	26	1,50	28

CAMBISOLS - Profile : 4 (CM.ca) **- number on the map 26**



CAMBISOLS Profile 4 (CM.ca) calcaric - CAMBISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	4	CM	Cmca		CM	c		34°58'50"	32°28'50"	208

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5810	0	0	0	3	-1	-1	-1	A	25	6
					-1	-1	-1	B1	60	5
					-1	-1	-1	B2	120	5

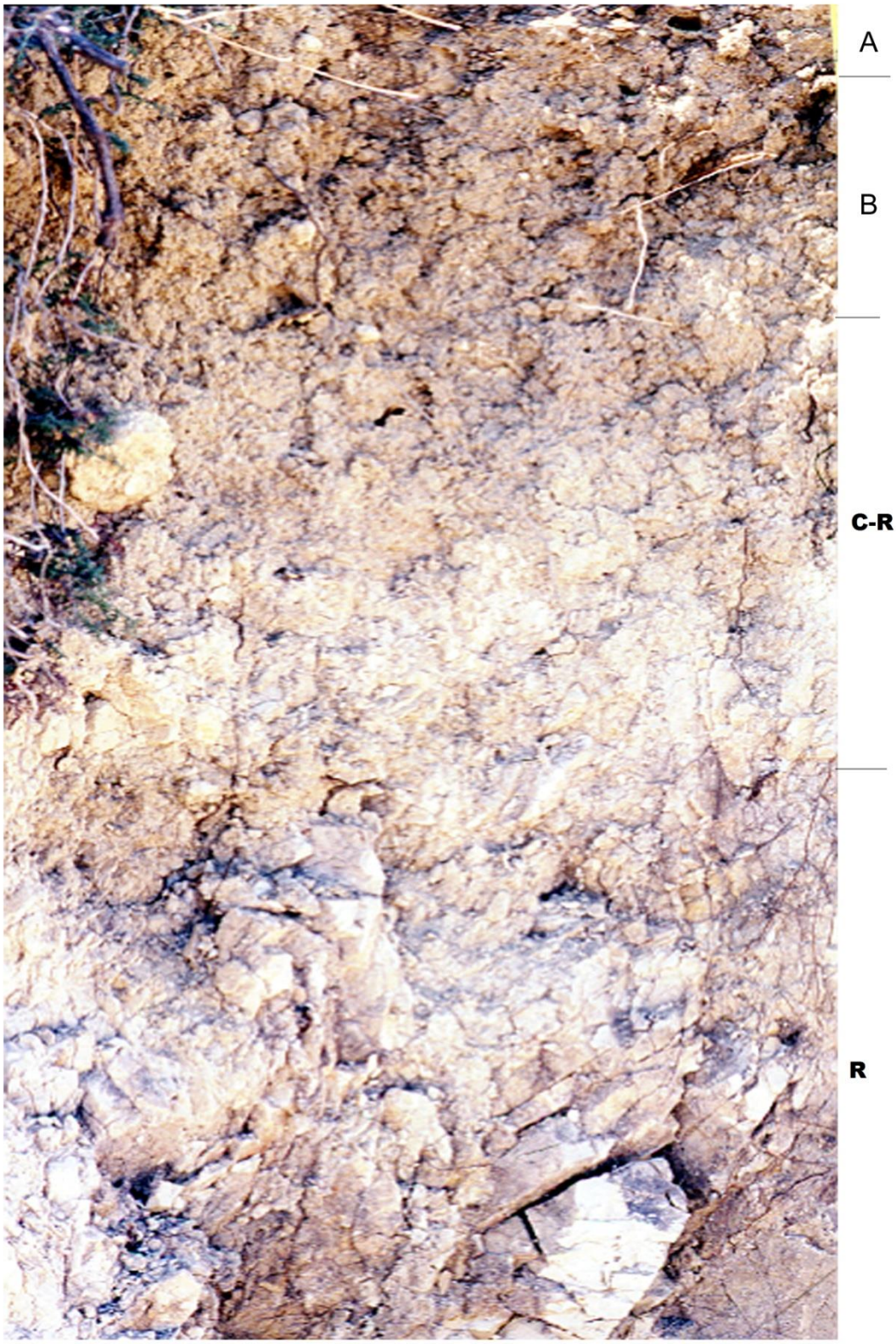
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2.5Y6/4	30,5	2	37,5	50	17,0	200	15,0	500	-1		1
10YR5/4	36,0	2	36,0	50	16,0	200	12,0	500	-1		1
10YR5/6	38,0	2	30,5	50	17,0	200	16,0	500	-1		1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,8	1	-1		20,0	6	-1		8,2	15	1	17	<4
0,5	1	-1		18,0	6	-1		8,5	15	1	17	<4
0,5	1	-1		22,0	6	-1		8,3	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	31,5	19	2,5	19	0,2	19	0,5	19	29,8	22	-1	
	30,0	19	3,6	19	0,7	19	1,6	19	30,3	22	-1	
	35,6	19	5,5	19	0,5	19	1,2	19	31,7	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		20,3		32,0	54,5	26	1,20	28
-1		-1		-1		23,6		28,0	50,6	26	1,30	28
-1		-1		-1		18,5		34,5	56,5	26	1,00	28

CAMBISOLS - Profile : 5 (CM.le.ca)- **number on the map 27**



CAMBISOLS Profile 5 (CM. le.ca) calcaric- leptic - CAMBISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	5	CM	Cmle		CM	c		34°49'30"	32°44'00"	446

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5820	0	0	0	7	-1	-1	-1	A	5	6
					-1	-1	-1	B	25	4
					-1	-1	-1	C-R	30	4
								R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR6/3	39,0	2	37,0	50	9,5	200	14,5	500	-1		
10YR5/4	45,5	2	30,0	50	8,5	200	16,0	500	-1		
10YR7/3	42,0	2	31,5	50	16,5	200	10,0	500	-1		

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,0	1	-1		41,5	6	-1		8,2	15	1	17	<4
0,7	1	-1		45,2	6	-1		8,4	15	1	17	<4
0,5	1	-1		51,0	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	44,0	19	4,0	19	1,8	19	0,8	19	40,6	22	-1	
	52,0	19	5,5	19	1,5	19	0,6	19	46,6	22	-1	
	48,0	19	3,5	19	1,6	19	0,5	19	43,6	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		23,8		38,6	49,4	26	1,35	28
-1		-1		-1		25,3		42,7	43,3	26	1,49	28
		-1		-1		27,2		41,8	42,0	26	1,50	28

CAMBISOLS - Profile : 6 (CM.vr)- **number on the map 28**

CAMBISOLS Profile 6 (CM. vr) verdic - CAMBISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	6	CM	CMvr		CM	r		35°10'00"	33°44'20"	182

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	3	-1	-1	-1	A	25	4
					-1	-1	-1	B1	80	5
					-1	-1	-1	B2-C	120	5

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5Y5/4	38,3	2	25,4	50	12,4	200	23,9	500	-1		0
10YR5/3	47,8	2	26,2	50	6,8	200	19,2	500	-1		0
10YR7/3	44,6	2	27,4	50	5,2	200	22,8	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,2	1			17,3	6	-1		8,5	15	1	17	<4
1,0	1			23,4	6	-1		8,6	15	1	17	<4
0,5	1			24,5	6	-1		8,7	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	52,0	19	4,5	19	1,7	19	1,8	19	42,5	22	-1	
	48,0	19	6,8	19	0,7	19	3,7	19	37,2	22	-1	
	50,5	19	9,0	19	0,5	19	3,0	19	41,0	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		15,6		33,0	51,0	26	1,20	28
-1		-1		-1		17,1		37,5	48,5	26	1,30	28
-1		-1		-1		16,1		36,4	48,4	26	1,30	28

CAMBISOLS - Profile : 7 (CM.fv.ca) - **number on the map 29**

CAMBISOLS Profile 7 (CM. fv. ca) calcaric - fluvic - CAMBISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	7	CM	CMfv		CM	f		35°10'25"	33°04'35"	160

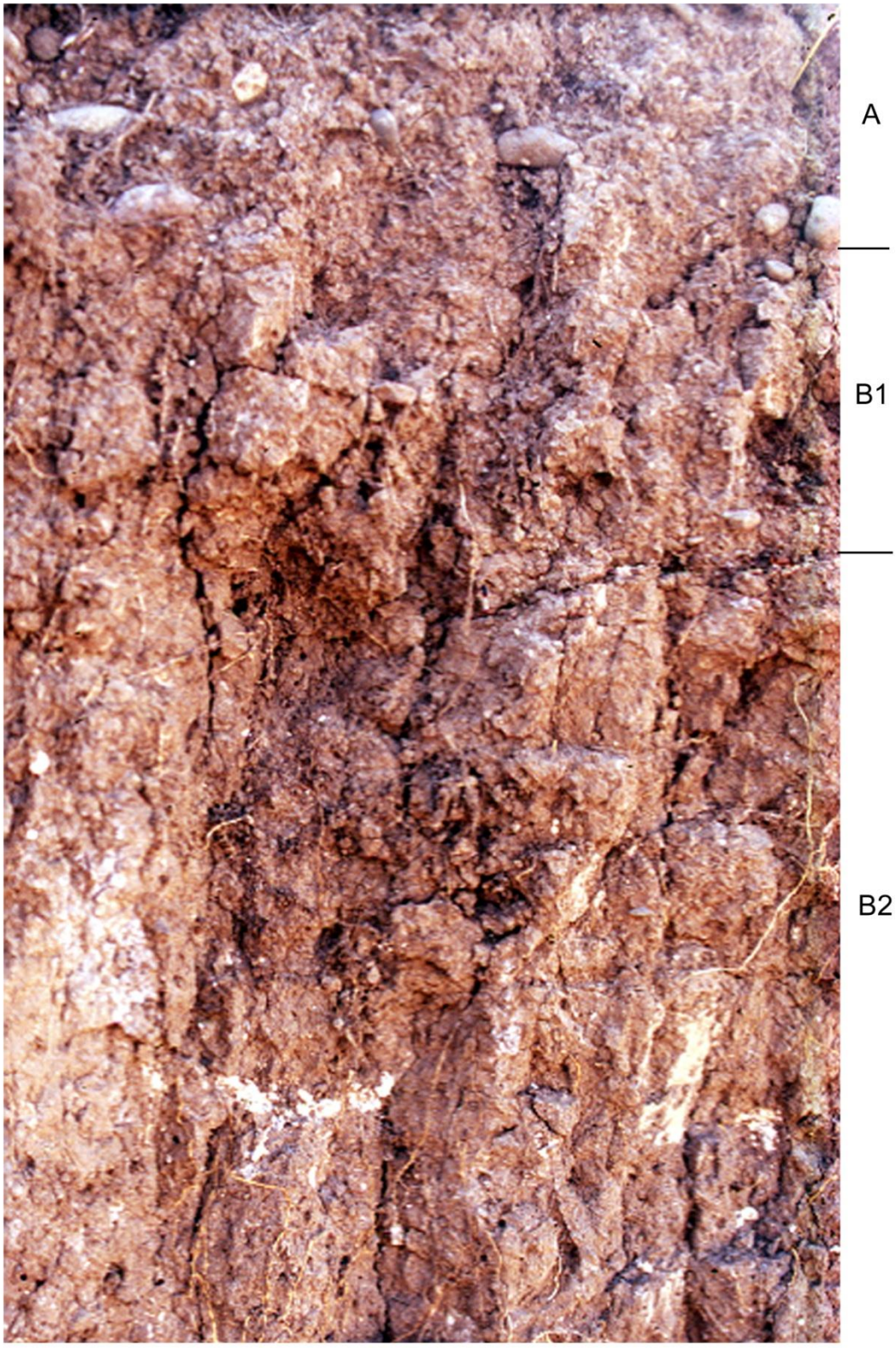
PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	3	-1	-1	-1	A	30	6
					-1	-1	-1	B	75	4
								fv		
					-1	-1	-1	B	100	4

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR5/3	31,6	2	28,0	50,0	20,5	200	19,9	500	-1		**2**
10YR4/3	35,7	2	26,0	50,0	28,0	200	10,3	500	-1		1
10YR4/4	33,5	2	22,5	50,0	30,0	200	14,0	500	-1		1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,3	1	-1		22,5	6	-1		8,9	15	1	17	<4
0,9	1	-1		23,0	6	-1		8,3	15	1	17	<4
0,6	1	-1		21,5	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	48,5	19	8,5	19	0,6	19	1,3	19	38,0	22	-1	
	46,5	19	7,0	19	0,4	19	1,1	19	33,2	22	-1	
	45,0	19	7,5	19	0,3	19	1,3	19	32,5	22	-1	

CAMBISOLS - Profile : 8 (CM.cr.ca) **- number on the map 30**



CAMBISOLS Profile 8 (CM. cr.ca) calcaric - chromic - CAMBISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	8	CM	CMcr		CM	e		34°48'25"	33°30'40"	75

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	3	-1	-1	-1	A	25	4
					-1	-1	-1	B1	60	2
					-1	-1	-1	B2	120	2

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR4/2	38,0	2	34,5	50	8,0	200	19,5	500	-1		1
7,5YR4/4	41,0	2	32,0	50	6,5	200	20,5	500	-1		1
7,5YR4/4	50,0	2	28,0	50	5,5	200	16,5	500	-1		1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,0	1	-1		16,0	6	-1		8,4	15	1	17	<4
0,8	1	-1		18,0	6	-1		8,5	15	1	17	<4
0,5	1	-1		17,5	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	47,0	19	9,5	19	2,6	19	1,5	19	46,1	22	-1	
	46,0	19	7,8	19	2,5	19	1,1	19	43,6	22	-1	
	46,0	19	5,5	19	2,3	19	0,7	19	42,0	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		20,3		35,5	57,6	26	1,15	28
-1		-1		-1		26,6		43,0	49,6	26	1,38	28
-1		-1		-1		26,5		43,8	50,3	26	1,36	28

Other profiles

Profile 9

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	9	CM	CMvr		CM	v		34°50'00"	32°38'30"	382
	31									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
4410	0	0	0	4	-1	-1	-1	A	35	4
					-1	-1	-1	B	70	4
					-1	-1	-1	C	110	4

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5YR4/3	40,2	2	27,4	50	21,8	200	10,6	500	-1		4
2,5YR3/6	42,5	2	32,5	50	14,6	200	10,4	500	-1		3
7,5YR3/2	42,4	2	30,6	50	14,7	200	12,3	500	-1		3

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,8	1	-1		10,5	6	-1		8,3	15	1	17	<4
0,5	1	-1		8,6	6	-1		8,0	15	1	17	<4
0,3	1	-1		5,2	6	-1		8,0	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	36,0	19	4,0	19	0,3	19	1,7	19	35,0	22	-1	
	32,5	19	4,6	19	0,5	19	1,9	19	32,0	22	-1	
	40,4	19	5,5	19	0,3	19	2,3	19	37,2	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		-1	-1		-1	
-1		-1		-1		-1		-1	-1		-1	
-1		-1		-1		-1		-1	-1		-1	

Profile 10

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	10	CM	CMvr		CM	v		34°04'40"	33°36'00"	22
	32									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	3	-1	-1	-1	A	30	4
					-1	-1	-1	B	70	2
					-1	-1	-1	C	120	5

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5YR4/4	46,5	2	36,0	50	9,5	200	8,0	500	-1		
10YR4/3	48,0	2	36,5	50	8,5	200	7,0	500	-1		
10YR5/2	50,0	2	36,0	50	6,0	200	8,0	500	-1		

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,6	1	-1		12,5	6	-1		8,5	15	1	17	<4
0,5	1	-1		18,5	6	-1		8,6	15	1	17	<4
0,4	1	-1		16,0	6	-1		8,6	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	55,5	19	7,6	19	2,5	19	2,1	19	48,6	22	-1	
	48,2	19	5,8	19	1,5	19	1,5	19	45,5	22	-1	
	52,8	19	9,9	19	2,2	19	1,5	19	44,5	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		22,0		35,5	47,0	26	1,17	28
-1		-1		-1		24,3		37,6	45,3	26	1,28	28
-1		-1		-1		27		39,0	45,6	26	1,30	28

Profile 11

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	11	CM	Cmca		CM	c		34°49'30"	33°30'00"	110
	33									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2141	0	0	0	7	-1	-1	-1	A	30	6
					-1	-1	-1	B	70	4
					-1	-1	-1	C	100	4

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR5/4	24,5	2	45,5	50	18,0	200	12,0	500	-1		
10YR6/4	28,0	2	44,0	50	20,0	200	8,0	500	-1		
10YR7/3	38,5	2	36,5	50	15,0	200	10,0	500	-1		

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,5	1	-1		65,0	6	-1		8,2	15	1	17	<4
1,4	1	-1		70,0	6	-1		8,4	15	1	17	<4
0,4	1	-1		56,6	6	-1		8,2	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	25,0	19	2,5	19	1,5	19	1,0	19	26,0	22	-1	
	23,0	19	1,5	19	0,5	19	0,5	19	23,5	22	-1	
	27,0	19	2,0	19	0,5	19	0,5	19	26,0	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		-1	54,3	26	1,20	28
-1		-1		-1		-1		-1	-1		-1	
-1		-1		-1		-1		-1	-1		-1	

Profile 12

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	12	CM	Cmle		CM			34°59'20"	33°51'55"	120
	34									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
1110	0	0	0	3	-1	-1	-1	A	25	6
					-1	-1	-1	B	50	4
					-1	-1	-1	C	90	7

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR5/4	24,4	2	18,5	50	43,5	200	13,6	500	-1		1
7,5YR4/4	38,2	2	16,6	50	35,2	200	10,0	500	-1		1
10YR7/4	45,5	2	20,5	50	23,6	200	10,4	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,2	1	-1		31,5	6	-1		8,5	15	1	17	<4
0,5	1	-1		30,8	6	-1		8,4	15	1	17	<4
0,2	1	-1		62,5	6	-1		8,6	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	36,0	19	5,0	19	1,5	19	1,9	19	34,5	22	-1	
	40,0	19	6,0	19	0,5	19	1,7	19	38,2	22	-1	
	45,0	19	4,0	19	0,2	19	1,9	19	41,3	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		12,5		30,8	57,2	26	1,20	28
-1		-1		-1		14,0		34,9	51,3	26	1,30	28
-1		-1		-1		14,5		36,7	49,2	26	1,20	28

Profile 13

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	13	CM	Cmca		CM	c		34°44'30"	33°19'00"	70
	35									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	3	-1	-1	-1	A	25	7
					-1	-1	-1	B	70	4
					-1	-1	-1	C	120	8

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
10YR5/3	43,0	2	34,8	50	20,4	200	1,8	500	-1		1
10YR5/3	45,6	2	35,8	50	17,6	200	1,0	500	-1		0
2,5Y6/4	37,5	2	38,5	50	22,8	200	1,2	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,3	1	-1		39,0	6	-1		8,4	15	1	17	<4
0,8	1	-1		42,5	6	-1		8,6	15	1	17	<4
0,5	1	-1		52,6	6	-1		8,7	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	37,0	19	6,5	19	1,9	19	0,8	19	35,0	22	-1	
	36,0	19	6,0	19	0,6	19	1,9	19	34,3	22	-1	
	48,0	19	3,0	19	0,2	19	1,4	19	38,0	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		18,2		38,6	47,9	26	1,30	28
-1		-1		-1		17,6		39,4	48,6	26	1,30	28
-1		-1		-1		19,5		37,8	47,0	26	1,40	28

Profile 14

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	14	CM	CMvr		CM	v		34°44'00"	32°28'15"	25
	36									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	12	-1	-1	-1	A	40	4
					-1	-1	-1	B1	90	5
					-1	-1	-1	B2	120	2

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
7,5YR4/4	49,4	2	26,0	50	18,0	200	6,6	500	-1		1
5YR4/4	51,5	2	25,9	50	16,8	200	5,8	500	-1		0
2,5YR4/4	53,2	2	24,8	50	17,2	200	4,8	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,4	1	-1		15,3	6	-1		8,1	15	1	17	<4
0,6	1	-1		13,0	6	-1		8,2	15	1	17	<4
0,3	1	-1		11,4	6	-1		8,2	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	50,0	19	7,0	19	1,8	19	2,0	19	42,0	22	-1	
	47,3	19	7,5	19	1,5	19	2,2	19	40,6	22	-1	
	49,0	19	8,2	19	1,0	19	2,6	19	41,5	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		16,5		39,0	55,0	26	1,20	28
-1		-1		-1		19,7		45,0	47,2	26	1,40	28
-1		-1		-1		20,5		48,0	48,0	26	1,40	28

CALCISOLS (CL)

Other soils having

1. a calcic or petrocalcic horizon within 100 cm of the surface; and
2. no diagnostic horizons other than an ochric or cambic horizon, an agric horizon which is calcareous, a vertic horizon, or a gypsic horizon underlying a netrocalcic horizon.

Calcic Horizon

General description. The calcic horizon (from L. Calx, lime) is a horizon which secondary calcium carbonate ($CaCO_3$) has accumulated either in a **diffuse form**
(Calcium carbonate present only in the form of fine perticles of 1 mm or less, dispersed in the matrix) or as **discontinuous concentrations** (pseudomycelia, cutans, soft and hard nodules, or veins). The accumulation may be in the parent material, or in subsurface horizons, but it can also accur in surface horizons as a result of erosion. If the accumulation of soft carbonates becomes such that all or most of the pedological and/or lithologigal structures disappear and **continuous concentrations** of calcium carbonate prevail, the horizon is named a hypercalcic horizon (from Gr.**hyper**, superseding, and **L. Calxis,** lime).

Diagnostic criteria. A calcic horizon must have:

1. calcium carbonate equivalent in the five earth fraction of 15 percent or more (for hypercalcic horizons more than 50 per cent calcium carbonate in the five earth fraction); and
2. thickness at least 15 cm, also for the hypercalcic horizon.

Field identification. The presence of calcium carbonate can be identified in the field using a 10% HCl solution. The degree of effervescence (audible only, visible as individual bubbles, or foam-like) is an indication of the amount of lime present. This test is important if only diffuse distributions are present.

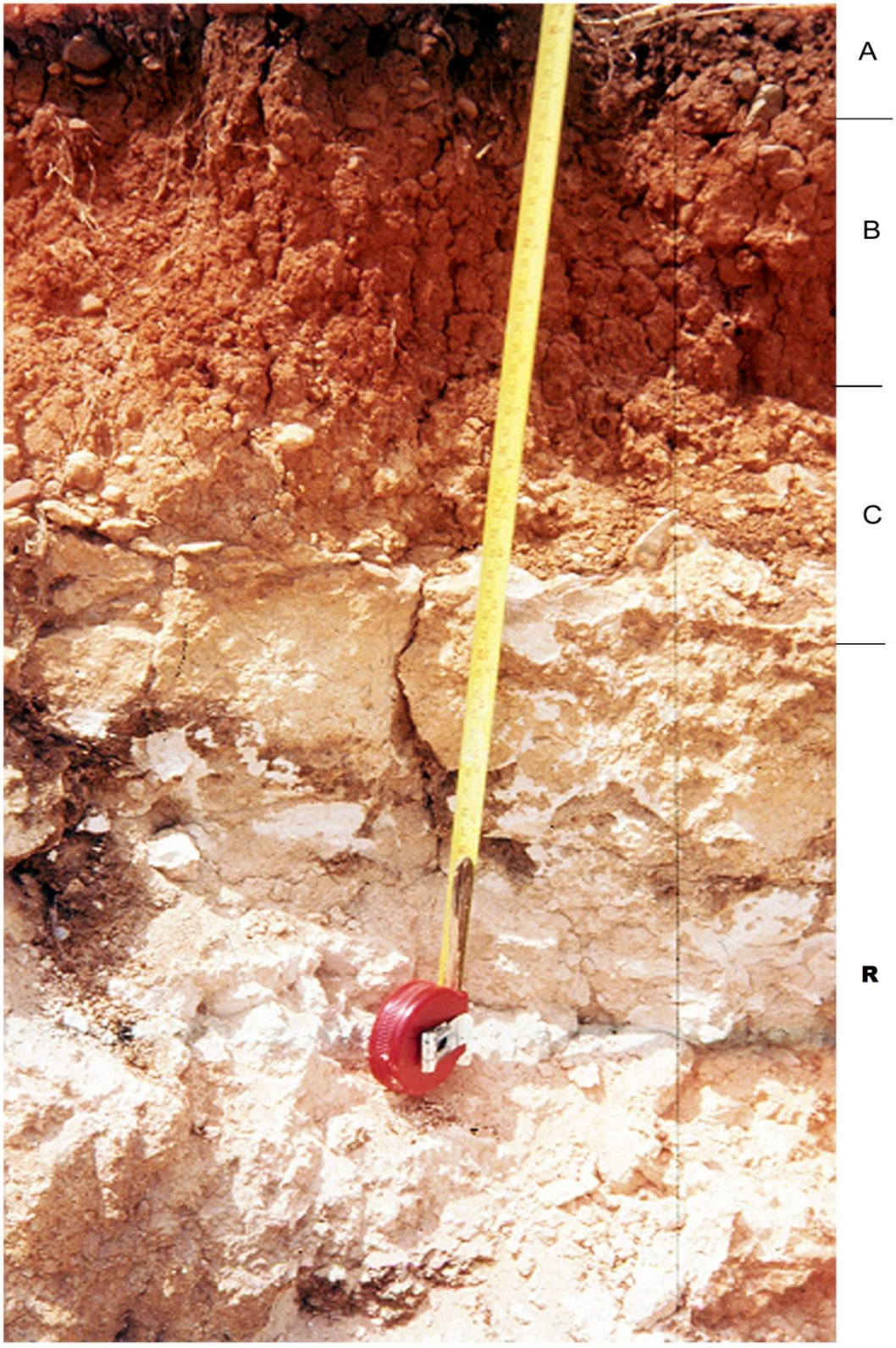
Petrocalcic horizon

General discription. A petrocalcic horizon (from GR.petros, rock, and L. Calx, lime) is an indurate calcic horizon, which is cemented by calcium carbonate and, in places, by calcium and some magnesium carbonate. It is either massive or platy in nature, and extremely hard.

Τα εδάφη αυτά, κοινώς ονομαζόμενα “Μεσογειακά κόκκινα εδάφη” χαρακτηρίζονται από ένα calcic ή petrocalcic C ορίζοντα (Καυκάλλλα), που σχηματίζεται σε μικρό βάθος από την επιφάνεια. Αυτά σχηματίζονται κυρίως πάνω σε ασβεστούχες εναποθέσεις συναγμάτων ή σε εναποθέσεις “χαβάρας” .

Συναντώνται κυρίως σε χαμηλά οροπέδια (plateau) των κεντρικών και νοτιανατολικών πεδινών περιοχών.

CALCISOLS - Profile 1 (CL.ptp) - **number on the map 37**



CALCISOLS Profile 1 (CL.ptp) epipetric - CALCISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	1		CL	CLptp		CL	p	35˚08'20"	33˚10'40"	280
	37									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2100	0	0	0	4	-1	-1	-1	A	15	6
					-1	-1	-1	B	40	2
					-1	-1	-1	C	50	4
								R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5YR5/6	39,4	2	23,6	50	29,0	200	8,0	500	-1		1
2,5YR4/6	43,4	2	26,6	50	23,2	200	6,8	500	-1		1
2,5YR6/8	26,6	2	45,5	50	16,7	200	11,2	500	-1		1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,5	1	-1		2,5	6	-1		8,0	15	1	17	<4
0,8	1	-1		5,3	6	-1		8,3	15	1	17	<4
0,3	1	-1		50,5	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	37,0	19	4,0	19	1,0	19	1,6	19	33,6	22	-1	
	35,0	19	3,5	19	0,7	19	0,8	19	30,6	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		21,3		44,0	46,8	26	1,40	28
-1		-1		-1		23,2		46,3	40,5	26	1,50	28

CALCISOLS - Profile : 2 (CL.ptp.sk) - **number on the map 38**

CALCISOLS Profile 2 (CL.ptp.sk) skeletic- epipetcic - CALCISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	2	CL	CLptp		LP	p		35˚17'00"	33˚32'40"	842
	38									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2111	0	0	0	9	-1	-1	-1	A	20	6
					-1	-1	-1	A-C	45	7
					-1	-1	-1	R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5YR3/2	35,2	2	23,3	50	15,0	200	26,5	500	-1		4
2,5YR4/6	34,2	2	25,4	50	30,4	200	10,0	500	-1		6

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
3,8	1	-1		12,0	6	-1		7,8	15	1	17	<4
1,5	1	-1		17,0	6	-1		8,6	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	22,3	19	18,0	19	0,3	19	1,0	19	32,3	22	-1	
	-1		-1,0		-1,0		-1,0		-1,0		-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1								
-1		-1		-1		-1		-1	-1		-1	

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	3	CL	CLptp		CL	P		34˚54'00"	32˚20'50"	110
	39									
CY	4	CL	CLptp		CL	P		35˚03'00"	32˚53'55"	54
	40									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5421	0	0	0	16	-1	-1	-1	A	15	4
					-1	-1	-1	B	40	2
					-1	-1	-1	C	50	4
					-1	-1	-1	D		
1110	0	0	0	16	-1	-1	-1	A	16	4
					-1	-1	-1	B	35	2
					-1	-1	-1	C	50	2

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5YR4/4	40,0	2	24,5	50	21,5	200	14,0	500	-1		2
2,5YR4/6	46,0	2	26,0	50	18,0	200	10,0	500	-1		1
5YR5/4	38,5	2	30,0	50	23,5	200	8,0	500	-1		1
2,5YR3/4	38,0	2	14,0	50	30,0	200	18,0	500	-1		1
2,5YR4/4	54,0	2	17,0	50	20,5	200	8,5	500	-1		1
5YR4/4	50,5	2	15,0	50	20,5	200	14,0	500	-1		1

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,8	1	-1		15,0	6	-1		8,3	15	1	17	<4
0,9	1	-1		22,0	6	-1		8,4	15	1	17	<4
0,5	1	-1		32,0	6	-1		8,8	15	1	17	<4
2,5	1	-1		3,0	6	-1		8,4	15	1	17	<4
0,8	1	-1		2,5	6	-1		8,3	15	1	17	<4
0,6	1	-1		4	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	44,0	19	5,2	19	1,5	19	2,0	19	42,5	22	-1	
	36,3	19	4,3	19	0,6	19	2,9	19	33,4	22	-1	
	40,6	19	4,0	19	0,6	19	2,9	19	37,5	22	-1	
	37,0	19	4,0	19	1,0	19	1,6	19	33,6	22	-1	
	35,0	19	3,5	19	0,7	19	0,8	19	30,6	22	-1	
	44,5	19	5,0	19	0,5	19	1,2	19	40,7	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		20,3		34,4	50,6	26	1,40	28
-1		-1		-1		22,5		42,0	46,3	26	1,50	28
-1		-1		-1		21,5		39,2	48,8	26	1,30	28
-1		-1		-1		21,3		44,0	46,8	26	1,40	28
-1		-1		-1		23,2		46,3	40,5	26	1,50	28
-1		-1		-1		22,4		46,5	43,2	26	1,40	28

LUVISOLS (LV)

Soils having an argic horizon with a cation axchange capacity (by 1 M NH_4 OA_C) equal to or more than 24 $cmol_c$ kg^{-1} clay throughout.
They have a strong brown to red argic B horizon, showing usually vertic properties.

Argic horizon

General description. The argic horizon (from L. Argilla, white clay) is a subsurface horizon which has distinctly higher clay content than the overlying horizon. The textural differentiation may be caused by an illuvial accumulation of clay, by predominant pedogenetic formation of clay in the subsoil or destruction of clay in the surface horizon, by selective surface erosion of clay, by biological activity, or by a combination of two or more of these different processes. Sedimentation of surface materials which are coarser than the subsurface horizon may enhance a pedogenetic textural differentiation. However, a mere lithological discontinuity, such as may occur in alluvial deposits, does not qualify as an argic horizon.

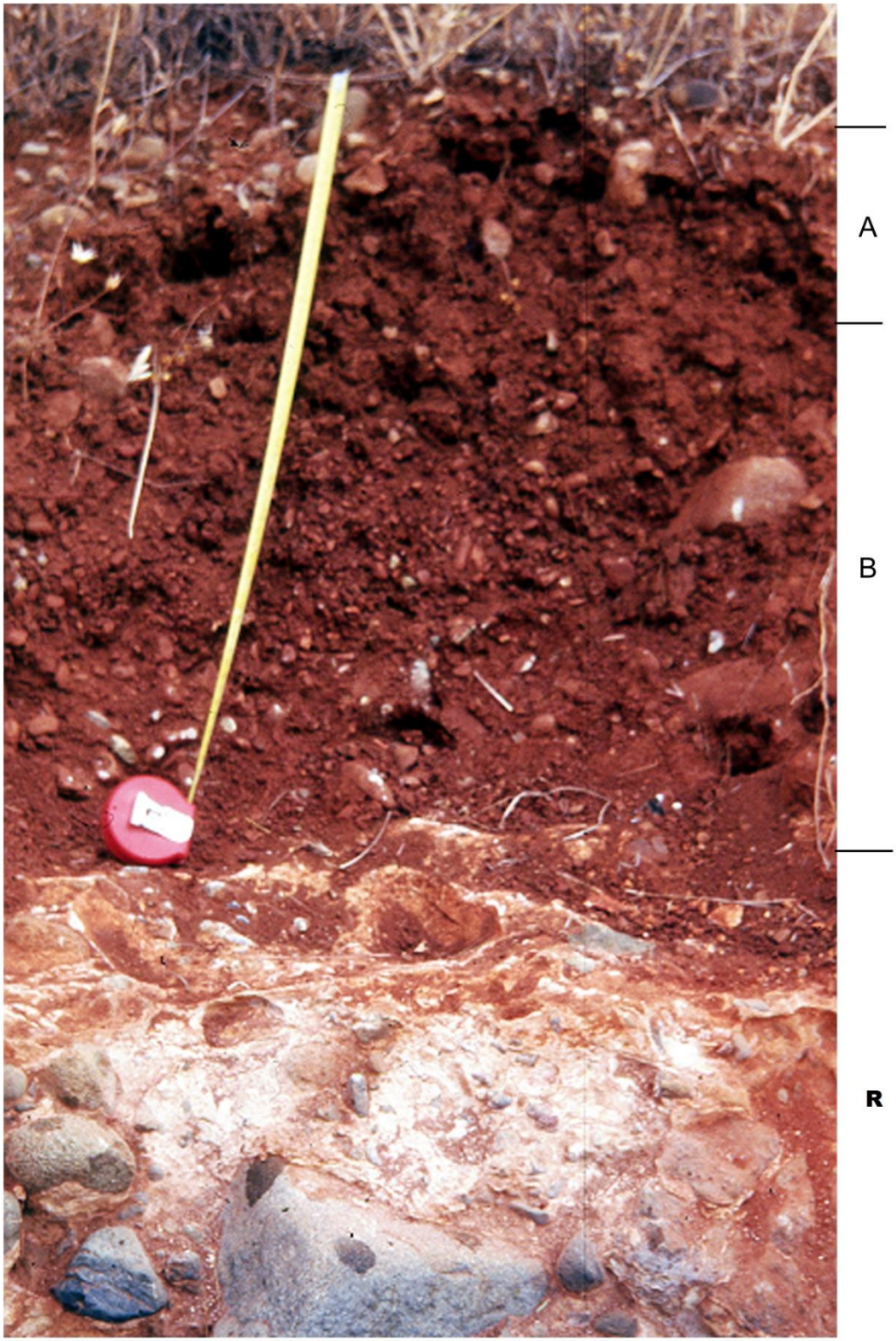
Diagnostic criteria. An argic horizon must have:

1. texture of sandy loam or finer and at least 8 percent clay in the fine earth fraction and
2. more total clay than an overlying coarser textured horizon (exclusive of differences which result from a lithological discontinuity only) such that:

Τα LUVISOLS είναι εδάφη εξελιγμένα που ανέπτυξαν ένα αργιλικό Β ορίζοντα.

Είναι κυρίως κόκκινα εδάφη, που σχηματίστηκαν πάνω σε συνάγματα ή σε δευτερογενείς ασβεστούχες εναποθέσεις.
Σε ορισμένες περιπτώσεις παρουσιάζουν ρωγμές, λόγω της συγκέντρωσης και το είδος της αργίλου.

LUVISOLS - Profile : 1 (LV.cr.le) - **number on the map 41**



LUVISOLS Profile 1 (LV.cr.le) leptic - chromic - LUVISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	1	LV	LVcc		LVP	g		35˚07'30"	33˚01'30"	230

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
1110	0	0	0	12	-1	-1	-1	A	25	4
					-1	-1	-1	B	58	2
								R		

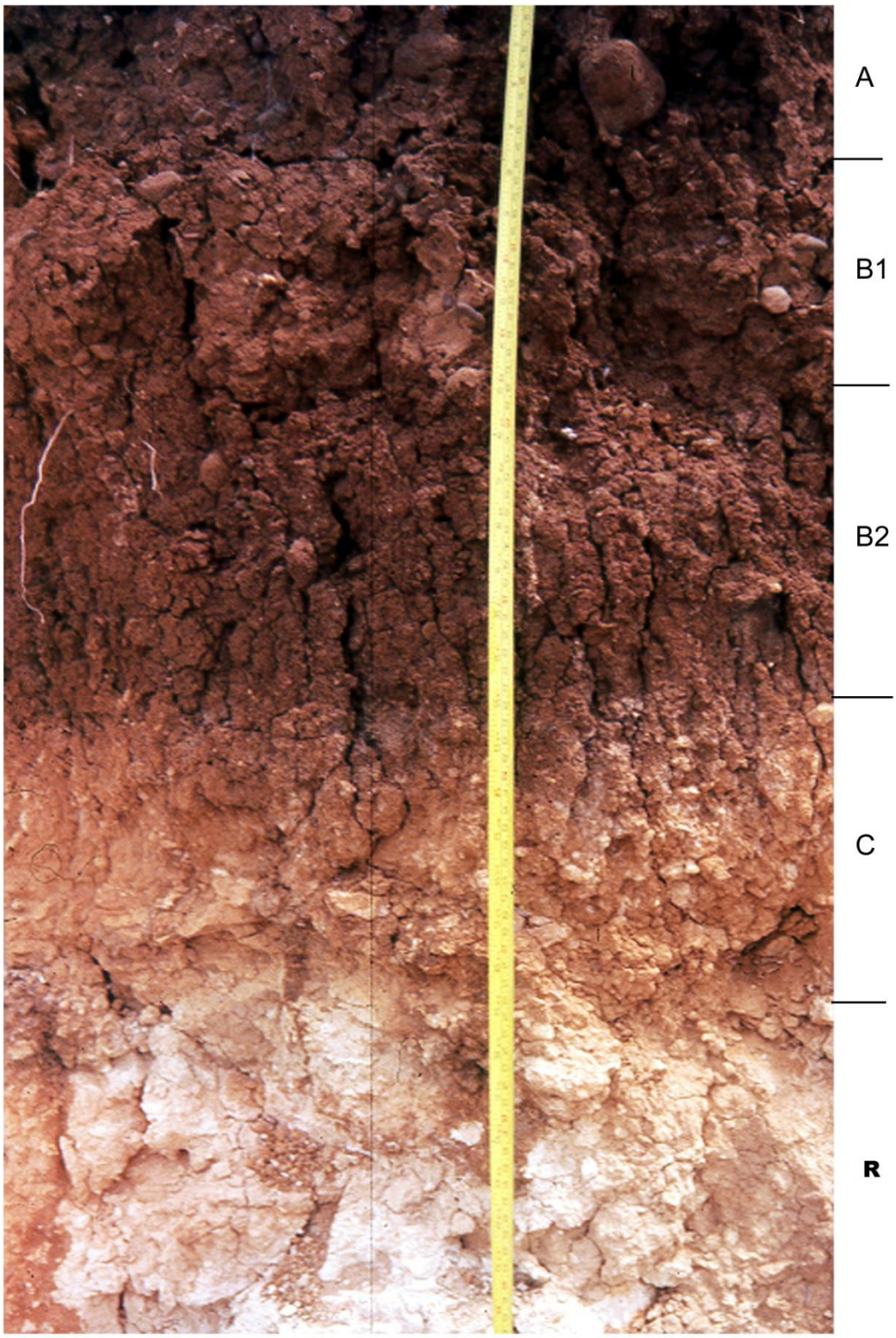
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5YR4/6	34,2	2	25,4	50	30,4	200	10,0	500	-1		2
7,5R3/4	46,3	2	15,4	50	25,8	200	12,5	500	-1		4

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,5	1	-1		17,0	6	-1		8,6	15	1	17	<4
0,8	1	-1		8,5	6	-1		8,4	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	43,5	19	2,5	19	1,6	19	0,3	19	37,8	22	-1	
	40,2	19	4,5	19	1,0	19	0,2	19	34,5	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		18,0		45,0	45,8	26	1,30	28
-1		-1		-1		18,2		46,2	43,5	26	1,40	28

LUVISOLS - Profile : 2 (LV.cc) **-number on the map 42**



LUVISOLS Profile 2 (LV. cc) calcic - LUVISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	2	LV	LVcc		LV	k		35˚02'20"	33˚47'15"	80
	42									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
1110	0	0	0	16	-1	-1	-1	A	25	4
					-1	-1	-1	B_1	60	2
					-1	-1	-1	B_2	90	5
					-1	-1	-1	C		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5YR4/4	37,0	2	31,5	50	17,5	200	14,0	500	-1		2
2YR3/6	48,0	2	26,5	50	15,0	200	10,5	500	-1		1
5YR4/6	52,4	2	28,5	50	16,0	200	11,5	500	-1		1
2,5YR4/6	44,4	2	25,6	50	19,4	200	10,6	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,5	1	-1		4,5	6	-1		7,8	15	1	17	<4
0,5	1	-1		3,8	6	-1		8,2	15	1	17	<4
0,5	1	-1		6,2	6	-1		8,4	15	1	17	<4
0,5	1	-1		28,0	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	37,5	19	4,5	19	2,5	19	1,5	19	35,0	22	-1	
	42,0	19	7,6	19	1,3	19	1,9	19	39,2	22	-1	
	35,0	19	5,3	19	0,5	19	1,5	19	32,3	22	-1	
	45,0	19	11,0	19	1,1	19	4,2	19	46,2	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		22,6		44,8	43,2	26	1,30	28
-1		-1		-1		25,2		46,5	38,0	26	1,40	28
-1		-1		-1		26,3		46,3	42,6	26	1,4	28
-1		-1		-1		18,0		46,1	-1		1,3	28

LUVISOLS - Profile : 3 (LU.vr.cr) **- number on the map 43**

LUVISOLS Profile 3 (LU. vr.cr) chromic - vertic - Luvisols

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	3	LV	LV vr		LV	v		34˚59'25"	33˚48'55"	82
	43									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
1110	0	0	0	16	-1	-1	-1	A	30	4
					-1	-1	-1	B_1	80	2
					-1	-1	-1	B_2	120	2

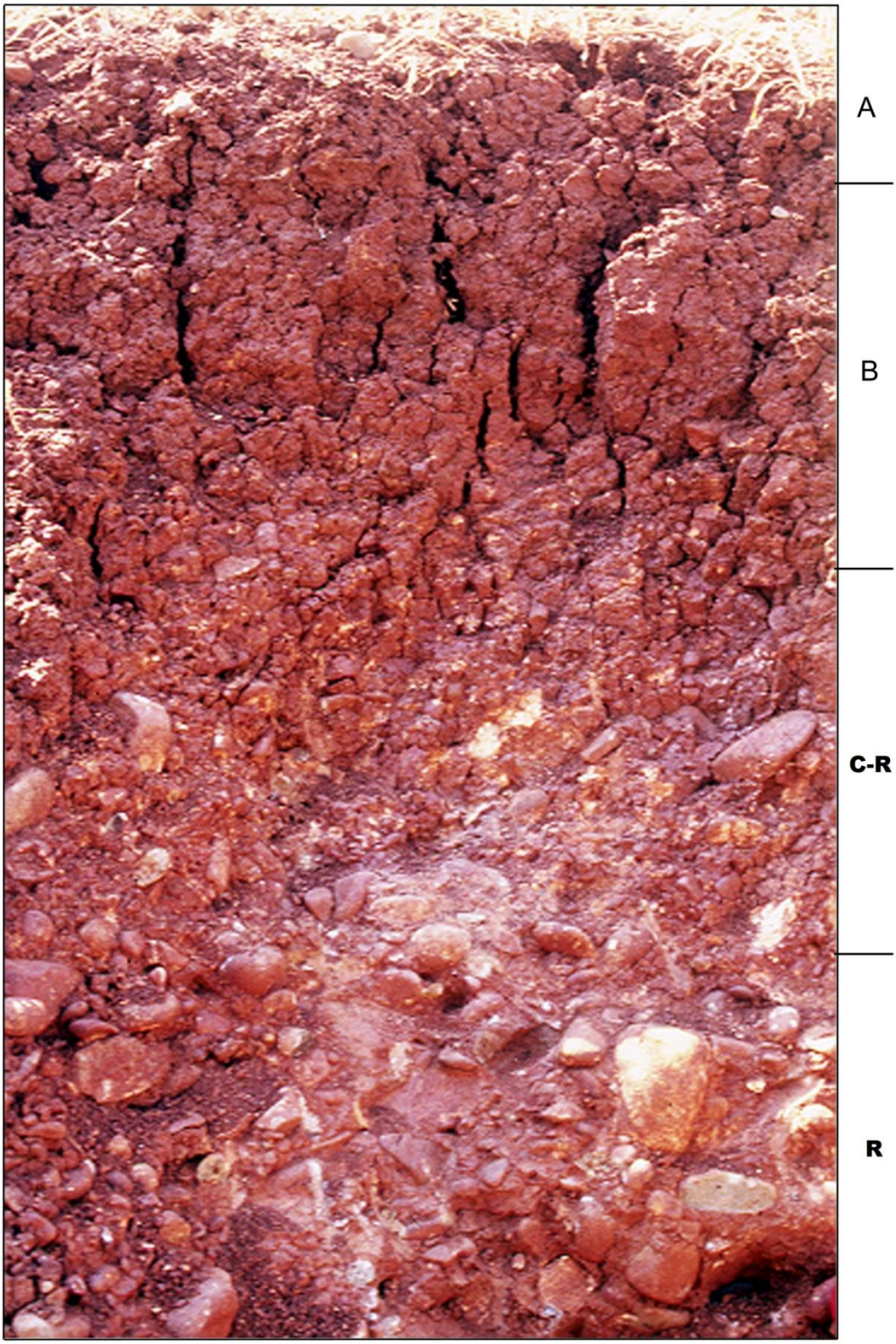
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
7,5YR5/4	45,0	2	14,5	50	30,5	200	10,0	500	-1		1
5YR4/4	57,0	2	12,0	50	26,0	200	5,0	500	-1		0
5YR5/4	62,0	2	13,5	50	20,5	200	4,0	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
2,5	1	-1		1,0	6	-1		8,1	15	1	17	<4
2,0	1	-1		2,5	6	-1		8,0	15	1	17	<4
0,5	1	-1		3,0	6	-1		8,2	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	32,3	19	7,2	19	1,8	19	1,9	19	36,7	22	-1	
	45,6	19	6,3	19	1,1	19	1,5	19	35,6	22	-1	
	36,8	19	5,5	19	0,7	19	2,2	19	33,9	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		19,6		39,5	48,5	26	1,30	28
-1		-1		-1		25,5		54,0	46,3	26	1,40	28
-1		-1		-1		23,2		52,3	47,2	26	1,4	28

LUVISOLS - Profile : 4 (LV.vr.ro) **- number on the map 44**



LUVISOLS Profile 4 (LV.vr.ro) rodic - vertic - LUVISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	4	LV	LV vr		LV	v		35˚10'10"	33˚10'10"	200
	44									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
1110	0	0	0	12	-1	-1	-1	A	15	4
					-1	-1	-1	B	60	2
					-1	-1	-1	C-R	90	8
								R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5YR4/3	43,8	2	18,4	50	25,8	200	12,0	500	-1		1
2,5YR4/4	47,4	2	14,4	50	31,8	200	15,2	500	-1		2
2,5YR4/6	39,5	2	11,5	50	26,5	200	20,5	500	-1		4

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,7	1	-1		2,0	6	-1		7,9	15	1	17	<4
1,0	1	-1		3,5	6	-1		8,2	15	1	17	<4
0,6	1	-1		14,0	6	-1		8,3	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	21,5	19	7,5	19	1,6	19	1,0	19	28,5	22	-1	
	26,0	19	12,0	19	0,8	19	1,2	19	34,2	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		-1	-1		-1	
-1		-1		-1		-1		-1	-1		-1	
-1		-1		-1		-1		-1	-1		-1	

Other profiles Profile 5

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	5	LV	LV cc		LV	k		35˚06'15"	33˚04'30"	230
	45									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	12	-1	-1	-1	A	15	4
					-1	-1	-1	B	35	2
					-1	-1	-1	C	40	5
					-1	-1	-1	D		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5YR5/4	38,5	2	34,0	50	15,5	200	12,0	500	-1		3
2,5YR3/4	48,0	2	25,0	50	17,0	200	10,0	500	-1		2
7,5YR3/6	40,5	2	35,0	50	15,5	200	9,0	500	-1		2

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
1,0	1	-1		10,5	6	-1		8,4	15	1	17	<4
0,7	1	-1		13,6	6	-1		8,3	15	1	17	<4
0,5	1	-1		31,5	6	-1		8,6	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	38,5	19	5,5	19	1,5	19	1,7	19	36,2	22	-1	
	45,6	19	8,3	19	0,6	19	1,5	19	45,1	22	-1	
	35,5	19	4,7	19	0,5	19	2,0	19	34,5	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		20,5		33,3	48,5	26	1,20	28
-1		-1		-1		24,3		44,4	42,2	26	1,30	28
-1		-1		-1		22,5		38,6	44,4	26	1,3	28

VERTISOLS (VR)

Other soils having

1. a vertic horizon within 100 cm from the soil surface; and
2. after the upper 20 cm have been mixed, 30percent or more clay in all horizons to a depth of 100 cm or more,
3. cracks which open and close periodically.

Vertic horizon

General discription. The vertic horizon (from L. vertere, to turn) is a clayey subsurface horizon which as a result of shrinking and swelling haw polished and grooved ped surfaces (slickenside), or wedge-shaped or parallelepiped structural aggregates.

Diagnostic criteria. A vertic horizon must have:

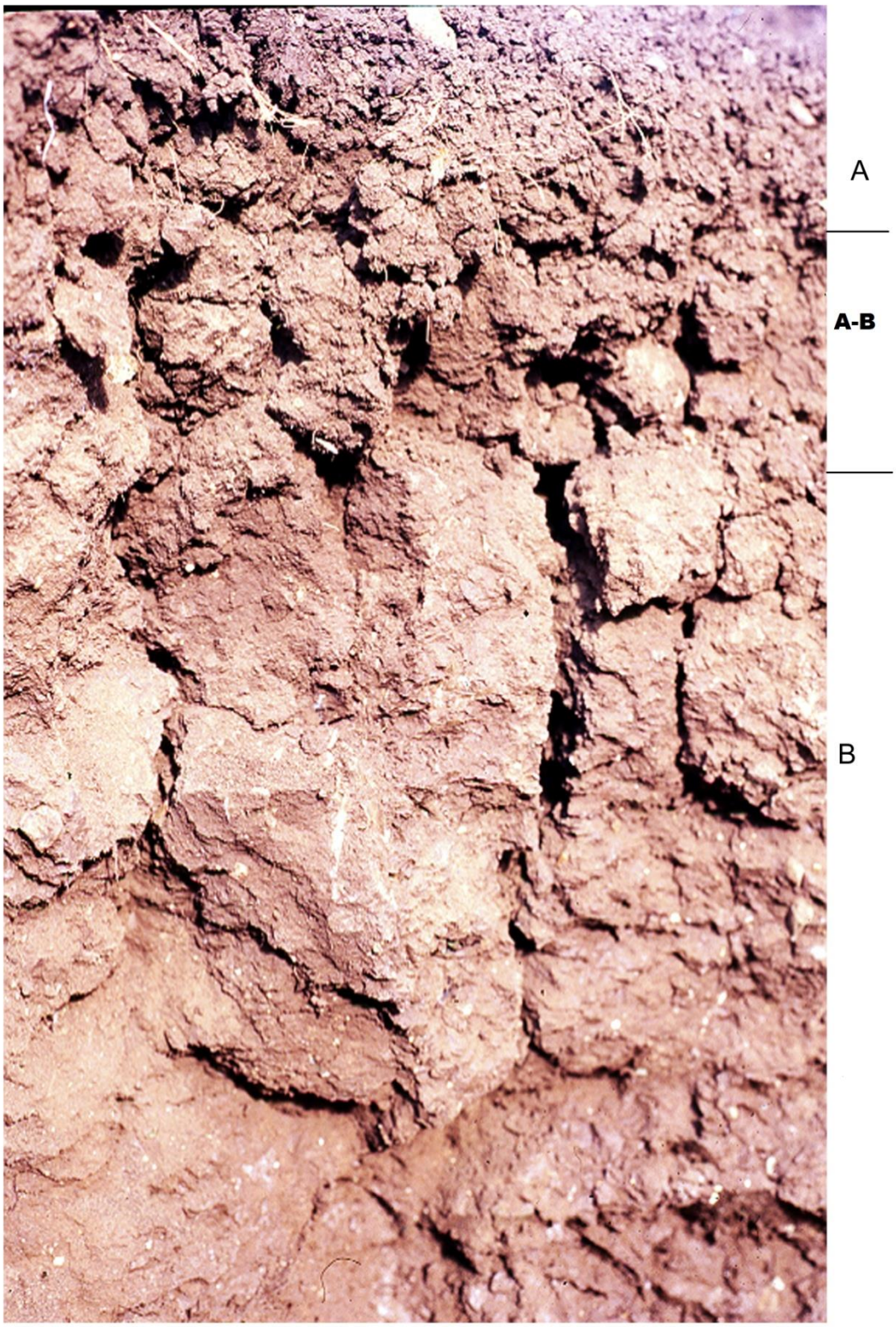
1. 30 percent or more clay throughout ; and
2. wedge- shaped or parallelepiped structural aggregates with a longitudinal 10° and 60° from the horizontal; and
3. intersecting slickenside and
4. a thickness of 25 cm or more.

Field identification. Vertic horizons are clayey, and have a hard to very hard consistency. When dry, vertic horizons show cracks of 1 or more centimeter wide. In the field the presence of polished, shiny ped surfaces (slickenside) which often sharp angles each other, is very obvious.

Τα εδάφη αυτά έχουν ένα ορίζοντα με μεγάλες ρωγμές (vertic horizon) που οφείλεται κυρίως στην ψηλή περιεκτικότητα και το είδος της αργίλου.

Συναντώνται σε χαμηλές περιοχές, που έχουν άμεση επίδραση από τις γεωλογικές στρώσεις του σχηματισμού των Μαμωνιών.

VERTISOLS - Profile : 2 (VR.cr.eu) - **number on the map 47**



VERTISOLS Profile 2 (VR. cr. eu) eutric - chromic - VERTISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	2	VR	VRcr		VR	x		34˚ 35˚	32˚32' 10"	403
	47									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
4410	0	0	0	4	-1	-1	-1	A	15	4
					-1	-1	-1	A-B	35	4
					-1	-1	-1	B	120	8

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5YR4/3	48.5	2	20.0	50	12.5	200,0	19,0	500	-1		1
5YR3/3	53,5	2	21,5	50	15,0	200,0	10,0	500	-1		0
5Y4/3	58,0	2	18,0	50	14,0	200,0	10,0	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,8	1	-1		2,5	6	-1		8,5	15	1	17	<4
0,5	1	-1		3,0	6	-1		8,6	15	1	17	<4
0,4	1	-1		3,0	6	-1		8,6	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	45,3	19	6,8	19	0,9	19	2,2	19	44,1	22	-1	
	50,2	19	10,5	19	0,7	19	3,1	19	48,8	22	-1	
	48,6	19	12,3	19	0,5	19	4,2	19	43,7	22	-1	

Water Retention of Soil Horizon WR								Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		22,2		35,0	53,2	26	1,28	28
-1		-1		-1		33,3		47,0	50,6	26	1,34	28
-1		-1		-1		-1		-1	-1		-1	

VERTISOLS - Profile : 3 (VR.cr) **- number on the map 48**

VERTISOLS Profile 3 (VR. cr) chromic - VERTISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	3	VR	VRcr		VR	v		34˚38'55"	32˚59'10"	40
	48									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5420	0	0	0	16	-1	-1	-1	A	20	4
					-1	-1	-1	B	45	2
					-1	-1	-1	B	120	5

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
5YR4/3	51,0	2	23,0	50	11,5	200	14,5	500	-1		0
5YR3/3	63,0	2	19,0	50	10,0	200	8,0	500	-1		0
5Y4/3	57,0	2	23,0	50	8,0	200	12,0	500	-1		0

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
0,8	1	-1		5,8	6	-1		8,0	15	1	17	<4
0,5	1	-1		3,4	6	-1		8,3	15	1	17	<4
0,4	1	-1		12,3	6	-1		8,5	15	1	17	<4

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	21,5	19	13,0	19	2,6	19	1,9	19	33,5	22	-1	
	23,8	19	14,0	19	2,0	19	2,3	19	36,3	22	-1	
	30,5	19	12,0	19	1,2	19	2,3	19	35,5	22	-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		18,6		38,3	44,5	26	1,20	28
-1		-1		-1		21,2		42,2	42,4	26	1,30	28
-1		-1		-1		20,3		41	43	26	1,3	28

SOLONCHAKS (SC)

Other soils having

1. a salic horizon starting within 50 cm from the soil surface; and
2. no diagnostic horizons other than a mollic, ochric, calcic, cambic,gypsic or vertic horizon.

Gleyic horizon.

General description. Soil materials develop gleyic properties (from the Russian local name gley, mucky soil mass) if they are completely saturated with groundwater, unless drained, for a period that allows reducing conditions to occur (this may range from a few days in the topics to a few weeks in other areas), and show a gleyic colour pattern.

Field identification. Iron and manganese (hydr)oxides in soils with gleyic properties are redidtributed to the outside of the peds and towards the soil surface from where oxygen is derived. The resulting colour pattern (reddish, brownish or yellowish colours near the ped surface or in the upper part of the profile, together with grayish/bluish colours in the inside)

Gypsiric soil material.
Definition. Gypsiric soil material (from L. gypsum) is mineral soil material which contains 5 percent or more gypsum (by volume).

Τα εδάφη αυτά συναντώνται σε μικρές περιοχές όπου υπάρχει υψηλή στάθμη νερού επί μεγάλο χρονικό διάστημα.
Περιέχουν συνήθως υψηλή συγκέντρωση αλάτων και λόγω των οξειδώσεων παρουσιάζουν ιδιάζοντες χρωματισμούς.

GYPSISOLS (GY)

Soils having a gypsic or petrogypsic horizon within 100 cm from the soil surface.
They have usually an orchic horizon and limited depth

SOLONCHALKS - Profile : 1 (SC.gl)- **number on the map 49**

A

C

SOLONCHALKS Profile 1 (Sc.ge) gleyic - SOLONCHALKS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	1	SC	SCgl		SC	g		34˚57'30"	33˚35'55"	13
	49									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
5500	0	0	0	0	-1	-1	-1	A	25	8
					-1	-1	-1	C	100	8

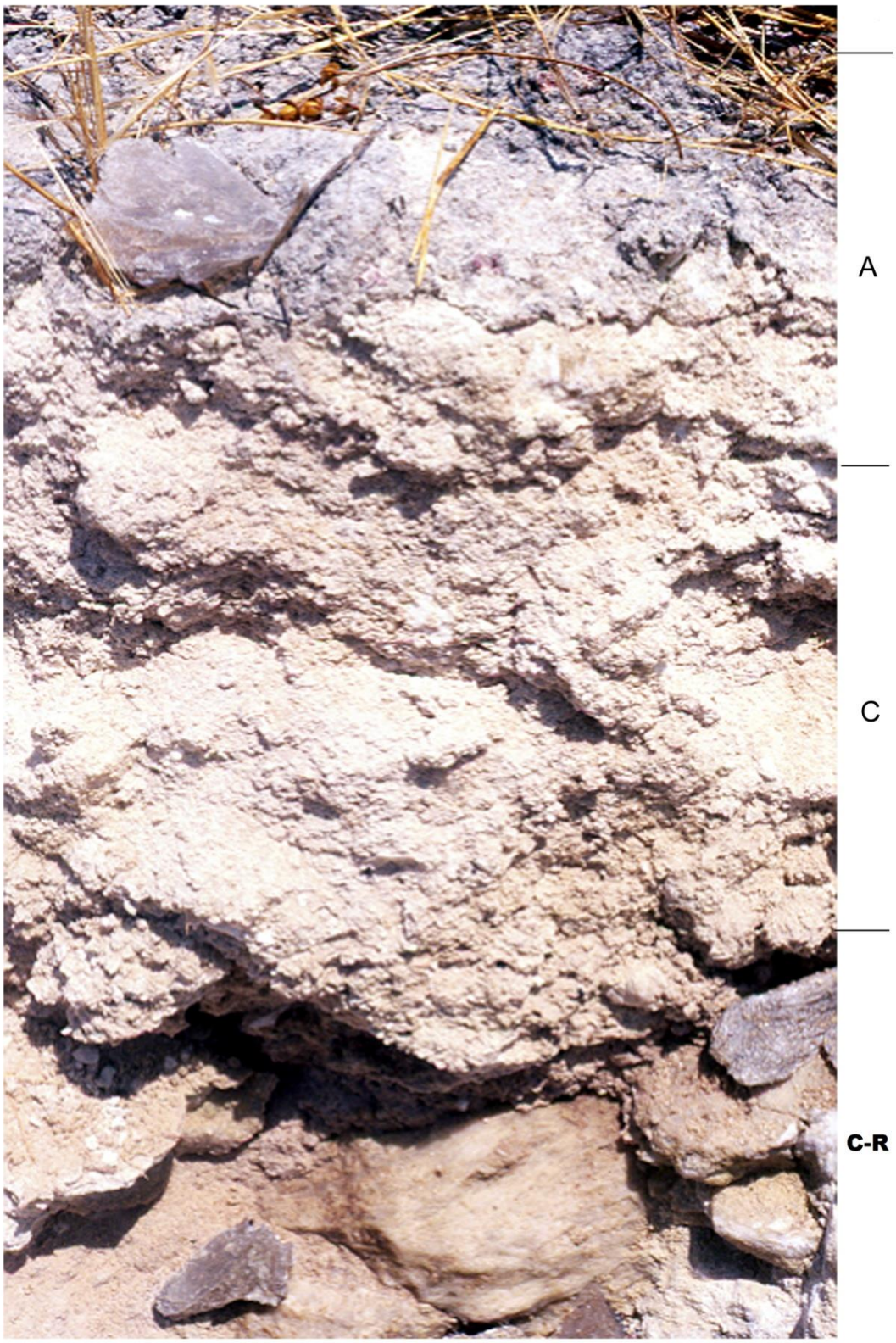
COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5Y5/4	35,5	2	25,8	50	28,2	200	10,5	500	-1		
5Y3/3	43,8	2	32,6	50	17,6	200	6,0	500	-1		

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
5,0	1	-1		32,5	6	-1		8,0	15	1	>4	
4,0	1	-1		37,8	6	-1		8,0	15	1	>4	

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	45,0	19	5,5	19	0,6	19	9,5	19	45,8		-1	
	72,0	19	7,5	19	0,8	19	14,8	19	70,0		-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		-1	54,3	26	1,20	28
-1		-1		-1		-1		-1	-1		-1,00	

GYPSISOLS - Profile : 1 (GY.le)- **number on the map 50**



GYPSISOLS Profile 1 (GY.le) leptic- GYPSISOLS

Country CY	STU Number	Soil Name						Location		
		WRB-GRP	WRB-ADJ	WRB-CMP	FAO90-MG	FAO90-UNI	FAO90-SUB	LAT	LONG	ELEV
CY	1	GY	GYle		CY			34˚51' 15"	32˚32'45"	500
	50									

PAR-MAT	Water Regime			USE-DOM	Root Depth			HRZ	DEP	STR
	TWT	HGWT	HGWT		ROO	ROC	OBS			
2210	0	0	0		-1	-1	-1	A	26	6
								C	40	
								C-R		

COL	Texture										Stones gravel
	Clay	ESD	SLT	ESD	SD1	ESD	SD2	ESD	SD3	ESD	
2,5Y5/4	33,5	2,0	31,6	50,0	24,3	200,0	11,5	500	-1		3
2,5Y7/2	27,7	2	34,4	50	12,4	200	8,7	500	-1		4

OC		TN		T Ca		GYP		pH		EC dS/m		
VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	SAR
-1	-1	-1		48,5	6	12500		8,6	15	1	17	
-1	-1	-1		46,0	6	13500		8,8	15	1	17	

ESP	Exchange. Ca		Exchange. Mg		Exchange. K		Exchange. Na		CEC		BS %	
	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD	VAL	COD
	106,3	19	4,3	19	0,6	19	8,6	19			-1	
	100,6	19	4,0	19	0,6	19	10,5	19			-1	

Water Retention of Soil Horizon WR									Total Porosity		Bulk Density	
VAL	1 kPa	VAL	10 kPa	VAL	100 kPa	VAL	1500 kPa	FC	VAL	COD	VAL	COD
-1		-1		-1		-1		-1			-1	
-1		-1		-1		-1		-1			-1	

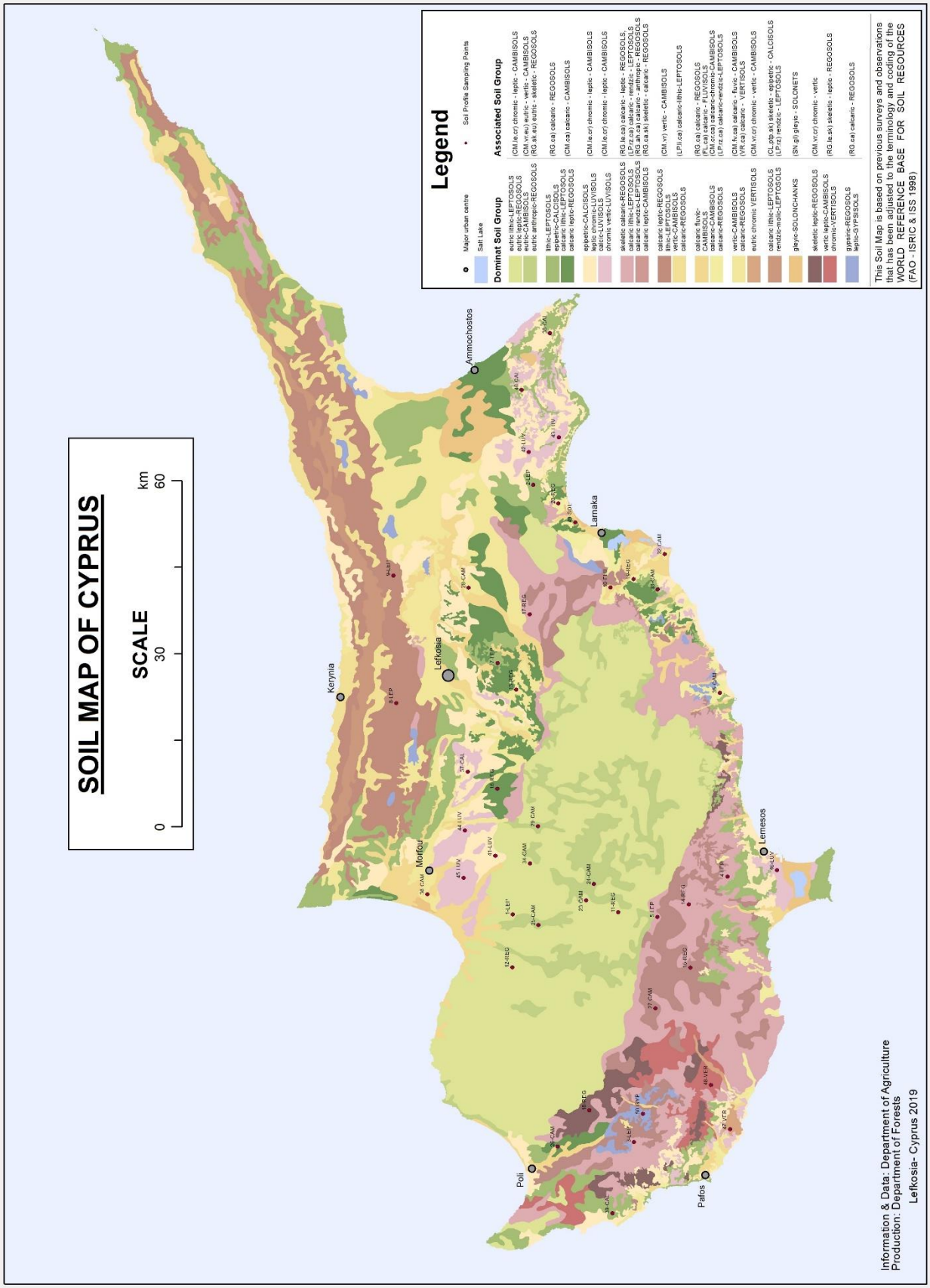
ΠΑΡΑΡΤΗΜΑ Ι

Soil profile numbers on the map and the corresponding numbers on the photos.

SOIL GROUPS	Soil profile numbers on the map	LAT	LONG	Soil profile numbers on the photos
LEPTOSOLS	1	491601,11	3880351,08	1
	2	566107,81	3876763,75	2
	3	452149,45	3859333,45	3
	4	498198,62	3843120,93	4
	5	491171,39	3855273,84	5
	7	535238,64	3882979,41	6
	8	528286,85	3900509,85	7
	9	550396,55	3901029,58	8
FLUVISOLS	10	548337,92	3863379,62	1
REGOSOLS	11	492039,34	3862067,79	1
	12	482440,64	3880418,80	2
	13	530579,31	3879740,05	3
	14	493333,77	3849841,81	4
	15	482373,58	3849570,24	5
	16	513414,49	3882993,67	6
	17	543676,97	3877421,76	7
	18	457679,72	3867044,34	8
	19	549799,86	3859403,42	9
	20	562874,90	3872433,58	10
CAMBISOLS	23	494058,59	3867624,01	1
	24	496914,73	3866270,21	2
	25	489771,67	3875904,47	3
	26	451363,42	3872564,02	4
	27	475348,14	3855598,23	5
	28	548252,24	3887996,80	6
	29	506914,79	3875968,62	7
	32	554126,78	3853993,90	10
	33	547971,62	3855233,44	11
	34	500447,34	3877368,06	12
	35	530069,40	3844408,75	13
	36	495105,13	3895108,90	14
CALCISOLS	37	516361,90	3888154,17	1
	38	592391,50	3873874,36	2
	39	439805,34	3863058,13	3
	40	582564,57	3878779,45	4
LUVISOLS	41	501823,81	3883369,30	1
	42	571765,65	3877544,07	2
	43	574349,98	3872363,76	3
	44	506176,47	3888605,05	4
	45	497951,71	3888840,09	5
	46	499299,95	3834526,96	6
VERTISOLS	47	454376,36	3842676,45	2
	48	462072,62	3846000,09	3
SOLONCHAKS	49	559593,71	3869521,79	1
GYPSOSOLS	50	457066,43	3857769,74	1

ΠΑΡΑΡΤΗΜΑ ΙΙ

ΕΔΑΦΟΛΟΓΙΚΟΣ ΧΑΡΤΗΣ ΤΗΣ ΚΥΠΡΟΥ ΚΑΤΑ F.A.O. ΜΕ ΑΠΟΤΥΠΩΜΕΝΑ ΤΑ ΣΗΜΕΙΑ ΤΩΝ SOIL PROFILES.



Για περισσότερες πληροφορίες οι ενδιαφερόμενοι μπορούν να επικοινωνούν με τον Κλάδο Χρήσης Γης και Ύδατος του Τμήματος Γεωργίας, στα τηλέφωνα 22760564 και 22760457 και στην ιστοσελίδα http://www.moa.gov.cy/da