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APPENDIX (1) *

Correlation coefficient " r " values regarding relations
between soil properties .

	F.C	W.P.	A.W.	H.C.	C.S.	F.S.	Silt	Clay
F.C	1.00000							
W.P	.96345	1.00000						
A.W	.41344	.15442	1.00000					
H.C	-.81548	-.84972	-.11947	1.00000				
C.S	-.79723	-.84157	-.07985	.84185	1.00000			
F.S	-.46915	-.48014	-.09833	.30264	.07629	1.00000		
Silt	.85666	.89053	.13264	-.81488	-.81878	-.60035	1.00000	
Clay	.89766	.94514	.09824	-.84524	-.86716	-.53383	.93019	1.00000
F+S+C	.79759	.84187	.08017	-.84224	-.99999	-.07747	.81929	.86784
Si+CL	.89450	.93647	.11605	-.84611	-.86001	-.57439	.97933	.98521
CaSO4	.28117	.26652	.13110	-.44290	-.41980	.00886	.36251	.31074
CaCO3	.41609	.50958	-.19744	-.48093	-.48924	-.11036	.45149	.44700
pH	.15747	.16133	.03242	-.25260	-.34838	-.00932	.31370	.26280
EC	.04275	-.01869	.22121	.08711	.26706	-.24709	-.10283	-.08104
SAR	.10858	.03382	.28552	-.01985	.09005	-.09796	-.04433	-.00489
CEC	.84193	.87948	.11586	-.80143	-.88467	-.35577	.86241	.91840
ESP	.17046	.13719	.16238	.05411	.00038	-.28439	.10106	.17893
K+	.78829	.84381	.03927	-.76134	-.76533	.57977	.88495	.92902
Na+	.80388	.83010	.14336	-.70472	-.74277	-.52734	.82605	.89746
Mg++	.82100	.88941	.00492	-.83825	-.85070	-.40916	.87679	.90457
Ca++	.76605	.78791	.14726	-.72343	-.84615	-.22432	.76457	.82198
O.M	-.56854	.60681	.03436	-.41208	-.50969	-.16935	.40414	.57441
B.62-.19	.14295	-.10651	.88927	.06186	.12754	-.01063	-.07588	-.11620
28.8-.62	.20720	.06731	.53540	.02443	.01384	.10677	-.07620	-.05368
>28.8	-.72181	-.60592	-.60267	.48402	.42157	.04618	-.30144	-.41538
T.FOROST	.91024	.92509	.21280	-.79242	-.82182	-.57455	.96616	.93943
<.19	.93392	.96957	.14892	-.81975	-.79092	-.39164	.80061	.87542

	F+S+C	Si+CL	CaSO4	CaCO3	pH	EC	SAR	CEC
F+S+C	1.00000							
Si+CL	.86062	1.00000						
CaSO4	.42014	.34044	1.00000					
CaCO3	.48801	.45705	.06010	1.00000				
pH	.34891	.29122	.38270	-.02744	1.00000			
EC	-.26656	-.09265	.13485	-.22976	-.48292	1.00000		
SAR	-.08942	-.02338	.38869	-.22212	-.24495	.89043	1.00000	
CEC	.88531	.90862	.32900	.47256	.27502	-.11065	.01916	1.00000
ESP	.00061	.14574	.14087	-.24793	.01054	.13974	.12313	.02137
K+	.76590	.92499	.31478	.42949	.23146	-.03221	.07464	.84914
Na+	.74385	.88009	.40383	.31893	.25646	-.02421	.07862	.85946
Mg++	.85099	.90770	.23800	.60790	.23750	-.12468	-.06901	.91518
Ca++	.84676	.80982	.30954	.40613	.26725	-.12138	.03534	.87257
O.M	.50990	.50514	.05783	.18863	.03146	-.20179	-.14288	.47697
B.62-.19	-.12774	-.09945	.02324	-.34287	.02842	.24907	.28950	-.08942
28.8-B.62	-.01292	-.06515	.11311	-.04202	-.09019	.03834	.09509	-.01582
>28.8	-.42141	-.36958	-.17868	-.16200	.02122	-.15769	-.23539	-.41781
T.FOROST	.82230	.96863	.28497	.44901	.23287	-.02275	.03275	.86712
<.19	.79902	.85609	.27290	.50095	.09523	.02677	.08829	.82770

(Cont.)→

APPENDIX 1
:(CONT.)

	ESP	K+	Na+	Mg++	Ca++	O.M	8.62-.19	28.8-8.62
ESP	1.00000							
K+	.15896	1.00000						
Na+	.46416	.81389	1.00000					
Mg++	-.09418	.84772	.74500	1.00000				
Ca++	-.07316	.75101	.76919	.82554	1.00000			
O.M	.51095	.51459	.61068	.47514	.37482	1.00000		
8.62-.19	.09496	-.16314	-.05412	-.16788	-.05035	-.14667	1.00000	
28.8-8.62	.12309	-.04773	-.01346	-.13884	.04057	.14366	.17244	1.00000
>28.8	-.10962	-.27861	-.36523	-.34966	-.42145	-.49448	-.27754	-.51593
T.POROST	.12201	.87864	.82586	.88249	.76993	.44686	-.01963	-.0174
<.19	.03010	.76193	.73593	.83236	.75920	.58356	-.11652	.1173
>28.8	1.00000							
T.POROST	-.38199	1.00000						
<.19	-.68578	.85144	1.00000					

N = 34	LSD :	[	.05) = γ^*	.33823
			.01 = γ^{**}	.4350
			.001 = γ^{***}	.5408

* : F.C. : field capacity - W.P. : wilting point. - A.W. : available water. - H.C. : hydraulic conductivity. - C.S. : coarse sand. - F.S. : fine sand. - Si. : silt. - EC : electric conductivity. - SAR : sodium adsorption ratio. - ESP : exchangeable sodium percent. - O.M. : organic matter. - T.POROST : total porosity.

: .19 28.8 : designate pore size (diameters in microns 'u'):-
 <.19 u : non-useful pores NUP ; >28.8 u : quickly drainable pores QDP ; 8.62 - .19 u : water-holding pores WHP ; 28.8 - 8.62 u : slowly-drainable pores SDP .

APPENDIX (2)

Relationships between infiltration rate and soil properties .

A . Soil texture , porosity , and infiltration rate .

Profile	% clay	% silt	% cs+fs	% cs	% cl+si	% T.P	% >28.8 μ	% <.19 μ	cm/h inf.R
1	7.985	2.710	89.280	49.760	10.695	35.375	6.610	5.145	2.800
2	23.530	15.435	60.985	18.395	38.965	43.665	3.865	2.555	.470
3	6.325	4.915	88.755	64.044	11.240	36.480	21.360	3.445	15.200
4	50.080	41.360	8.560	1.325	91.440	55.455	6.695	3.565	3.500
5	13.305	9.825	76.620	38.150	23.130	40.540	5.930	4.325	4.900
7	11.230	4.800	83.960	48.175	16.030	36.345	10.855	3.575	14.000

B . Values of correlation coefficients " r "

	clay	silt	cs+fs	cs	cl+si	T.P	>28.8 μ	<.19 μ	inf.R
clay	1.00000								
silt	.99173	1.00000							
cs+fs	-.99813	-.99771	1.00000						
cs	-.93426	-.89867	.91996	1.00000					
cl+si	.99818	.99766	-1.00000	-.91947	1.00000				
T.P	.98767	.99394	-.99294	-.92824	.99265	1.00000			
>28.8	-.42232	-.34300	.38725	.68255	-.38594	-.40067	1.00000		
<.19	-.33370	-.31997	.32998	.36789	-.33060	-.35335	-.09490	1.00000	
inf.R	-.46591	-.41767	.44527	.68661	-.44422	-.47690	.87297	-.08503	1.00000

LSD. .05 .81165

* (1) values of mechanical analysis and porosity are averages of profiles . (2) profile No. 6 was not included due to infiltration being not performed on it .

(3). cs : coarse sand - fs : fine sand - cl+si : clay+silt - T.P : total porosity >28.8 μ and <.19 μ are diameters (microns) of quickly drainable pores QDP., and none useful pores NUP respectively.