



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



# شبكة المعلومات الجامعية

## التوثيق الالكتروني والميكرو فيلم

# جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأفلام قد اعدت دون أية تغيرات



## يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of  
15 – 25c and relative humidity 20-40 %



شبكة المعلومات الجامعية



# بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية



بالرسالة صفحات  
لم ترد بالأصل

**PEDOLOGICAL FEATURES STUDIES OF  
SOME VERTISOLS AND ARIDISOLS  
IN EGYPT**

By

**SAMY ABD ELGAYED ABD ALLAH**

B . Sc . Agric . ( Soil Sci . ) , Ain Shams Univ. 1981

M . Sc . Agric . ( Soil Sci . ) , Ain Shams Univ. 1990

A thesis submitted in partial fulfillment

of

The requirement for the degree of

**DOCTOR OF PHILOSOPHY**

in

Agricultural Science  
( soil science )

**Department of soil science**

**Faculty of Agriculture**

**Ain Shams University**

**2000**

B 7270

[illegible]

of 1970, 1971 and 1972. The total size

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

© 2000 Blackwell Science Ltd, *Journal of Internal Medicine* 247: 103–110

----- Supply of Goods -----

Dr. William H. Miller, National Research Council

10-10-68

Cell 24, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 16

0005 1 - 1 : 10060106X

**APPROVAL SHEET**

**PEDOLOGICAL FEATURES STUDIES OF  
SOME VERTISOLS AND ARIDISOLS  
IN EGYPT**

By

**SAMY ABD ELGAYED ABD ALLAH**

B . Sc . . Agric . ( Soil Sci . ) , Ain Shams Univ. 1981

M . Sc . . Agric . ( Soil Sci . ) , Ain Shams Univ. 1990

**This thesis for Ph. D. degree has been approved by :**

**Prof. Dr Hasan Mahmoud Hamdi** Hamdi

Professor of Soil Science , Fac. of Agric. , Ain Shams University

**Prof. Dr Fayez Salib Hanna** Fayez S. Hanna

Professor of Soil Science , Soil and Water Use Dept., National Research Center  
, El-Dokky

**Prof. Dr. Farida Hamed Rabie** Farida Rabie

Professor of Soil Science , Fac. of Agric. , Ain Shams University

**Date of examination : 24 / 4 / 2000**



Handwritten mark or signature at the top of the page.

PROCEEDINGS OF THE  
ANNUAL MEETING OF THE  
SOCIETY OF SOIL SCIENTISTS  
OF AFRICA

BY

STANLEY A. BEAULIEU, EDITOR  
S. A. BEAULIEU, Editor  
S. A. BEAULIEU, Editor

1964

Volume 1

Joyce Z. Hamman

Department of Soil Science, University of Zimbabwe

Dr. M. S. R. R. R.

Soil Science Research Center

Dr. M. S. R. R. R.

Department of Soil Science, University of Zimbabwe

**PEDOLOGICAL FEATURES STUDIES OF  
SOME VERTISOLS AND ARIDISOLS  
IN EGYPT**

**BY**

**SAMY ABD ELGAYED ABD ALLAH**

B . Sc. . Agric . ( Soil Sci. ) , Ain Shams Univ. 1981

M . Sc. . Agric . ( Soil Sci. ) , Ain Shams Univ. 1990

**Under the supervision of :**

**Prof. Dr. Farida Hamed Rabie-----**

**Professor of Soil Science , Fac. of Agric. , Ain Shams University**

**Prof. Dr. Saad EL – Demerdashe EL – Kady-----**

**Professor of Soils , Desert Research Center**

**Ass. Prof. Dr . Mohamed Yassin Khadr-----**

**Ass. Professor of Soil Science, Fac. of Agric. , Ain Shams University**

1. *Chlorophyll a* (Chl a) is the primary photosynthetic pigment in most plants, algae, and cyanobacteria. It is a green pigment that absorbs light energy in the blue-violet and red-orange regions of the visible spectrum. Chl a is essential for the light-dependent reactions of photosynthesis, where it converts light energy into chemical energy.

2. *Chlorophyll b* (Chl b) is an accessory pigment found in green plants and algae. It is a yellow-green pigment that absorbs light energy in the blue and orange-red regions. Chl b transfers the absorbed energy to Chl a, which then uses it for photosynthesis.

3. *Carotenoids* are a group of pigments that include carotenes and xanthophylls. They are responsible for the yellow, orange, and red colors seen in autumn foliage. Carotenoids absorb light energy in the blue and green regions and transfer it to Chl a. They also play a role in protecting the plant from damage caused by excess light energy.

4. *Xanthophylls* are a subset of carotenoids that are yellow in color. They are found in green plants and algae. Xanthophylls absorb light energy in the blue and green regions and transfer it to Chl a. They also play a role in protecting the plant from damage caused by excess light energy.

5. *Anthocyanins* are water-soluble pigments that are responsible for the red, purple, and blue colors seen in many flowers and fruits. They are not involved in photosynthesis but can protect the plant from damage caused by excess light energy.

6. *Flavonoids* are a group of pigments that include flavones and flavanones. They are responsible for the yellow and white colors seen in many flowers and fruits. Flavonoids are not involved in photosynthesis but can protect the plant from damage caused by excess light energy.

7. *Anthoxanthins* are water-soluble pigments that are responsible for the white and light yellow colors seen in many flowers and fruits. They are not involved in photosynthesis but can protect the plant from damage caused by excess light energy.

8. *Anthocyanins* are water-soluble pigments that are responsible for the red, purple, and blue colors seen in many flowers and fruits. They are not involved in photosynthesis but can protect the plant from damage caused by excess light energy.

9. *Anthocyanins* are water-soluble pigments that are responsible for the red, purple, and blue colors seen in many flowers and fruits. They are not involved in photosynthesis but can protect the plant from damage caused by excess light energy.

10. *Anthocyanins* are water-soluble pigments that are responsible for the red, purple, and blue colors seen in many flowers and fruits. They are not involved in photosynthesis but can protect the plant from damage caused by excess light energy.

1. The first step is to identify the problem. This involves understanding the current situation and the goals that need to be achieved.

1. The first group of numbers is the "1000's" group. It is the first three digits of the number. In this case, it is 100.

[illegible]

1. *Adaptation to the environment*

[illegible]

## ABSTRACT

**SAMY ABD ELGAYED ABD ALLAH . Pedological features studies of some Vertisols and Aridisols in Egypt .Unpublished Ph .D, thesis,University of Ain Shams, Faculty, of Agriculture, Department of Soil Science, 2000 .**

The purpose of this investigation is to study in details the pedological features formed in some soils belonging to Aridisols and Vertisols. To fulfill this purpose, 21 soil profiles representing different Aridisols and Vertisols were selected from the different regions in Egypt. Soil samples were collected and prepared for physical, chemical, mineralogical and micromorphological analysis. The results of this work can be summarized as follows :-

### **A : Physical , chemical and mineralogical properties of the Aridisols :**

Soil texture classes indicate extremely variable texture between sandy loam and clay ,  $\text{CaCO}_3$  content ranges from 0.5 to 66.18 % and T.S.S expressed in EC values from 3.24 to 155 dS/m , gypsum content from nil to 25.8 % organic matter from 0.10 to 1.10 % depending on great soil group and environmental features.

The x- ray diffraction patterns are different in different great soil groups. Pridominant minerals are kaolinite and calcite, or kaolinite and palygorskite, or montmorillonite in the Haplocalcids, Aquisalids and Haplogypsids respectively

### **B:Physical, chemical and mineralogical properties of the Vertisols :**

The soil texture is clay throughout the entire depth of most profiles, clay content varies widely from 43.03 – 72.53 %  $\text{CaCO}_3$  content is generally low and varies in the different soil sites , it ranges from 0.43 – 8.25 % . Soil salinity differs from one locality to another , the EC values range from 4.0 – 18.32 dS/m at 25 °C The clay fractions are dominated with of montmorillonite followed by kaolinite, mica and interstratified minerals , accessory minerals present in the clay fraction are few amount of quartz and feldspars .

### **C.The micromorphology of Vertisols profiles :**

The microstructures are fissures , cracks , and weakly to moderately developed subangular blocky structure . Coarse materials are single and compound mineral grains dominated by quartz , feldspars, mica and opaque minerals , poorly

sorted to well sorted. The fine materials are dominated by clay, medium and fine silt mixed with amorphous iron oxides. The b. fabric of the ground mass are speckled, mosaic speckled and lipid. planar voids are dominated such as vughs, channels, chambers and compound packing voids. Many kind of pedofeatures, dominated by ferruginous oxides having sharp boundaries. common typic lenticular gypsum crystals, loose discontinuous crystals of lenticular gypsum spreaded in the ground mass.

#### **D. The micromorphology of the Aridisols profiles :-**

Most of these soils have granular, crumbly, vughy and platy structure, coarse materials dominated by macro and meso minerals. Fine materials dominated by, medium and fine silt, calcium carbonate. The b. fabric of the ground mass are speckled, crystallitic and lipid. Compound packing voids are dominant as well as large irregular vughs and chambers. Many kinds of pedofeatures are observed in the thin sections, i.e, coarse irregular calcareous nodules with different sizes and shapes, micritic calcite nodules, and idiopathic and hypidiopathic gypsum crystals. Typic well formed large cemented lenticular gypsum crystals, typic granular crystalline gypsum infilling some chambers.

Key words :

Vertisols – Aridisols – Physical – Chemical – Mineralogy – Micromorphology

Received 10/01/2017, Accepted 10/01/2017

Published online 10/01/2017

DOI: 10.15666/J.AE/2017.10

Production Hosted by Elsevier  
including A gentral document of the

## ACKNOWLEDGMENT

The author wishes to express his sincerest gratitude and appreciation to **Prof. Dr Farida H. Rabie**, Professor of soil Science, Faculty of Agriculture, Ain Shams University, for suggesting the problem, Supervision, continuous encouragement, valuable guidance and constructive criticism during to course of this investigation.

Thanks are extended to **Prof. Dr. S.El-Demerdashe** , Prof. of Soil Science, Desert Research Center, for Supervision, Sincere help and guidance throughout the course of the study.

Gratitude and appreciation are also offered to **Dr. M.Y.Khadr** , Assistant Prof., of Soil Science, Ain Shams University for help during the investigation.

The author likes also to thanks **Prof. Dr. F.Labib**, Prof. of Soil Science, National Research Center for her help in writing micromorphological studies.

Thanks are also due to all the staff members of Soil, Water and Environment Research Institute, Agriculture Research Center.

61	.....
62	.....
63	.....
64	.....
65	.....
66	.....
67	.....
68	.....
69	.....
70	.....
71	.....
72	.....
73	.....
74	.....
75	.....
76	.....
77	.....
78	.....
79	.....
80	.....
81	.....
82	.....
83	.....
84	.....
85	.....
86	.....
87	.....
88	.....
89	.....
90	.....
91	.....
92	.....
93	.....
94	.....
95	.....
96	.....
97	.....
98	.....
99	.....
100	.....