

Supplementary Material for the paper entitled: *Impact of contrasting fertilizer technologies on N dynamics from sub-surface bands of 'pure' or blended fertilizer applications*

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The supplementary material presents data that are not otherwise presented in the manuscript, but which aids in interpretation of results and / or provides important background information (**Part A**); and the output of statistical analysis for all datasets, some of which is not presented in the manuscript due to complexity (**Part B**).

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Supplementary Material Part A

Supplementary data

Data that are not otherwise presented in the manuscript, but which aids in interpretation of results and / or provides important background information is presented in this section of the Supplementary Material.

Urea-N

No urea-N was detected at any time in either Ferralsol or Vertisol in untreated soil.

Mineral N

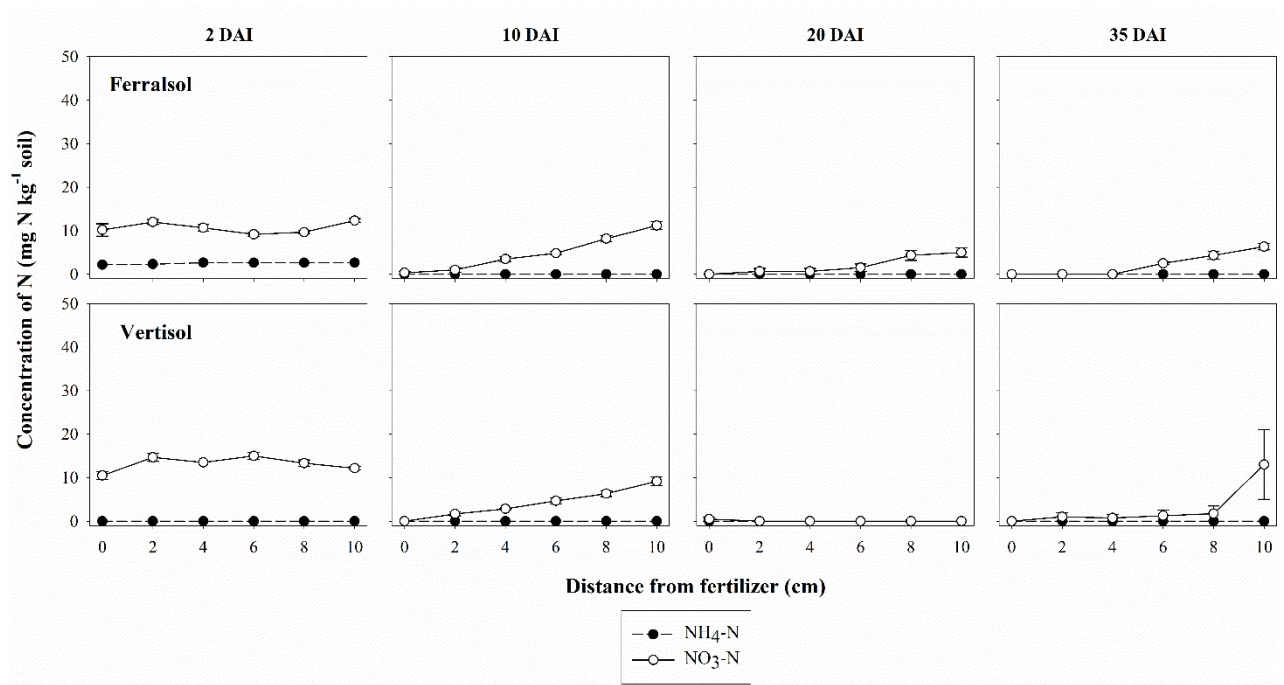


Fig. S1 Concentration of mineral N species in untreated Ferralsol and Vertisol over time (days after incubation; DAI). Vertical bars represent the standard error of the means (n = 3) presented for each time × location. Note the y-axis scale varies from that of Figures 5 & 6 in the manuscript.

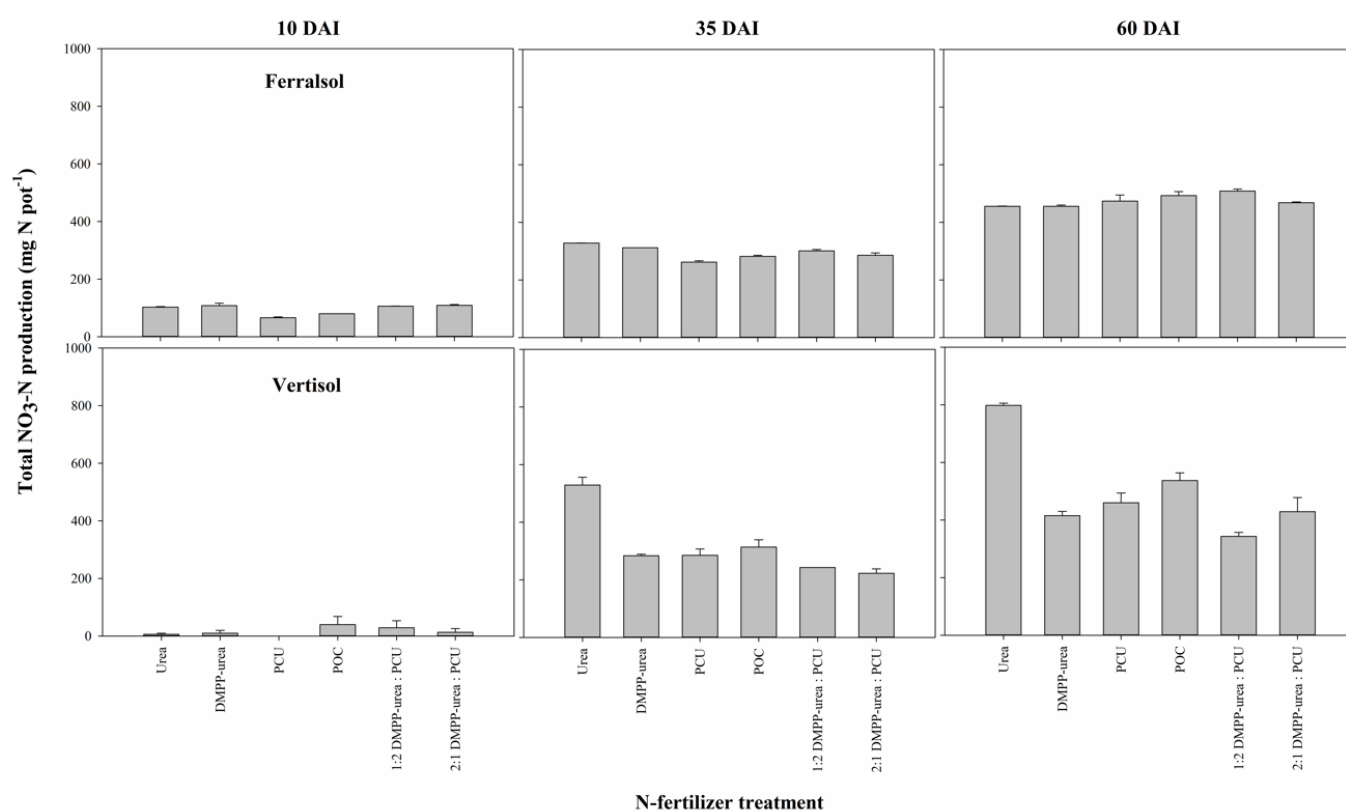


Figure S2 Net NO₃-N production over time from bands of N-fertilizer in a Ferralsol and Vertisol over time (days after incubation; DAI). Vertical bars represent the standard error of the mean (n = 3).

Table S1 Distribution of pH and EC (dS m⁻¹) in untreated Ferralsol and Vertisol. These are the base values against which the changes in pH (in manuscript, Fig. 1) and EC (in manuscript, Fig. 2) following N-fertilizer treatment were calculated.

pH												
	Ferralsol						Vertisol					
DAI	0-1 cm	1-3 cm	3-5 cm	5-7 cm	7-9 cm	9-11 cm	0-1 cm	1-3 cm	3-5 cm	5-7 cm	7-9 cm	9-11 cm
10	6.82	6.63	6.47	6.42	6.33	6.28	6.59	6.49	6.41	6.44	6.34	6.33
35	6.75	6.41	6.35	6.27	6.24	6.20	6.43	6.37	6.31	6.35	6.36	6.25
60	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39
EC (dS m ⁻¹)												
	Ferralsol						Vertisol					
DAI	0-1 cm	1-3 cm	3-5 cm	5-7 cm	7-9 cm	9-11 cm	0-1 cm	1-3 cm	3-5 cm	5-7 cm	7-9 cm	9-11 cm
10	0.07	0.05	0.05	0.05	0.05	0.05	0.25	0.21	0.25	0.25	0.25	0.25
35	0.08	0.05	0.05	0.05	0.05	0.06	0.30	0.32	0.34	0.31	0.40	0.47
60	0.06	0.06	0.06	0.06	0.06	0.06	0.31	0.31	0.31	0.31	0.31	0.31

Supplementary Material Part B

Statistical analysis not presented in manuscript

Analysis of concentrations of the various N species (urea-N, mineral N and aqueous NH_3) and chemical data ($\text{pH}_{1:5\text{w}}$ and $\text{EC}_{1:5\text{w}}$) was conducted by a three-way ANOVA for each soil with time, treatment (N-fertilizers excluding the 0N control treatment), and distance from fertosphere as factors. The analysis was conducted with the 0N treatment excluded to avoid masking effects of values associated with untreated soil. Tukey's HSD method ($P < 0.05$) was used to test means for significant interaction effects. Statistical output including: factor information, ANOVA tables, model summaries and the results of the significant interaction effects are presented below for all datasets.

Urea-N

Factor Information

Factor	Type	Levels	Values
Treatment	Fixed	6	1:2 ENTEC:Agromaster, 2:1 ENTEC Agromaster, Agromaster Tropical, ENTEC, POC, Urea
Zone	Fixed	6	0, 2, 4, 6, 8, 10
Time	Fixed	3	10, 35, 60

Ferralsol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	76489	15297.8	19.16	0.000
Zone	5	301630	60326.1	75.57	0.000
Time	2	5623	2811.3	3.52	0.033
Treatment*Zone	25	353605	14144.2	17.72	0.000
Treatment*Time	10	15573	1557.3	1.95	0.045
Zone*Time	10	35102	3510.2	4.40	0.000
Treatment*Zone*Time	50	88628	1772.6	2.22	0.000
Error	119	94991	798.2		
Total	226	943797			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
28.2532	89.94%	80.89%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
POC	36	49.0464	A
Agromaster Tropical	36	34.5637	A
1:2 ENTEC:Agromaster	36	14.8629	B
2:1 ENTEC Agromater	35	5.3523	B
Urea	48	0.0476	B
ENTEC	36	0.0439	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	38	99.2806	A
2	37	4.5224	B
4	38	0.0328	B
6	38	0.0276	B
8	38	0.0269	B
10	38	0.0265	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
35	77	21.8405	A
60	72	19.7510	A B
10	78	10.3669	B

Means that do not share a letter are significantly different.

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
POC 0 35	2	453.5	A
Agromaster Tropical 0 60	2	269	B

POC 0 60	2	260.5	B
Agromaster Tropical 0 35	2	208	BC
POC 0 10	2	161	BCD
1:2 ENTEC:Agromaster 0 35	2	106.8	CDE
2:1 ENTEC Agromater 0 60	2	88.75	CDE
1:2 ENTEC:Agromaster 0 60	2	78.85	DE
1:2 ENTEC:Agromaster 0 10	2	77.65	DE
Agromaster Tropical 0 10	2	76.2	DE
Agromaster Tropical 2 10	2	51	DE
Agromaster Tropical 2 35	2	8.82	E
Agromaster Tropical 2 60	2	8.82	E
2:1 ENTEC Agromater 0 10	2	6.13	E
POC 2 60	2	3.875	E
POC 2 35	2	3.64	E
1:2 ENTEC:Agromaster 2 35	2	3.238	E
1:2 ENTEC:Agromaster 2 60	2	0.632	E
2:1 ENTEC Agromater 2 60	2	0.523	E
2:1 ENTEC Agromater 2 35	1	0.262	E
ENTEC 0 10	2	0.234	E
2:1 ENTEC Agromater 2 10	2	0.184	E
Urea 8 35	3	0.167	E
Agromaster Tropical 4 35	2	0.147	E
POC 2 10	2	0.143	E
Urea 0 35	3	0.127	E
Urea 0 10	3	0.118	E
1:2 ENTEC:Agromaster 4 35	2	0.116	E
2:1 ENTEC Agromater 8 35	2	0.11	E
ENTEC 2 10	2	0.11	E
Urea 6 35	3	0.102	E
1:2 ENTEC:Agromaster 6 10	2	0.097	E
POC 10 10	2	0.097	E

Urea 10 35	3	0.091	E
2:1 ENTEC Agromater 6 35	2	0.089	E
2:1 ENTEC Agromater 0 35	2	0.088	E
ENTEC 0 35	2	0.082	E
Agromaster Tropical 6 35	2	0.072	E
2:1 ENTEC Agromater 10 35	2	0.068	E
Urea 2 35	3	0.064	E
ENTEC 8 35	2	0.063	E
ENTEC 2 35	2	0.061	E
Urea 4 35	3	0.06	E
Agromaster Tropical 10 35	2	0.058	E
ENTEC 4 35	2	0.058	E
ENTEC 10 35	2	0.056	E
Urea 4 10	3	0.056	E
1:2 ENTEC:Agromaster 10 35	2	0.055	E
2:1 ENTEC Agromater 8 10	2	0.053	E
ENTEC 6 35	2	0.052	E
ENTEC 4 10	2	0.052	E
1:2 ENTEC:Agromaster 6 35	2	0.047	E
2:1 ENTEC Agromater 4 35	2	0.045	E
POC 4 35	2	0.042	E
1:2 ENTEC:Agromaster 8 35	2	0.036	E
Urea 2 10	3	0.031	E
Agromaster Tropical 8 35	2	0.029	E
2:1 ENTEC Agromater 10 10	2	0.028	E
Urea 8 10	3	0.027	E
POC 6 60	2	0.023	E
ENTEC 4 60	2	0.016	E
POC 6 35	2	0.014	E
Urea 0 60	2	0.013	E

2:1 ENTEC Agromater 10 60	2	0.011	E
1:2 ENTEC:Agromaster 10 60	2	0.011	E
ENTEC 0 60	2	0.009	E
Urea 6 10	3	0	E
2:1 ENTEC Agromater 6 10	2	0	E
Urea 10 60	2	0	E
Agromaster Tropical 4 10	2	0	E
1:2 ENTEC:Agromaster 2 10	2	0	E
Agromaster Tropical 8 10	2	0	E
Agromaster Tropical 6 10	2	0	E
1:2 ENTEC:Agromaster 8 10	2	0	E
ENTEC 8 10	2	0	E
Urea 10 10	3	0	E
Agromaster Tropical 8 60	2	0	E
ENTEC 8 60	2	0	E
2:1 ENTEC Agromater 8 60	2	0	E
Agromaster Tropical 10 10	2	0	E
1:2 ENTEC:Agromaster 6 60	2	0	E
2:1 ENTEC Agromater 4 10	2	0	E
Agromaster Tropical 6 60	2	0	E
1:2 ENTEC:Agromaster 8 60	2	0	E
POC 8 60	2	0	E
Urea 4 60	2	0	E
2:1 ENTEC Agromater 4 60	2	0	E
Urea 8 60	2	0	E
Agromaster Tropical 4 60	2	0	E
2:1 ENTEC Agromater 6 60	2	0	E
1:2 ENTEC:Agromaster 4 10	2	0	E
Agromaster Tropical 10 60	2	0	E
ENTEC 10 60	2	0	E

POC 4 60	2	0	E
ENTEC 6 10	2	0	E
ENTEC 2 60	2	0	E
ENTEC 6 60	2	0	E
1:2 ENTEC:Agromaster 4 60	2	0	E
Urea 6 60	2	0	E
POC 4 10	2	0	E
Urea 2 60	2	0	E
ENTEC 10 10	2	0	E
POC 6 10	2	0	E
POC 8 35	2	0	E
POC 8 10	2	0	E
POC 10 35	2	0	E
POC 10 60	2	0	E
1:2 ENTEC:Agromaster 10 10	2	0	E

Means that do not share a letter are significantly different.

Vertisol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	133281	26656	18.85	0.000
Zone	5	938039	187608	132.66	0.000
Time	2	43497	21749	15.38	0.000
Treatment*Zone	25	662528	26501	18.74	0.000
Treatment*Time	10	78374	7837	5.54	0.000
Zone*Time	10	211943	21194	14.99	0.000
Treatment*Zone*Time	50	382604	7652	5.41	0.000
Error	87	123033	1414		
Total	194	2249547			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
37.6055	94.53%	87.80%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
POC	30	70.0322	A
Agromaster Tropical	29	61.5475	A
1:2 ENTEC:Agromaster	34	48.1087	A
2:1 ENTEC Agromater	36	19.6047	B
ENTEC	30	0.0425	B
Urea	36	0.0287	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	32	198.208	A
2	32	0.975	B
4	33	0.065	B
8	33	0.053	B
10	32	0.044	B
6	33	0.018	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
35	52	51.5082	A
60	65	34.6790	A
10	78	13.4949	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
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POC 0 35	1	616	A
Agromaster Tropical 0 35	1	600	A
1:2 ENTEC:Agromaster 0 35	1	494	AB
Agromaster Tropical 0 60	2	487	AB
POC 0 10	2	436.5	AB
1:2 ENTEC:Agromaster 0 60	2	342.5	BC
POC 0 60	2	205.05	CD
2:1 ENTEC Agromater 0 60	2	198.35	CDE
2:1 ENTEC Agromater 0 35	2	143.5	DEF
1:2 ENTEC:Agromaster 0 10	2	28.5	EF
Agromaster Tropical 0 10	2	14.505	F
2:1 ENTEC Agromater 2 60	2	9.195	F
Agromaster Tropical 2 60	2	6.35	F
2:1 ENTEC Agromater 0 10	2	1.84	F
POC 2 10	2	1.34	F
POC 10 35	1	0.795	DEF
POC 8 10	2	0.448	F
POC 4 10	2	0.446	F
ENTEC 4 10	2	0.433	F
Urea 2 10	3	0.346	F
1:2 ENTEC:Agromaster 8 10	2	0.34	F
ENTEC 6 10	2	0.333	F
1:2 ENTEC:Agromaster 2 10	2	0.321	F
1:2 ENTEC:Agromaster 4 10	2	0.296	F
Urea 8 10	3	0.17	F
1:2 ENTEC:Agromaster 10 10	2	0	F
1:2 ENTEC:Agromaster 10 35	2	0	F
ENTEC 10 35	1	0	DEF
2:1 ENTEC Agromater 2 10	2	0	F
ENTEC 10 60	2	0	F
ENTEC 2 10	2	0	F
Urea 2 60	1	0	DEF
2:1 ENTEC Agromater 2 35	2	0	F
POC 4 35	1	0	DEF
Urea 10 60	1	0	DEF
ENTEC 6 35	1	0	DEF
Urea 0 35	2	0	F
Agromaster Tropical 10 10	2	0	F
ENTEC 2 35	1	0	DEF
2:1 ENTEC Agromater 4 10	2	0	F
1:2 ENTEC:Agromaster 10 60	2	0	F
ENTEC 8 10	2	0	F
POC 2 35	1	0	DEF
Agromaster Tropical 2 10	2	0	F
ENTEC 4 35	1	0	DEF
Agromaster Tropical 2 35	1	0	DEF

POC 10 10	2	0	F
ENTEC 8 35	1	0	DEF
2:1 ENTEC Agromater 6 35	2	0	F
1:2 ENTEC:Agromaster 2 60	2	0	F
1:2 ENTEC:Agromaster 6 60	2	0	F
POC 8 60	2	0	F
1:2 ENTEC:Agromaster 6 35	2	0	F
2:1 ENTEC Agromater 4 35	2	0	F
POC 2 60	2	0	F
2:1 ENTEC Agromater 6 10	2	0	F
POC 4 60	2	0	F
POC 6 35	1	0	DEF
2:1 ENTEC Agromater 6 60	2	0	F
Urea 4 10	3	0	F
1:2 ENTEC:Agromaster 4 35	2	0	F
Agromaster Tropical 6 10	2	0	F
Agromaster Tropical 8 60	2	0	F
1:2 ENTEC:Agromaster 2 35	1	0	DEF
Urea 2 35	2	0	F
Agromaster Tropical 6 35	1	0	DEF
ENTEC 0 10	2	0	F
Urea 4 60	1	0	DEF
2:1 ENTEC Agromater 8 35	2	0	F
ENTEC 4 60	2	0	F
1:2 ENTEC:Agromaster 4 60	2	0	F
Urea 6 35	2	0	F
Agromaster Tropical 4 10	2	0	F
ENTEC 2 60	2	0	F
2:1 ENTEC Agromater 4 60	2	0	F
ENTEC 8 60	2	0	F
2:1 ENTEC Agromater 8 60	2	0	F
1:2 ENTEC:Agromaster 8 60	2	0	F
POC 6 60	2	0	F
Agromaster Tropical 8 10	2	0	F
1:2 ENTEC:Agromaster 6 10	2	0	F
POC 6 10	2	0	F
POC 10 60	2	0	F
2:1 ENTEC Agromater 10 60	2	0	F
2:1 ENTEC Agromater 8 10	2	0	F
ENTEC 6 60	2	0	F
Urea 6 10	3	0	F
Agromaster Tropical 4 60	2	0	F
POC 8 35	1	0	DEF
Urea 8 60	1	0	DEF
Agromaster Tropical 8 35	1	0	DEF
Urea 8 35	2	0	F

Agromaster Tropical 4 35	1	0	DEF
2:1 ENTEC Agromater 10 35	2	0	F
Agromaster Tropical 6 60	2	0	F
Urea 4 35	2	0	F
1:2 ENTEC:Agromaster 8 35	2	0	F
Urea 0 10	3	0	F
Urea 10 10	3	0	F
Urea 6 60	1	0	DEF
Urea 0 60	1	0	DEF
ENTEC 10 10	2	0	F
Agromaster Tropical 10 35	1	0	DEF
ENTEC 0 60	2	0	F
Agromaster Tropical 10 60	1	0	DEF
2:1 ENTEC Agromater 10 10	2	0	F
Urea 10 35	2	0	F
ENTEC 0 35	1	0	DEF

Means that do not share a letter are significantly different.

NH₃-N

Factor Information

Factor	Type	Levels	Values
Treatment	Fixed	6	1:2 ENTEC:Agromaster, 2:1 ENTEC Agromater, Agromaster Tropical, ENTEC, POC, Urea
Zone	Fixed	6	0, 2, 4, 6, 8, 10
Time	Fixed	3	10, 35, 60

Ferralsol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	25.71	5.142	3.24	0.009
Zone	5	192.20	38.440	24.25	0.000
Time	2	13.93	6.965	4.39	0.014
Treatment*Zone	25	136.24	5.450	3.44	0.000
Treatment*Time	10	35.00	3.500	2.21	0.022
Zone*Time	10	20.77	2.077	1.31	0.233

Treatment*Zone*Time	50	107.51	2.150	1.36	0.091
Error	120	190.25	1.585		
Total	227	719.73			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.25914	73.57%	50.00%	0.00%

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
1:2 ENTEC:Agromaster	36	1.36847	A
2:1 ENTEC Agromater	36	0.61007	A B
POC	36	0.58107	A B
ENTEC	36	0.53659	A B
Urea	48	0.53582	B
Agromaster Tropical	36	0.24700	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	38	2.62920	A
2	38	0.76986	B
4	38	0.36160	B
6	38	0.11289	B
8	38	0.00522	B
10	38	0.00024	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
10	78	0.984430	A
60	72	0.554676	A B

35 78 0.400398 B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone	N	Mean	Grouping
1:2 ENTEC:Agromaster 0	6	6.99377	A
POC 0	6	2.88094	B
2:1 ENTEC Agromater 0	6	2.06079	BC
Agromaster Tropical 0	6	1.45449	BC
Urea 0	8	1.23546	BC
ENTEC 0	6	1.14977	BC
1:2 ENTEC:Agromaster 2	6	1.03608	BC
2:1 ENTEC Agromater 2	6	1.02463	BC
ENTEC 2	6	1.01307	BC
Urea 2	8	0.99259	BC
ENTEC 4	6	0.72596	BC
Urea 4	8	0.68379	BC
POC 2	6	0.52538	BC
2:1 ENTEC Agromater 4	6	0.50023	BC
ENTEC 6	6	0.31569	BC
Urea 6	8	0.28599	BC
1:2 ENTEC:Agromaster 4	6	0.17968	BC
POC 4	6	0.07985	BC
2:1 ENTEC Agromater 6	6	0.07419	BC
Agromaster Tropical 2	6	0.02739	BC
Urea 8	8	0.01652	C
ENTEC 8	6	0.01431	C
1:2 ENTEC:Agromaster 6	6	0.00124	C
ENTEC 10	6	0.00072	C
Urea 10	8	0.00058	C
2:1 ENTEC Agromater 8	6	0.00046	C
POC 6	6	0.00021	C
Agromaster Tropical 4	6	0.0001	C
2:1 ENTEC Agromater 10	6	0.0001	C
1:2 ENTEC:Agromaster 8	6	0.00004	C
POC 8	6	0.00002	C
1:2 ENTEC:Agromaster 10	6	0.00001	C
Agromaster Tropical 6	6	0.00001	C
POC 10	6	0	C
Agromaster Tropical 8	6	0	C
Agromaster Tropical 10	6	0	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Time	N	Mean	Grouping
1:2 ENTEC:Agromaster 60	12	2.30928	A
Urea 10	18	1.36966	AB
ENTEC 10	12	1.35338	AB
2:1 ENTEC Agromater 10	12	1.00596	AB
1:2 ENTEC:Agromaster 10	12	0.99289	AB
POC 10	12	0.94261	AB
1:2 ENTEC:Agromaster 35	12	0.80324	AB
2:1 ENTEC Agromater 35	12	0.55872	AB
POC 35	12	0.40118	B
POC 60	12	0.3994	B
Agromaster Tropical 60	12	0.30433	B
2:1 ENTEC Agromater 60	12	0.26552	B
Agromaster Tropical 10	12	0.24208	B
Urea 35	18	0.22588	B
ENTEC 35	12	0.21878	B
Agromaster Tropical 35	12	0.19459	B
ENTEC 60	12	0.0376	B
Urea 60	12	0.01192	B

Means that do not share a letter are significantly different.

Vertisol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	64.21	12.842	2.28	0.051
Zone	5	2292.61	458.521	81.36	0.000
Time	2	179.46	89.732	15.92	0.000
Treatment*Zone	25	350.63	14.025	2.49	0.001
Treatment*Time	10	128.24	12.824	2.28	0.018
Zone*Time	10	331.61	33.161	5.88	0.000
Treatment*Zone*Time	50	432.47	8.649	1.53	0.031
Error	118	664.99	5.635		

Total 225 4593.19

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
2.37392	85.52%	72.39%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
2:1 ENTEC Agromater	36	3.12561	A
ENTEC	36	2.41296	A
1:2 ENTEC:Agromaster	36	2.34019	A
POC	36	2.03461	A
Urea	48	1.65039	A
Agromaster Tropical	34	1.48908	A

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	37	9.05882	A
2	38	3.15506	B
4	38	0.74256	C
6	38	0.07310	C
8	38	0.01971	C
10	37	0.00357	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
10	78	3.35256	A
35	78	2.02951	B
60	70	1.14434	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
POC 0 10	2	24.6907	A
1:2 ENTEC:Agromaster 0 10	2	14.3605	AB
Agromaster Tropical 0 35	2	13.8198	BC
2:1 ENTEC Agromater 0 35	2	12.7632	BCDE
2:1 ENTEC Agromater 0 10	2	12.7319	BCDE
Urea 0 10	3	12.3102	BC E
2:1 ENTEC Agromater 0 60	2	11.597	BCDEF
1:2 ENTEC:Agromaster 0 35	2	9.4484	BCDEFGH
Urea 2 10	3	9.0053	BCDEFG
ENTEC 0 10	2	8.5719	BCDEFGH
Agromaster Tropical 0 10	2	8.3125	BCDEFGH
ENTEC 0 35	2	7.566	BCDEFGH
POC 0 35	2	6.7845	BCDEFGH
ENTEC 2 35	2	6.4646	BCDEFGH
2:1 ENTEC Agromater 2 10	2	6.3691	BCDEFGH
ENTEC 2 10	2	6.1858	BCDEFGH
1:2 ENTEC:Agromaster 0 60	2	5.235	BCDEFGH
2:1 ENTEC Agromater 2 35	2	4.8252	BCDEFGH
2:1 ENTEC Agromater 2 60	2	4.782	BCDEFGH
ENTEC 0 60	2	4.7632	BCDEFGH
1:2 ENTEC:Agromaster 2 10	2	4.6716	BCDEFGH
Agromaster Tropical 0 60	1	4.2435	BCDEFGH
1:2 ENTEC:Agromaster 2 60	2	4.064	BCDEFGH
1:2 ENTEC:Agromaster 2 35	2	3.9546	BCDEFGH
Urea 4 10	3	3.4928	D FGH
ENTEC 4 10	2	3.414	CDEFGH
Urea 0 35	3	2.9687	FGH
POC 0 60	2	2.8795	DEFGH
ENTEC 2 60	2	2.4982	D FGH
ENTEC 4 35	2	2.263	D FGH
POC 2 10	2	2.1891	D FGH
2:1 ENTEC Agromater 4 10	2	2.0974	FGH
Urea 2 35	3	1.2745	GH
ENTEC 6 10	2	0.6811	GH
ENTEC 4 60	2	0.6674	GH
2:1 ENTEC Agromater 4 35	2	0.6333	GH
Urea 6 10	3	0.5483	GH
2:1 ENTEC Agromater 4 60	2	0.388	GH
Agromaster Tropical 2 10	2	0.3487	GH
ENTEC 8 10	2	0.2942	GH
1:2 ENTEC:Agromaster 4 10	2	0.21	GH

1:2 ENTEC:Agromaster 4 35	2	0.1695	GH
2:1 ENTEC Agromater 6 10	2	0.0647	GH
Agromaster Tropical 2 35	2	0.0573	GH
ENTECH 10 10	2	0.0546	GH
Urea 8 10	3	0.0531	H
POC 2 35	2	0.044	GH
POC 2 60	2	0.0239	GH
Urea 2 60	2	0.0197	GH
Urea 4 35	3	0.0149	H
Agromaster Tropical 2 60	2	0.0136	GH
Urea 0 60	2	0.0122	GH
POC 4 10	2	0.0085	GH
Urea 10 10	3	0.0061	H
ENTECH 6 60	2	0.0049	GH
1:2 ENTEC:Agromaster 6 10	2	0.0045	GH
2:1 ENTEC Agromater 8 10	2	0.0042	GH
ENTECH 6 35	2	0.0039	GH
Agromaster Tropical 4 10	2	0.0033	GH
2:1 ENTEC Agromater 6 35	2	0.0032	GH
1:2 ENTEC:Agromaster 4 60	2	0.0024	GH
Agromaster Tropical 6 10	2	0.0016	GH
1:2 ENTEC:Agromaster 6 35	2	0.0015	GH
Agromaster Tropical 8 10	2	0.0013	GH
2:1 ENTEC Agromater 10 10	2	0.0013	GH
Agromaster Tropical 10 10	2	0.0012	GH
1:2 ENTEC:Agromaster 8 10	2	0.0008	GH
Urea 6 35	3	0.0008	H
POC 4 35	2	0.0008	GH
POC 6 10	2	0.0007	GH
1:2 ENTEC:Agromaster 10 10	2	0.0004	GH
POC 8 10	2	0.0004	GH
2:1 ENTEC Agromater 6 60	2	0.0004	GH
POC 10 10	2	0.0003	GH
Urea 4 60	2	0.0003	GH
POC 4 60	2	0.0003	GH
1:2 ENTEC:Agromaster 8 35	2	0.0002	GH
Agromaster Tropical 4 35	2	0.0002	GH
Agromaster Tropical 4 60	2	0.0002	GH
ENTECH 8 60	2	0.0001	GH
Urea 8 35	3	0.0001	H
ENTECH 8 35	2	0.0001	GH
POC 6 60	2	0.0001	GH
Agromaster Tropical 6 35	2	0.0001	GH
1:2 ENTEC:Agromaster 6 60	2	0.0001	GH
POC 6 35	2	0.0001	GH
POC 10 60	2	0.0001	GH

Agromaster Tropical 6 60	2	0.0001	GH
2:1 ENTEC Agromater 10 60	2	0	GH
1:2 ENTEC:Agromaster 10 35	2	0	GH
Urea 6 60	2	0	GH
Agromaster Tropical 10 35	2	0	GH
2:1 ENTEC Agromater 8 35	2	0	GH
2:1 ENTEC Agromater 8 60	2	0	GH
POC 8 60	2	0	GH
ENTEC 10 35	2	0	GH
1:2 ENTEC:Agromaster 8 60	2	0	GH
2:1 ENTEC Agromater 10 35	2	0	GH
Urea 8 60	2	0	GH
Agromaster Tropical 8 35	2	0	GH
ENTEC 10 60	2	0	GH
Urea 10 60	2	0	GH
Urea 10 35	3	0	H
Agromaster Tropical 8 60	2	0	GH
Agromaster Tropical 10 60	1	0	D FGH
POC 8 35	2	0	GH
POC 10 35	2	0	GH
1:2 ENTEC:Agromaster 10 60	2	0	GH

Means that do not share a letter are significantly different.

NH₄-N

Factor Information

Factor	Type	Levels	Values
Treatment	Fixed	6	1:2 ENTEC:Agromaster, 2:1 ENTEC Agromater, Agromaster Tropical, ENTEC, POC, Urea
Zone	Fixed	6	0, 2, 4, 6, 8, 10
Time	Fixed	3	10, 35, 60

Ferralsol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	39727	7945	58.96	0.000
Zone	5	556432	111286	825.82	0.000

Time	2	25778	12889	95.64	0.000
Treatment*Zone	25	60696	2428	18.02	0.000
Treatment*Time	10	38631	3863	28.67	0.000
Zone*Time	10	10691	1069	7.93	0.000
Treatment*Zone*Time	50	21200	424	3.15	0.000
Error	120	16171	135		
Total	227	778922			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
11.6086	97.92%	96.07%	91.82%

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
ENTEC	36	75.8528	A
Urea	48	74.7861	A
2:1 ENTEC Agromater	36	70.7333	A B
1:2 ENTEC:Agromaster	36	65.0417	B
POC	36	52.4250	C
Agromaster Tropical	36	38.8056	D

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	38	147.862	A
2	38	104.036	B
4	38	66.681	C
6	38	34.543	D
8	38	15.890	E
10	38	8.633	E

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time

Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
10	78	77.0407	A
35	78	60.7898	B
60	72	50.9917	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
1:2 ENTEC:Agromaster 0 10	2	210.5	A
1:2 ENTEC:Agromaster 0 35	2	190	AB
POC 0 10	2	189.5	AB
2:1 ENTEC Agromater 0 10	2	179.5	AB
ENTEC 0 10	2	178	ABC
Urea 2 10	3	177.333	AB
1:2 ENTEC:Agromaster 0 60	2	172.5	ABCD
ENTEC 2 10	2	172	ABCD
POC 0 35	2	171.5	ABCD
Urea 0 10	3	170.667	ABCD
2:1 ENTEC Agromater 0 35	2	159	ABCDE
Agromaster Tropical 0 35	2	150.5	BCDEF
Agromaster Tropical 0 60	2	149	BCDEFG
2:1 ENTEC Agromater 2 10	2	148	BCDEFGH
POC 0 60	2	147.5	BCDEFGH
ENTEC 4 10	2	144	BCDEFGHI
Urea 4 10	3	142.667	BCDEFGH
1:2 ENTEC:Agromaster 2 10	2	127.5	CDEFGHIJ
2:1 ENTEC Agromater 0 60	2	125.5	DEFGHIJ
2:1 ENTEC Agromater 4 10	2	116	EFGHIJK
1:2 ENTEC:Agromaster 2 35	2	112.5	EFGHIJKL
2:1 ENTEC Agromater 2 35	2	111.5	EFGHIJKLM
Urea 0 35	3	103	GHIJKLMN
ENTEC 0 35	2	102	FGHIJKLMNO
Urea 2 35	3	101.667	GHIJKLMN
Urea 6 10	3	100.033	IJKLMN
ENTEC 2 35	2	99.8	FGHIJKLMNO
POC 2 10	2	99.5	FGHIJKLMNO
1:2 ENTEC:Agromaster 2 60	2	99.45	FGHIJKLMNO
ENTEC 6 10	2	96.75	HIJKLMNO
Agromaster Tropical 0 10	2	96.3	HIJKLMNOP
2:1 ENTEC Agromater 2 60	2	95.05	IJKLMNOPQ
Agromaster Tropical 2 60	2	93.4	IJKLMNOPQR
ENTEC 4 35	2	88.85	JKLMNOPQRST

Urea 4 35	3	87.833	JKLMNOPQR T
POC 2 35	2	87.3	JKLMNOPQRSTU
POC 2 60	2	85.5	JKLMNOPQRSTUV
ENTEC 0 60	2	84.85	JKLMNOPQRSTUV
Agromaster Tropical 2 35	2	81.8	JKLMNOPQRSTUVW
Urea 0 60	2	81.7	JKLMNOPQRSTUVW
2:1 ENTEC Agromater 4 35	2	80.25	JKLMNOPQRSTUVW
1:2 ENTEC:Agromaster 4 10	2	78.5	JKLMNOPQRSTUVWX
ENTEC 2 60	2	76.2	JKLMNOPQRSTUVWXY
Urea 2 60	2	70.4	KLMNOPQRSTUVWXYZ
2:1 ENTEC Agromater 6 10	2	63.6	LMNOPQRSTUVWXYZAA
ENTEC 4 60	2	60.75	LMNOPQRSTUVWXYZAAAB
1:2 ENTEC:Agromaster 4 35	2	60.3	MNOPQRSTUVWXYZAAABAC
ENTEC 6 35	2	57.95	NOPQRSTUVWXYZAAABACAD
2:1 ENTEC Agromater 4 60	2	57.3	NOPQRSTUVWXYZAAABACAD
Urea 6 35	3	55.433	OPQRSTUVWXYZAAABAC
Urea 4 60	2	51.3	OPQRSTUVWXYZAAABACADAE
1:2 ENTEC:Agromaster 4 60	2	44.85	PQRSTUVWXYZAAABACADAE
Agromaster Tropical 4 60	2	43.95	QRSTUVWXYZAAABACADAE
Urea 8 10	3	43.733	S UVWXYZAAABACADAE
POC 4 35	2	42.2	RSTUVWXYZAAABACADAE
POC 4 10	2	41.7	RSTUVWXYZAAABACADAE
ENTEC 8 10	2	40.65	STUVWXYZAAABACADAE
2:1 ENTEC Agromater 6 35	2	38.95	S UVWXYZAAABACADAE
ENTEC 6 60	2	38.55	S UVWXYZAAABACADAE
Urea 8 35	3	38.233	VWXYZAAABACADAE
ENTEC 8 35	2	36.6	UVWXYZAAABACADAE
POC 4 60	2	35.8	UVWXYZAAABACADAE
Agromaster Tropical 2 10	2	33.75	VWXYZAAABACADAE
Urea 6 60	2	32.1	WXYZAAABACADAE
1:2 ENTEC:Agromaster 6 10	2	28.05	XYZAAABACADAE
2:1 ENTEC Agromater 6 60	2	26.6	YZAAABACADAE
ENTEC 8 60	2	25	YZAAABACADAE
Urea 8 60	2	24.85	YZAAABACADAE
Urea 10 35	3	24.367	ZAAABACADAE
ENTEC 10 35	2	24.35	YZAAABACADAE
Urea 10 10	3	21.533	AAABACADAE
Agromaster Tropical 4 35	2	21.2	ZAAABACADAE
ENTEC 10 10	2	20.15	ZAAABACADAE
2:1 ENTEC Agromater 8 35	2	19.7	ZAAABACADAE
Urea 10 60	2	19.3	ZAAABACADAE
2:1 ENTEC Agromater 8 10	2	18.95	ZAAABACADAE
ENTEC 10 60	2	18.9	ZAAABACADAE
Agromaster Tropical 6 60	2	16.8	AAABACADAE
1:2 ENTEC:Agromaster 6 60	2	15.35	AAABACADAE
1:2 ENTEC:Agromaster 6 35	2	13.6	AAABACADAE

POC 6 60	2	13.1	AAABACADAE
2:1 ENTEC Agromater 8 60	2	13	AAABACADAE
POC 6 35	2	12.15	AAABACADAE
2:1 ENTEC Agromater 10 10	2	9	ABACADAE
POC 6 10	2	8.6	ACADAE
2:1 ENTEC Agromater 10 35	2	7.7	ADAE
1:2 ENTEC:Agromaster 8 10	2	6.85	ADAE
POC 8 60	2	4.7	AE
1:2 ENTEC:Agromaster 8 60	2	4.45	AE
1:2 ENTEC:Agromaster 10 10	2	3.8	AE
Agromaster Tropical 6 35	2	3.7	AE
2:1 ENTEC Agromater 10 60	2	3.6	AE
Agromaster Tropical 8 60	2	3.4	AE
Agromaster Tropical 4 10	2	2.8	AE
1:2 ENTEC:Agromaster 8 35	2	2	AE
POC 8 35	2	1.7	AE
POC 8 10	2	1.55	AE
POC 10 10	2	0.8	AE
1:2 ENTEC:Agromaster 10 60	2	0.55	AE
Agromaster Tropical 10 10	2	0.55	AE
Agromaster Tropical 6 10	2	0.45	AE
Agromaster Tropical 8 35	2	0.45	AE
POC 10 60	2	0.45	AE
Agromaster Tropical 10 35	2	0.25	AE
Agromaster Tropical 8 10	2	0.2	AE
POC 10 35	2	0.1	AE
Agromaster Tropical 10 60	2	0	AE
1:2 ENTEC:Agromaster 10 35	2	0	AE

Means that do not share a letter are significantly different.

Vertisol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	110702	22140	6.05	0.000
Zone	5	3901116	780223	213.30	0.000
Time	2	153283	76641	20.95	0.000
Treatment*Zone	25	293736	11749	3.21	0.000
Treatment*Time	10	167802	16780	4.59	0.000
Zone*Time	10	243988	24399	6.67	0.000
Treatment*Zone*Time	50	270948	5419	1.48	0.043
Error	118	431634	3658		

Total 225 5838150

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
60.4807	92.61%	85.90%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
ENTEC	36	161.139	A
2:1 ENTEC Agromater	36	147.864	A B
Urea	48	125.916	A B C
1:2 ENTEC:Agromaster	36	124.403	A B C
POC	36	111.047	B C
Agromaster Tropical	34	90.300	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	37	372.262	A
2	38	230.687	B
4	38	108.221	C
6	38	35.894	D
8	38	9.712	D
10	37	3.892	D

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
10	78	150.329	A
35	78	140.818	A
60	70	89.188	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
POC 0 10	2	645	A
1:2 ENTEC:Agromaster 0 35	2	583.5	AB
Agromaster Tropical 0 35	2	494	ABCD
Urea 0 10	3	475.333	ABC
POC 0 35	2	460	ABCDE
1:2 ENTEC:Agromaster 0 10	2	455	ABCDEF
2:1 ENTEC Agromater 0 10	2	439.5	ABCDEFG
2:1 ENTEC Agromater 0 35	2	434.5	ABCDEFGH
Urea 2 10	3	426	ABCDEF
ENTEC 0 35	2	407	ABCDEFGHI
ENTEC 2 35	2	366.5	BCDEFGHIJ
2:1 ENTEC Agromater 2 10	2	355	BCDEFGHIJK
ENTEC 0 10	2	343	BCDEFGHIJKL
ENTEC 2 10	2	308	CDEFGHIJKLMN
2:1 ENTEC Agromater 0 60	2	308	CDEFGHIJKLMN
Urea 0 35	3	303.333	CDEFGHIJKLM
Agromaster Tropical 0 60	1	301	BCDEFGHIJKLMNOPQRST
2:1 ENTEC Agromater 2 35	2	279	CDEFGHIJKLMN R
ENTEC 0 60	2	275	CDEFGHIJKLMN RST
POC 0 60	2	268	CDEFGHIJKLMNO RST
Agromaster Tropical 0 10	2	267	CDEFGHIJKLMNO RST
1:2 ENTEC:Agromaster 2 35	2	258.5	CDEFGHIJKLMNOP RST
1:2 ENTEC:Agromaster 2 10	2	256.5	CDEFGHIJKLMNOP RST
ENTEC 2 60	2	254.5	CDEFGHIJKLMNOP RST
Urea 4 10	3	252	DEFGHIJKLMN RS
Urea 2 35	3	235.667	EFGHIJKLMNO RST
2:1 ENTEC Agromater 2 60	2	235.5	CDEFGHIJKLMNOPQRST
ENTEC 4 35	2	220	EFGHIJKLMNOPQRST
ENTEC 4 10	2	214	EFGHIJKLMNOPQRST
1:2 ENTEC:Agromaster 2 60	2	212	EFGHIJKLMNOPQRST
POC 2 10	2	198.5	EFGHIJKLMNOPQRST
2:1 ENTEC Agromater 4 10	2	191.5	EFGHIJKLMNOPQRST
Agromaster Tropical 2 35	2	184.5	FGHIJKLMNOPQRST
Agromaster Tropical 2 60	2	170.5	GHIJKLMNOPQRST
ENTEC 4 60	2	164.5	HIJKLMNOPQRST
1:2 ENTEC:Agromaster 0 60	2	147.05	IJKLMNOPQRST
2:1 ENTEC Agromater 4 35	2	138.5	IJKLMNOPQRST
POC 2 35	2	133.5	JJKLMNOPQRST
POC 2 60	2	126	JJKLMNOPQRST
Urea 4 35	3	117.933	KLMNOPQRST
2:1 ENTEC Agromater 4 60	2	116.55	JJKLMNOPQRST
Urea 0 60	2	94.5	KLMNOPQRST

1:2 ENTEC:Agromaster 4 35	2	93.75	KLMNOPQRST
ENTECH 6 10	2	87	KLMNOPQRST
Urea 6 10	3	86.9	MNOPQRST
ENTECH 6 35	2	83.25	LMNOPQRST
Urea 2 60	2	81.4	LMNOPQRST
1:2 ENTEC:Agromaster 4 60	2	80.4	LMNOPQRST
1:2 ENTEC:Agromaster 4 10	2	76.35	LMNOPQRST
ENTECH 6 60	2	72.3	LMNOPQRST
Agromaster Tropical 2 10	2	70.8	MNOPQRST
Urea 6 35	3	63.8	NOPQRST
POC 4 35	2	54.7	NOPQRST
Agromaster Tropical 4 60	2	53.75	NOPQRST
POC 4 60	2	50.25	NOPQRST
Urea 4 60	2	49.85	NOPQRST
ENTECH 8 10	2	48.15	NOPQRST
2:1 ENTECH Agromater 6 10	2	45.55	NOPQRST
Agromaster Tropical 4 35	2	41.75	NOPQRST
2:1 ENTECH Agromater 6 35	2	41.15	NOPQRST
2:1 ENTECH Agromater 6 60	2	39.85	NOPQRST
Urea 8 10	3	26.567	OPQ
ENTECH 10 10	2	25.7	OPQRST
1:2 ENTECH:Agromaster 6 60	2	24.1	OPQRST
POC 4 10	2	22.45	OPQRST
Urea 6 60	2	21.65	OPQRST
1:2 ENTECH:Agromaster 6 35	2	19.6	OPQRST
ENTECH 8 60	2	15.35	OPQRST
1:2 ENTECH:Agromaster 6 10	2	14.9	OPQRST
POC 6 60	2	13.75	OPQRST
2:1 ENTECH Agromater 8 10	2	13.55	OPQRST
ENTECH 8 35	2	13.25	OPQRST
Urea 8 35	3	12.7	PQ
Urea 10 10	3	11.933	PQ
POC 6 35	2	10.3	OPQRST
Agromaster Tropical 4 10	2	9.75	OPQRST
Agromaster Tropical 6 60	2	7.65	OPQ ST
2:1 ENTECH Agromater 8 60	2	7.65	OPQ ST
2:1 ENTECH Agromater 10 10	2	6.9	OPQ ST
Agromaster Tropical 6 10	2	6.65	OPQ ST
Agromaster Tropical 8 10	2	6.2	OPQ ST
Agromaster Tropical 10 10	2	5.95	OPQ ST
Urea 8 60	2	5.85	OPQ ST
1:2 ENTECH:Agromaster 8 10	2	4.85	OPQ T
2:1 ENTECH Agromater 8 35	2	4.85	OPQ T
POC 6 10	2	4.45	OPQ T
1:2 ENTECH:Agromaster 8 35	2	4.15	OPQ
POC 8 10	2	4	OPQ

1:2 ENTEC:Agromaster 8 60	2	3.9	OPQ
1:2 ENTEC:Agromaster 10 10	2	3.85	OPQ
2:1 ENTEC Agromater 10 60	2	3.3	OPQ
Agromaster Tropical 6 35	2	3.25	OPQ
POC 8 60	2	3.05	OPQ
POC 10 10	2	3.05	OPQ
ENTEC 10 35	2	1.9	OPQ
Agromaster Tropical 10 35	2	1.9	OPQ
POC 10 60	2	1.85	OPQ
ENTEC 10 60	2	1.1	OPQ
1:2 ENTEC:Agromaster 10 35	2	0.85	OPQ
2:1 ENTEC Agromater 10 35	2	0.7	OPQ
Agromaster Tropical 8 35	2	0.6	OPQ
Urea 10 35	3	0.567	Q
Urea 10 60	2	0.5	OPQ
Agromaster Tropical 8 60	2	0.15	OPQ
Agromaster Tropical 10 60	1	0	MNOPQRST
POC 8 35	2	0	OPQ
POC 10 35	2	0	OPQ
1:2 ENTEC:Agromaster 10 60	2	0	OPQ

Means that do not share a letter are significantly different.

NO₃-N

Factor Information

Factor	Type	Levels	Values
Treatment	Fixed	6	1:2 ENTEC:Agromaster, 2:1 ENTEC Agromater, Agromaster Tropical, ENTEC, POC, Urea
Zone	Fixed	6	0, 2, 4, 6, 8, 10
Time	Fixed	3	10, 35, 60

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Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	1818.5	363.7	114.03	0.000
Zone	5	3804.1	760.8	238.55	0.000
Time	2	39870.6	19935.3	6250.50	0.000
Treatment*Zone	25	7274.8	291.0	91.24	0.000
Treatment*Time	10	1167.6	116.8	36.61	0.000

Zone*Time	10	3886.2	388.6	121.85	0.000
Treatment*Zone*Time	50	2041.8	40.8	12.80	0.000
Error	120	382.7	3.2		
Total	227	60543.6			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.78589	99.37%	98.80%	97.49%

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
Agromaster Tropical	36	27.6667	A
POC	36	25.6944	B
Urea	48	21.4796	C
1:2 ENTEC:Agromaster	36	21.3192	C D
2:1 ENTEC Agromater	36	20.2583	D E
ENTEC	36	20.0361	E

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
2	38	27.8611	A
0	38	25.9917	B
4	38	25.3722	B
6	38	22.2145	C
8	38	18.7306	D
10	38	16.2843	E

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
60	72	38.2486	A
35	78	24.3685	B

10 78 5.6100 C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
Agromaster Tropical 2 60	2	75.15	A
Agromaster Tropical 0 60	2	71.7	A
POC 2 60	2	61.55	B
Agromaster Tropical 2 35	2	58.1	BC
POC 0 60	2	57.15	BC
Agromaster Tropical 0 35	2	56.2	BC
Agromaster Tropical 4 60	2	53.25	CD
1:2 ENTEC:Agromaster 4 60	2	46.8	DE
POC 4 60	2	46.7	DE
POC 2 35	2	45.45	DEF
POC 0 35	2	43.3	EFG
2:1 ENTEC Agromater 4 60	2	42.25	EFGH
1:2 ENTEC:Agromaster 2 60	2	41.65	EFGH
Urea 4 60	2	41.3	EFGHI
Urea 2 60	2	40.2	EFGHIJ
Urea 0 60	2	38.65	FGHIJK
Agromaster Tropical 6 60	2	37.8	FGHIJKL
2:1 ENTEC Agromater 6 60	2	37.65	FGHIJKLM
1:2 ENTEC:Agromaster 6 60	2	37.55	FGHIJKLM
ENTEC 6 60	2	37.55	FGHIJKLM
ENTEC 4 60	2	36.8	GHIJKLMN
2:1 ENTEC Agromater 2 60	2	36.05	GHIJKLMN
Urea 6 60	2	35.95	GHIJKLMN
1:2 ENTEC:Agromaster 0 60	2	35.05	HIJKLMN
POC 6 60	2	34.95	HIJKLMN
2:1 ENTEC Agromater 0 60	2	33.65	IJKLMNOP
1:2 ENTEC:Agromaster 8 60	2	33.2	JKLMNOP

ENTEC 2 60	2	31.95	KLMNOPQ
Agromaster Tropical 4 35	2	31.75	KLMNOPQ
ENTEC 8 60	2	31.2	KLMNOPQR
ENTEC 0 60	2	31.2	KLMNOPQR
2:1 ENTEC Agromater 8 60	2	30.55	LMNOPQRS
POC 4 35	2	30.35	LMNOPQRST
1:2 ENTEC:Agromaster 10 60	2	30.25	LMNOPQRSTU
POC 8 60	2	29.8	MNOPQRSTUV
Urea 8 60	2	29.25	NOPQRSTUVW
Urea 6 35	3	27.4	OPQRSTUVWX
Urea 4 35	3	27.133 3	OPQRSTUVWXY
ENTEC 10 60	2	26.8	OPQRSTUVWXYZ
POC 10 60	2	26.75	OPQRSTUVWXYZAA
2:1 ENTEC Agromater 10 60	2	26.65	OPQRSTUVWXYZAAAB
Agromaster Tropical 8 60	2	26.15	OPQRSTUVWXYZAAABAC
ENTEC 6 35	2	25.7	OPQRSTUVWXYZAAABAC
Urea 10 60	2	25.65	PQRSTUVWXYZAAABACAD
Urea 2 35	3	25.266 7	QRSTUVWXYZAAABAC
Urea 0 35	3	24.166 7	RSTUVWXYZAAABACADAE
ENTEC 4 35	2	24.1	QRSTUVWXYZAAABACADAEAF
2:1 ENTEC Agromater 6 35	2	23.35	RSTUVWXYZAAABACADAEAF
1:2 ENTEC:Agromaster 4 35	2	22.95	STUVWXYZAAABACADAEAF
ENTEC 2 35	2	22.45	TUVWXYZAAABACADAEAF
1:2 ENTEC:Agromaster 6 35	2	22.3	UVWXYZAAABACADAEAF
2:1 ENTEC Agromater 4 35	2	22.25	VWXYZAAABACADAEAF
Urea 8 35	3	22.233 3	WXYZAAABACADAEAF
ENTEC 0 35	2	21.65	WXYZAAABACADAEAF
2:1 ENTEC Agromater 2 35	2	21.5	WXYZAAABACADAEAF
ENTEC 8 35	2	21.05	XYZAAABACADAEAF
1:2 ENTEC:Agromaster 8 35	2	20.9	XYZAAABACADAEAF
2:1 ENTEC Agromater 0 35	2	20.85	XYZAAABACADAEAF

1:2 ENTEC:Agromaster 10 35	2	20.05	YZAAABACADAEAFAG
Agromaster Tropical 6 35	2	19.15	ZAAABACADAEAFAGA H
Urea 10 35	3	18.966 7	ACADAEAFAGAH
ENTEC 10 35	2	18.8	AAABACADAEAFAGA H
1:2 ENTEC:Agromaster 2 35	2	18.75	ABACADAEAFAGAH
2:1 ENTEC Agromater 8 35	2	18.5	ACADAEAFAGAH
POC 6 35	2	18.5	ACADAEAFAGAH
Agromaster Tropical 10 60	2	18.2	ACADAEAFAGAHAI
2:1 ENTEC Agromater 10 35	2	17.7	ADAEAFAGAHAI J
POC 8 35	2	17.1	AEAFAGAHAIJA K
1:2 ENTEC:Agromaster 0 35	2	16.5	AFAGAHAIJAK AL
POC 10 35	2	12.4	AGAHAIJAKA LAM
Agromaster Tropical 8 35	2	11.8	AHAIAJAKAL AMAN
ENTEC 8 10	2	10.3	AIAJAKALA MANAO
1:2 ENTEC:Agromaster 6 10	2	10.295	AIAJAKALA MANAO
2:1 ENTEC Agromater 6 10	2	10.15	AJAKALAM ANAOAP
Urea 8 10	3	9.9667	AKALAM ANAO
1:2 ENTEC:Agromaster 4 10	2	9.95	AJAKALAM ANAOAP
Urea 10 10	3	9.8	ALAMANAO
ENTEC 10 10	2	9.7	AKALAMANAOAPAQ
2:1 ENTEC Agromater 8 10	2	9.2	AKALAMANAOAPAQAR
Agromaster Tropical 10 35	2	8.65	ALAMANAOAPAQAR
POC 2 10	2	8.45	AMANAOAPAQAR
POC 4 10	2	7.95	AMANAOAPAQAR
2:1 ENTEC Agromater 10 10	2	7.65	AMANAOAPAQAR
Agromaster Tropical 2 10	2	7.45	AMANAOAPAQAR
POC 0 10	2	7.1	AMANAOAPAQAR
1:2 ENTEC:Agromaster 8 10	2	6.9	AMANAOAPAQAR

1:2 ENTEC:Agromaster 10 10	2	6.1	AMANAOAPAQAR
ENTECH 6 10	2	6.1	AMANAOAPAQAR
POC 6 10	2	5.65	AMANAOAPAQAR
Urea 6 10	3	5.5667	AMANAOAPAQAR
Agromaster Tropical 4 10	2	5.05	AMANAOAPAQAR
POC 8 10	2	4.8	AMANAOAPAQAR
Agromaster Tropical 0 10	2	4.65	AMANAOAPAQAR
POC 10 10	2	4.55	AMANAOAPAQAR
Agromaster Tropical 10 10	2	4.45	AMANAOAPAQAR
Agromaster Tropical 6 10	2	4.25	ANAOAPAQAR
Agromaster Tropical 8 10	2	4.25	ANAOAPAQAR
2:1 ENTEC Agromater 4 10	2	3.7	AOAPAQAR
1:2 ENTEC:Agromaster 2 10	2	2.75	AOAPAQAR
ENTECH 4 10	2	2.25	APAQAR
Urea 4 10	3	2.1667	AR
1:2 ENTEC:Agromaster 0 10	2	1.8	AQAR
2:1 ENTEC Agromater 2 10	2	1.65	AR
ENTECH 2 10	2	1.6	AR
Urea 2 10	3	1.5333	
ENTECH 0 10	2	1.45	AR
Urea 0 10	3	1.4333	
2:1 ENTEC Agromater 0 10	2	1.35	AR

Means that do not share a letter are significantly different.

Vertisol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	29729	5945.8	89.82	0.000
Zone	5	12587	2517.5	38.03	0.000
Time	2	88168	44084.2	665.96	0.000
Treatment*Zone	25	18951	758.0	11.45	0.000
Treatment*Time	10	16025	1602.5	24.21	0.000
Zone*Time	10	7083	708.3	10.70	0.000

Treatment*Zone*Time	50	10081	201.6	3.05	0.000
Error	118	7811	66.2		
Total	225	188566			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
8.13613	95.86%	92.10%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
Urea	48	44.7491	A
POC	36	36.4889	B
Agromaster Tropical	34	33.1389	B
ENTEC	36	18.0500	C
2:1 ENTEC Agromater	36	17.8056	C
1:2 ENTEC:Agromaster	36	15.0861	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	37	36.5120	A
2	38	35.8352	A B
4	38	30.9019	B C
6	38	25.7454	C
8	38	20.2259	D
10	37	16.0981	D

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
60	70	50.3611	A
35	78	30.8625	B

10 78 1.4356 C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
Urea 0 60	2	115.5	A
Urea 2 60	2	108	AB
POC 0 60	2	99.8	ABC
Agromaster Tropical 2 60	2	99.4	ABC
Agromaster Tropical 0 60	1	99.2	ABCD
POC 0 35	2	93.5	ABCD
Urea 4 60	2	91.95	ABCD
POC 2 60	2	85.55	ABCDE
Agromaster Tropical 2 35	2	78.7	BCDEF
Urea 6 60	2	76.65	BCDEFG
Agromaster Tropical 0 35	2	68.2	CDEFGHI
Urea 4 35	3	66.567	CDEFGH
Agromaster Tropical 4 60	2	65.7	CDEFGHIJK
POC 2 35	2	64.5	CDEFGHIJKL
POC 4 60	2	63.75	CDEFGHIJKLM
Urea 2 35	3	63.6	DEFGHIJ
Urea 8 60	2	59.75	DEFGHIJKLMN
Urea 0 35	3	56.767	EFGHIJKLMN
Urea 6 35	3	51.067	FGHIJKLMNO
Urea 10 60	2	47	FGHIJKLMNOP
Agromaster Tropical 4 35	2	46.95	FGHIJKLMNOPQ
POC 4 35	2	46.15	FGHIJKLMNOPQR
POC 6 60	2	46.15	FGHIJKLMNOPQR
2:1 ENTEC Agromater 4 60	2	42.4	FGHIJKLMNOPQRS
Agromaster Tropical 6 60	2	40.35	GHIJKLMNOPQRST
2:1 ENTEC Agromater 6 60	2	40	HIJKLMNOPQRSTU
ENTEC 6 60	2	38.75	HIJKLMNOPQRSTUV
POC 8 60	2	38.65	HIJKLMNOPQRSTUV
1:2 ENTEC:Agromaster 4 60	2	37.9	HIJKLMNOPQRSTUVW
ENTEC 8 60	2	36.7	HIJKLMNOPQRSTUVWX
2:1 ENTEC Agromater 2 60	2	36.45	HIJKLMNOPQRSTUVWXY
2:1 ENTEC Agromater 8 60	2	35.65	HIJKLMNOPQRSTUVWXYZ
Urea 8 35	3	35.333	IJKLMNOPQRSTUV
1:2 ENTEC:Agromaster 2 60	2	34.75	HIJKLMNOPQRSTUVWXYZAA
POC 6 35	2	33.8	HIJKLMNOPQRSTUVWXYZAAAB
1:2 ENTEC:Agromaster 6 60	2	33.35	HIJKLMNOPQRSTUVWXYZAAABAC
ENTEC 10 60	2	33.05	IJKLMNOPQRSTUVWXYZAAABAC
ENTEC 4 60	2	33.05	IJKLMNOPQRSTUVWXYZAAABAC
POC 10 60	2	32.1	IJKLMNOPQRSTUVWXYZAAABAC

2:1 ENTEC Agromater 10 60	2	31.05	JKLMNOPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 0 60	2	29.4	KLMNOPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 8 60	2	28.65	LMNOPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 0 60	2	28	MNOPQRSTUVWXYZAAABAC
ENTECH 2 60	2	27.95	MNOPQRSTUVWXYZAAABAC
ENTECH 6 35	2	27.45	MNOPQRSTUVWXYZAAABAC
Agromaster Tropical 8 60	2	27.25	NOPQRSTUVWXYZAAABAC
ENTECH 8 35	2	26.6	NOPQRSTUVWXYZAAABAC
ENTECH 0 60	2	26.3	NOPQRSTUVWXYZAAABAC
Urea 10 35	3	25.767	OPQRSTUVWXYZAAABAC
Agromaster Tropical 6 35	2	24.7	NOPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 6 35	2	23.25	OPQRSTUVWXYZAAABAC
ENTECH 10 35	2	23.15	OPQRSTUVWXYZAAABAC
Agromaster Tropical 10 60	1	21.8	JKLMNOPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 8 35	2	21.55	OPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 10 60	2	21.05	OPQRSTUVWXYZAAABAC
ENTECH 4 35	2	19.65	OPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 6 35	2	19.3	OPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 4 35	2	17.85	OPQRSTUVWXYZAAABAC
POC 8 35	2	17.5	PQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 4 35	2	16.4	PQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 10 35	2	15.3	PQRSTUVWXYZAAABAC
Agromaster Tropical 8 35	2	14.85	PQRSTUVWXYZAAABAC
ENTECH 0 35	2	14.5	PQRSTUVWXYZAAABAC
ENTECH 2 35	2	14.4	PQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 2 35	2	12.2	PQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 8 35	2	12.15	PQRSTUVWXYZAAABAC
POC 10 35	2	11.4	PQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 2 35	2	10.55	QRSTUVWXYZAAABAC
2:1 ENTEC Agromater 0 35	2	10.3	RSTUVWXYZAAABAC
Agromaster Tropical 10 35	2	9.15	STUVWXYZAAABAC
1:2 ENTEC:Agromaster 10 35	2	9.1	STUVWXYZAAABAC
1:2 ENTEC:Agromaster 0 35	2	8.85	STUVWXYZAAABAC
POC 2 10	2	6.4	STUVWXYZAAABAC
POC 0 10	2	4.8	TUVWXYZAAABAC
POC 4 10	2	3.7	UVWXYZAAABAC
POC 8 10	2	3.05	VWXYZAAABAC
POC 10 10	2	3.05	VWXYZAAABAC
POC 6 10	2	2.95	VWXYZAAABAC
1:2 ENTEC:Agromaster 10 10	2	2.8	VWXYZAAABAC
1:2 ENTEC:Agromaster 8 10	2	2.65	VWXYZAAABAC
1:2 ENTEC:Agromaster 6 10	2	2.35	VWXYZAAABAC
1:2 ENTEC:Agromaster 4 10	2	1.95	WXYZAAABAC
Urea 4 10	3	1.867	AAABAC

Urea 6 10	3	1.7	AAABAC
2:1 ENTEC Agromater 10 10	2	1.5	WXYZAAABAC
Urea 8 10	3	1.433	ABAC
Urea 10 10	3	1.4	ABAC
2:1 ENTEC Agromater 8 10	2	1.25	XYZAAABAC
ENTEC 10 10	2	1.1	XYZAAABAC
ENTEC 8 10	2	1.05	XYZAAABAC
1:2 ENTEC:Agromaster 2 10	2	1.05	XYZAAABAC
2:1 ENTEC Agromater 6 10	2	0.9	XYZAAABAC
2:1 ENTEC Agromater 2 10	2	0.7	XYZAAABAC
ENTEC 6 10	2	0.7	XYZAAABAC
1:2 ENTEC:Agromaster 0 10	2	0.7	XYZAAABAC
Urea 2 10	3	0.633	ABAC
Urea 0 10	3	0.5	AC
2:1 ENTEC Agromater 0 10	2	0.45	XYZAAABAC
2:1 ENTEC Agromater 4 10	2	0.3	XYZAAABAC
Agromaster Tropical 0 10	2	0.25	YZAAABAC
ENTEC 2 10	2	0.2	YZAAABAC
ENTEC 0 10	2	0.2	YZAAABAC
ENTEC 4 10	2	0.1	YZAAABAC
Agromaster Tropical 2 10	2	0	ZAAABAC
Agromaster Tropical 4 10	2	0	ZAAABAC
Agromaster Tropical 8 10	2	0	ZAAABAC
Agromaster Tropical 6 10	2	0	ZAAABAC
Agromaster Tropical 10 10	2	0	ZAAABAC

Means that do not share a letter are significantly different.

N retained in PCU granules

Factor Information

Factor	Type	Levels	Values
Treatment	Fixed	4	1:2 E:A, 2:1 E:A, PCU, POC
Time	Fixed	3	10, 35, 60

Ferralsol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	3	1630.3	543.4	9.70	0.002

Time	2	34464.2	17232.1	307.46	0.000
Treatment*Time	6	1325.7	220.9	3.94	0.021
Error	12	672.6	56.0		
Total	23	38092.7			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
7.48643	98.23%	96.62%	92.94%

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
1:2 E:A	6	79.4842	A
PCU	6	61.3021	B
2:1 E:A	6	60.8544	B
POC	6	59.4017	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
10	8	117.424	A
35	8	49.819	B
60	8	28.538	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Time Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Time	N	Mean	Grouping
1:2 E:A 10	2	146.343	A
PCU 10	2	112.993	B
2:1 E:A 10	2	105.915	B
POC 10	2	104.446	B
1:2 E:A 35	2	58.024	C
POC 35	2	51.962	C D
PCU 35	2	48.468	C D E

2:1 E:A 35	2	40.821	C	D	E
2:1 E:A 60	2	35.827	C	D	E
1:2 E:A 60	2	34.086	C	D	E
PCU 60	2	22.444		D	E
POC 60	2	21.797			E

Means that do not share a letter are significantly different.

Vertisol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment_D	3	1331.1	443.71	1.18	0.358
Time_D	2	16337.0	8168.50	21.72	0.000
Treatment_D*Time_D	6	568.1	94.68	0.25	0.949
Error	12	4513.8	376.15		
Total	23	22750.0			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
19.3947	80.16%	61.97%	20.64%

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
1:2 E:A	6	72.7023	A
2:1 E:A	6	72.5731	A
POC	6	59.0371	A
PCU	6	56.6425	A

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time_D	N	Mean	Grouping
10	8	96.8395	A

35	8	65.9339	B
60	8	32.9427	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment_D*Time_D	N	Mean	Grouping	
1:2 E:A 10	2	107.278	A	
2:1 E:A 10	2	102.471	A	
POC 10	2	96.780	A	B
PCU 10	2	80.829	A	B
2:1 E:A 35	2	79.873	A	B
1:2 E:A 35	2	71.864	A	B
POC 35	2	56.479	A	B
PCU 35	2	55.519	A	B
1:2 E:A 60	2	38.964	A	B
2:1 E:A 60	2	35.374	A	B
PCU 60	2	33.580	A	B
POC 60	2	23.852		B

Means that do not share a letter are significantly different.

pH

Factor Information

Factor	Type	Levels	Values
Treatment	Fixed	6	1:2 ENTEC:Agromaster, 2:1 ENTEC Agromater, Agromaster Tropical, ENTEC, POC, Urea
Zone	Fixed	6	0, 2, 4, 6, 8, 10
Time	Fixed	3	10, 35, 60

Ferralsol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	36.833	7.3666	87.20	0.000

Zone	5	320.557	64.1115	758.87	0.000
Time	2	67.360	33.6798	398.66	0.000
Treatment*Zone	25	53.827	2.1531	25.49	0.000
Treatment*Time	10	9.111	0.9111	10.78	0.000
Zone*Time	10	12.700	1.2700	15.03	0.000
Treatment*Zone*Time	50	7.281	0.1456	1.72	0.009
Error	119	10.053	0.0845		
Total	226	526.744			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.290660	98.09%	96.38%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
ENTEC	36	7.24611	A
Urea	48	7.11444	A B
2:1 ENTEC Agromater	35	7.02278	B
1:2 ENTEC:Agromaster	36	6.68278	C
POC	36	6.41028	D
Agromaster Tropical	36	6.10167	E

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	37	8.49491	A
2	38	8.03907	B
4	38	7.10343	C
6	38	6.05204	D
8	38	5.52352	E
10	38	5.36509	E

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time

Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
10	78	7.44620	A
35	78	6.75407	B
60	71	6.08875	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
1:2 ENTEC:Agromaster 0 60	2	9.325	A
1:2 ENTEC:Agromaster 0 35	2	8.86	AB
POC 0 10	2	8.825	AB
1:2 ENTEC:Agromaster 0 10	2	8.825	AB
Urea 0 10	3	8.80667	AB
POC 0 60	2	8.77	ABCD
ENTEC 0 10	2	8.77	ABCD
2:1 ENTEC Agromater 0 10	2	8.745	ABCD
2:1 ENTEC Agromater 0 35	2	8.73	ABCD
Agromaster Tropical 0 10	2	8.725	ABCDE
ENTEC 2 10	2	8.715	ABCDE
Urea 2 10	3	8.7	AB D
ENTEC 4 10	2	8.665	ABCDE
POC 0 35	2	8.655	ABCDE
2:1 ENTEC Agromater 2 10	2	8.655	ABCDE
Urea 4 10	3	8.65	ABCD
Agromaster Tropical 0 60	2	8.625	ABCDE
1:2 ENTEC:Agromaster 2 10	2	8.595	ABCDE
2:1 ENTEC Agromater 4 10	2	8.565	ABCDE
ENTEC 6 10	2	8.545	ABCDE
1:2 ENTEC:Agromaster 2 35	2	8.535	ABCDE
Urea 6 10	3	8.49	ABCDE
POC 2 10	2	8.455	ABCDEF
Agromaster Tropical 0 35	2	8.45	ABCDEFG
2:1 ENTEC Agromater 2 35	2	8.39	ABCDEFGH
2:1 ENTEC Agromater 0 60	1	8.34	ABCDEFGHIJKLM
1:2 ENTEC:Agromaster 2 60	2	8.335	ABCDEFGH
Urea 0 35	3	8.32667	ABCDEFGH
1:2 ENTEC:Agromaster 4 10	2	8.28	ABCDEFGHI
ENTEC 2 35	2	8.245	ABCDEFGHIJ
Urea 2 35	3	8.24333	ABCDEFGH
ENTEC 0 35	2	8.24	ABCDEFGHIJK
2:1 ENTEC Agromater 2 60	2	8.23	ABCDEFGHIJK
2:1 ENTEC Agromater 4 35	2	8.165	ABCDEFGHIJK

ENTEC 4 35	2	8.16	ABCDEFGHIJK M
2:1 ENTEC Agromater 6 10	2	8.095	ABCDEFGHIJK M
Urea 4 35	3	8.05667	BCDEFGHIJK
POC 2 35	2	7.82	BCDEFGHIJKLMN
ENTEC 2 60	2	7.8	BCDEFGHIJKLMNO
1:2 ENTEC:Agromaster 4 35	2	7.675	BCDEFGHIJKLMNOP
Urea 8 10	3	7.59667	C EFGHIJKLMNOP
Agromaster Tropical 2 10	2	7.525	CDEFGHIJKLMNOPQ
ENTEC 8 10	2	7.5	C EFGHIJKLMNOPQ
POC 2 60	2	7.43	EFGHIJKLMNOPQR
Urea 2 60	2	7.22	FGHIJKLMNOPQRS
ENTEC 0 60	2	7.17	FGHIJKLMNOPQRST
POC 4 10	2	7.155	GHIJKLMNOPQRST
ENTEC 4 60	2	7.145	HIJKLMNOPQRST
ENTEC 6 35	2	7.02	IJKLMNOPQRSTU
2:1 ENTEC Agromater 4 60	2	6.975	JKLMNOPQRSTUV
Agromaster Tropical 2 60	2	6.945	KLMNOPQRSTUVW
Urea 6 35	3	6.86667	L NOPQRSTUV
Agromaster Tropical 2 35	2	6.865	LMNOPQRSTUVWX
Urea 0 60	2	6.72	NOPQRSTUVWXY
1:2 ENTEC:Agromaster 6 10	2	6.57	NOPQRSTUVWXYZ
Urea 4 60	2	6.51	OPQRSTUVWXYZ
ENTEC 10 10	2	6.435	PQRSTUVWXYZAA
1:2 ENTEC:Agromaster 4 60	2	6.34	QRSTUVWXYZAAAB
Urea 10 10	3	6.34	QRSTUVWXYZAA
2:1 ENTEC Agromater 6 35	2	6.31	QRSTUVWXYZAAABAC
POC 4 35	2	6.295	QRSTUVWXYZAAABAC
2:1 ENTEC Agromater 8 10	2	6.245	QRSTUVWXYZAAABAC
ENTEC 8 35	2	6.185	RSTUVWXYZAAABACAD
Urea 8 35	3	6.06667	STUVWXYZAAABACAD
2:1 ENTEC Agromater 10 10	2	5.985	STUVWXYZAAABACADAE
POC 6 10	2	5.935	STUVWXYZAAABACADAE
ENTEC 6 60	2	5.91	TUVWXYZAAABACADAE
Agromaster Tropical 4 10	2	5.91	TUVWXYZAAABACADAE
ENTEC 10 35	2	5.815	UVWXYZAAABACADAEAF
Agromaster Tropical 6 10	2	5.79	UVWXYZAAABACADAEAF
Urea 10 35	3	5.77667	WXYZAAABACADAE
1:2 ENTEC:Agromaster 8 10	2	5.775	UVWXYZAAABACADAEAFAG
POC 8 10	2	5.73	UVWXYZAAABACADAEAFAG
Agromaster Tropical 8 10	2	5.69	VWXYZAAABACADAEAFAGAH
2:1 ENTEC Agromater 8 35	2	5.675	WXYZAAABACADAEAFAGAH
POC 10 10	2	5.61	XYZAAABACADAEAFAGAHAI
Agromaster Tropical 10 10	2	5.585	XYZAAABACADAEAFAGAHAI
1:2 ENTEC:Agromaster 10 10	2	5.58	XYZAAABACADAEAFAGAHAI
POC 6 35	2	5.485	YZAAABACADAEAFAGAHIAJ

Urea 6 60	2	5.395	ZAAABACADAEAFAGAHIAJ
POC 4 60	2	5.295	ZAAABACADAEAFAGAHIAJ
2:1 ENTEC Agromater 10 35	2	5.28	ZAAABACADAEAFAGAHIAJ
Agromaster Tropical 10 35	2	5.28	ZAAABACADAEAFAGAHIAJ
1:2 ENTEC:Agromaster 6 35	2	5.205	AAABACADAEAFAGAHIAJ
POC 10 35	2	5.2	AAABACADAEAFAGAHIAJ
Urea 8 60	2	5.195	AAABACADAEAFAGAHIAJ
Agromaster Tropical 10 60	2	5.195	AAABACADAEAFAGAHIAJ
Agromaster Tropical 8 35	2	5.135	ABACADAEAFAGAHIAJ
Urea 10 60	2	5.1	ABACADAEAFAGAHIAJ
ENTEC 8 60	2	5.09	ABACADAEAFAGAHIAJ
Agromaster Tropical 4 60	2	5.075	ABACADAEAFAGAHIAJ
POC 8 35	2	5.04	ACADAEAFAGAHIAJ
2:1 ENTEC Agromater 6 60	2	5.025	ACADAEAFAGAHIAJ
ENTEC 10 60	2	5.02	ACADAEAFAGAHIAJ
Agromaster Tropical 4 35	2	4.945	ADAEAFAGAHIAJ
Agromaster Tropical 6 35	2	4.83	AEAFAGAHIAJ
1:2 ENTEC:Agromaster 10 35	2	4.73	AEAFAGAHIAJ
POC 10 60	2	4.72	AEAFAGAHIAJ
Agromaster Tropical 8 60	2	4.7	AEAFAGAHIAJ
1:2 ENTEC:Agromaster 8 35	2	4.59	AFAGAHIAJ
2:1 ENTEC Agromater 8 60	2	4.57	AFAGAHIAJ
Agromaster Tropical 6 60	2	4.56	AFAGAHIAJ
POC 6 60	2	4.545	AFAGAHIAJ
1:2 ENTEC:Agromaster 10 60	2	4.49	AGAHIAJ
2:1 ENTEC Agromater 10 60	2	4.43	AHAIAJ
POC 8 60	2	4.42	AHAIAJ
1:2 ENTEC:Agromaster 6 60	2	4.36	AIAJ
1:2 ENTEC:Agromaster 8 60	2	4.22	AJ

Means that do not share a letter are significantly different.

Vertisol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	23.14	4.6285	29.88	0.000
Zone	5	240.56	48.1111	310.54	0.000
Time	2	68.64	34.3218	221.54	0.000
Treatment*Zone	25	41.42	1.6567	10.69	0.000

Treatment*Time	10	12.64	1.2637	8.16	0.000
Zone*Time	10	13.08	1.3084	8.45	0.000
Treatment*Zone*Time	50	17.30	0.3460	2.23	0.000
Error	117	18.13	0.1549		
Total	224	449.25			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.393606	95.97%	92.28%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
ENTEC	36	7.55889	A
2:1 ENTEC Agromater	36	7.40417	A B
1:2 ENTEC:Agromaster	35	7.15222	B
Urea	48	6.83111	C
Agromaster Tropical	34	6.78639	C
POC	36	6.69556	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	36	8.80778	A
2	38	8.15204	B
4	38	7.04648	C
10	37	6.18926	D
6	38	6.17231	D
8	38	6.06046	D

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
10	78	7.82634	A
35	77	6.89824	B
60	70	6.48958	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
1:2 ENTEC:Agromaster 0 60	2	9.19	A
2:1 ENTEC Agromater 0 60	2	9.15	AB
1:2 ENTEC:Agromaster 0 35	1	9.15	ABCDEFGG
POC 0 10	2	9.135	AB
1:2 ENTEC:Agromaster 0 10	2	9.07	ABC
Agromaster Tropical 0 10	2	9.05	ABC
2:1 ENTEC Agromater 0 35	2	9.04	ABC
2:1 ENTEC Agromater 0 10	2	9.035	ABC
Agromaster Tropical 0 35	2	9.01	ABC
Urea 0 10	3	8.96667	AB
ENTEC 0 10	2	8.945	ABC
Urea 2 10	3	8.88667	ABC
2:1 ENTEC Agromater 2 60	2	8.88	ABCD
ENTEC 0 35	2	8.84	ABCDE
ENTEC 2 10	2	8.84	ABCDE
1:2 ENTEC:Agromaster 2 10	2	8.83	ABCDE
2:1 ENTEC Agromater 2 10	2	8.82	ABCDE
ENTEC 2 35	2	8.815	ABCDE
2:1 ENTEC Agromater 2 35	2	8.805	ABCDE
ENTEC 0 60	2	8.78	ABCDE
1:2 ENTEC:Agromaster 2 60	2	8.775	ABCDEF
ENTEC 4 10	2	8.765	ABCDEFGG
1:2 ENTEC:Agromaster 2 35	2	8.755	ABCDEFGG
POC 0 35	2	8.725	ABCDEFGGH
Agromaster Tropical 0 60	1	8.72	ABCDEFGHJKLMNO
Urea 4 10	3	8.71333	ABCD
POC 2 10	2	8.615	ABCDEFGH L
2:1 ENTEC Agromater 4 10	2	8.605	ABCDEFGH LM
ENTEC 4 35	2	8.58	ABCDEFGH LMN
Urea 0 35	3	8.56333	ABCDEFGH
ENTEC 2 60	2	8.505	ABCDEFGHI LMN
POC 0 60	2	8.495	ABCDEFGHIJ LMN
Urea 2 35	3	8.3	ABCDEFGHIJ LMNO
ENTEC 6 10	2	8.275	ABCDEFGHIJKLMNOP
Agromaster Tropical 2 10	2	8.26	ABCDEFGHIJKLMNOP

2:1 ENTEC Agromater 4 35	2	8.23	ABCDEFGHIJKLMNPOQ
ENTECH 4 60	2	8.18	ABCDEFGHIJKLMNPOQR
1:2 ENTEC:Agromaster 4 10	2	7.94	ABCDEFGHIJKLMNPOQRS
Urea 6 10	3	7.93667	ABCDEFGHIJKLMNPOQR
2:1 ENTEC Agromater 4 60	2	7.72	ABCDEFGHIJKLMNPOQRST
ENTECH 8 10	2	7.69	ABCDEFGHIJKLMNPOQRST
2:1 ENTEC Agromater 6 10	2	7.625	ABCDEFGHIJKLMNPOQRSTU
1:2 ENTEC:Agromaster 4 35	2	7.41	BCDEFGHIJKLMNPOQRSTUVW
ENTECH 10 10	2	7.325	CDEFGHIJKLMNPOQRSTUVWX
Urea 8 10	3	7.28333	DEFGHIJKLMNPOQRSTUV
Agromaster Tropical 4 10	2	7.1	EFGHIJKLMNPOQRSTUVWXY
POC 2 35	2	7.09	EFGHIJKLMNPOQRSTUVWXY
2:1 ENTEC Agromater 8 10	2	7.015	FGHIJKLMNPOQRSTUVWXYZ
POC 4 10	2	7.01	GHIJKLMNPOQRSTUVWXYZ
Agromaster Tropical 2 35	2	6.97	HIJKLMNPOQRSTUVWXYZAA
Urea 10 10	3	6.93667	IJK OPQRSTUVWXY
1:2 ENTEC:Agromaster 6 10	2	6.88	IJKLMNPOQRSTUVWXYZAA
Agromaster Tropical 6 10	2	6.88	IJKLMNPOQRSTUVWXYZAA
Agromaster Tropical 8 10	2	6.85	IJK MNOPQRSTUVWXYZAAAB
Urea 2 60	2	6.82	IJK NOPQRSTUVWXYZAAAB
Agromaster Tropical 10 10	2	6.815	IJK OPQRSTUVWXYZAAAB
2:1 ENTEC Agromater 10 10	2	6.735	JK OPQRSTUVWXYZAAAB
Urea 0 60	2	6.675	K PQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 8 10	2	6.65	K PQRSTUVWXYZAAABAC
POC 6 10	2	6.65	K PQRSTUVWXYZAAABAC
Urea 4 35	3	6.64333	QRSTUVWXYZAAAB
1:2 ENTEC:Agromaster 10 10	2	6.545	PQRSTUVWXYZAAABAC
POC 8 10	2	6.545	PQRSTUVWXYZAAABAC
POC 10 10	2	6.525	PQRSTUVWXYZAAABACAD
Agromaster Tropical 2 60	2	6.445	RSTUVWXYZAAABACADAE
POC 2 60	2	6.325	STUVWXYZAAABACADAE
Agromaster Tropical 10 60	1	6.31	K OPQRSTUVWXYZAAABACADAE
ENTECH 6 60	2	6.28	STUVWXYZAAABACADAE
ENTECH 6 35	2	6.24	STUVWXYZAAABACADAE
1:2 ENTEC:Agromaster 10 35	2	6.205	STUVWXYZAAABACADAE
POC 10 35	2	6.145	TUVWXYZAAABACADAE
POC 10 60	2	6.12	TUVWXYZAAABACADAE
Agromaster Tropical 8 60	2	6.115	TUVWXYZAAABACADAE
1:2 ENTEC:Agromaster 8 35	2	6.08	TUVWXYZAAABACADAE
Agromaster Tropical 8 35	2	6.075	TUVWXYZAAABACADAE
POC 8 35	2	5.99	TUVWXYZAAABACADAE
2:1 ENTEC Agromater 10 35	2	5.925	UVWXYZAAABACADAE
2:1 ENTEC Agromater 6 35	2	5.87	UVWXYZAAABACADAE
1:2 ENTEC:Agromaster 6 35	2	5.84	VWXYZAAABACADAE

Agromaster Tropical 6 35	2	5.815	VWXYZAAABACADAE
Urea 10 35	3	5.77	XYZAAABACADAE
2:1 ENTEC Agromater 10 60	2	5.755	VWXYZAAABACADAE
ENTECH 10 35	2	5.735	VWXYZAAABACADAE
Agromaster Tropical 6 60	2	5.72	VWXYZAAABACADAE
Agromaster Tropical 10 35	2	5.695	VWXYZAAABACADAE
ENTECH 10 60	2	5.67	WXYZAAABACADAE
POC 8 60	2	5.67	WXYZAAABACADAE
POC 4 35	2	5.665	WXYZAAABACADAE
Urea 6 35	3	5.66	YZAAABACADAE
1:2 ENTEC:Agromaster 4 60	2	5.625	XYZAAABACADAE
Urea 10 60	2	5.61	XYZAAABACADAE
1:2 ENTEC:Agromaster 10 60	2	5.585	XYZAAABACADAE
1:2 ENTEC:Agromaster 8 60	2	5.5	YZAAABACADAE
2:1 ENTEC Agromater 8 35	2	5.46	YZAAABACADAE
Urea 8 35	3	5.39	AAABACADAE
2:1 ENTEC Agromater 6 60	2	5.375	YZAAABACADAE
ENTECH 8 35	2	5.355	YZAAABACADAE
POC 6 60	2	5.295	ZAAABACADAE
POC 6 35	2	5.285	ZAAABACADAE
ENTECH 8 60	2	5.24	AAABACADAE
POC 4 60	2	5.235	AAABACADAE
2:1 ENTEC Agromater 8 60	2	5.23	AAABACADAE
Agromaster Tropical 4 35	2	5.21	AAABACADAE
Agromaster Tropical 4 60	2	5.115	ABACADAE
Urea 4 60	2	5.09	ABACADAE
Urea 8 60	2	4.95	ACADAE
Urea 6 60	2	4.765	ADAE
1:2 ENTEC:Agromaster 6 60	2	4.71	AE

Means that do not share a letter are significantly different.

Electrical conductivity (EC)

Factor Information

Factor	Type	Levels	Values
Treatment	Fixed	6	1:2 ENTEC:Agromaster, 2:1 ENTEC Agromater, Agromaster Tropical, ENTECH, POC, Urea
Zone	Fixed	6	0, 2, 4, 6, 8, 10
Time	Fixed	3	10, 35, 60

Ferralsol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	100263	20053	5.53	0.000
Zone	5	4726502	945300	260.69	0.000
Time	2	352450	176225	48.60	0.000
Treatment*Zone	25	547745	21910	6.04	0.000
Treatment*Time	10	1357900	135790	37.45	0.000
Zone*Time	10	420106	42011	11.59	0.000
Treatment*Zone*Time	50	1001291	20026	5.52	0.000
Error	119	431504	3626		
Total	226	9165390			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
60.2170	95.29%	91.06%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
ENTEC	36	412.778	A
Urea	48	401.398	A
2:1 ENTEC Agromater	35	399.667	A
1:2 ENTEC:Agromaster	36	385.667	A B
POC	36	375.444	A B
Agromaster Tropical	36	347.389	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	37	622.185	A
2	38	517.120	B
4	38	415.426	C

6	38	310.528	D
8	38	241.861	E
10	38	215.222	E

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time

Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
60	71	443.681	A
10	78	365.111	B
35	78	352.380	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
Agromaster Tropical 0 60	2	896	A
1:2 ENTEC:Agromaster 0 10	2	836.5	AB
Urea 0 10	3	829.667	AB
ENTEC 2 10	2	823.5	AB
Agromaster Tropical 2 60	2	786	ABC
ENTEC 0 10	2	781.5	ABCD
2:1 ENTEC Agromater 0 10	2	767	ABCD
POC 2 60	2	762.5	ABCD
Agromaster Tropical 0 35	2	745.5	ABCDE
POC 0 60	2	745	ABCDE
Urea 2 10	3	696.667	ABCDEF
POC 0 35	2	688.5	ABCDEFG
POC 0 10	2	680.5	ABCDEFG
2:1 ENTEC Agromater 2 10	2	671	ABCDEFGH
1:2 ENTEC:Agromaster 0 60	2	663	ABCDEFGHI
ENTEC 4 10	2	646.5	ABCDEFGHIJ
Urea 4 10	3	634.667	BCDEFGHI
1:2 ENTEC:Agromaster 0 35	2	621	BCDEFGHIJK
Agromaster Tropical 2 35	2	608	BCDEFGHIJKL
Agromaster Tropical 4 60	2	600	BCDEFGHIJKLM
1:2 ENTEC:Agromaster 2 60	2	539.5	CDEFGHIJKLMN
2:1 ENTEC Agromater 0 35	2	523	CDEFGHIJKLMNO
2:1 ENTEC Agromater 0 60	1	522	BCDEFGHIJKLMNOPQR
POC 2 35	2	516	DEFGHIJKLMNO
POC 4 60	2	491	EFGHIJKLMNOP
2:1 ENTEC Agromater 4 10	2	488.5	EFGHIJKLMNOP

1:2 ENTEC:Agromaster 4 60	2	488	EFGHIJKLMNOP
2:1 ENTEC Agromater 2 60	2	486	EFGHIJKLMNOP
2:1 ENTEC Agromater 4 60	2	481	EFGHIJKLMNOP S
1:2 ENTEC:Agromaster 2 10	2	465	FGHIJKLMNOPQ S
Urea 4 60	2	457	FGHIJKLMNOPQRS
ENTEC 4 60	2	432.5	GHIJKLMNOPQRSTU
2:1 ENTEC Agromater 2 35	2	430	GHIJKLMNOPQRSTU
Urea 0 35	3	428.667	HIJKLMNOPQRS
ENTEC 6 60	2	420	GHIJKLMNOPQRSTUV
Urea 2 35	3	419	IJKLMNOPQRS U
ENTEC 0 60	2	411	HIJKLMNOPQRSTUVW
2:1 ENTEC Agromater 6 60	2	409	HIJKLMNOPQRSTUVW
Urea 6 60	2	407.5	HIJKLMNOPQRSTUVW
ENTEC 2 60	2	407	HIJKLMNOPQRSTUVW
1:2 ENTEC:Agromaster 2 35	2	406.5	HIJKLMNOPQRSTUVW
POC 2 10	2	402	HIJKLMNOPQRSTUVW
1:2 ENTEC:Agromaster 6 60	2	400	IJKLMNOPQRSTUVW
ENTEC 2 35	2	399.5	IJKLMNOPQRSTUVW
Agromaster Tropical 6 60	2	397	IJKLMNOPQRSTUVWX
Urea 4 35	3	388	KLMNOPQRSTUVW
ENTEC 0 35	2	387	JKLMNOPQRSTUVWXY
ENTEC 4 35	2	384.5	JKLMNOPQRSTUVWXY
ENTEC 6 10	2	382	JKLMNOPQRSTUVWXY
POC 6 60	2	372	KLMNOPQRSTUVWXYZ
2:1 ENTEC Agromater 4 35	2	366	KLMNOPQRSTUVWXYZAAAB
Urea 6 10	3	365.333	LMNOPQRSTUVWXY
ENTEC 8 60	2	351	LMNOPQRSTUVWXYZAAABAC
ENTEC 6 35	2	350	LMNOPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 10 60	2	348.5	LMNOPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 8 60	2	346.5	LMNOPQRSTUVWXYZAAABAC
POC 4 35	2	346	LMNOPQRSTUVWXYZAAABAC
Urea 6 35	3	344.667	NOPQRSTUVWXYZAA
Urea 8 60	2	344	LMNOPQRSTUVWXYZAAABAC
Agromaster Tropical 0 10	2	343	LMNOPQRSTUVWXYZAAABAC
Agromaster Tropical 4 35	2	339	LMNOPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 8 60	2	335.5	MNOPQRSTUVWXYZAAABAC
Urea 0 60	2	330.5	NOPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 4 35	2	318	NOPQRSTUVWXYZAAABAC
Urea 2 60	2	317.5	NOPQRSTUVWXYZAAABAC
POC 8 60	2	317	NOPQRSTUVWXYZAAABAC
ENTEC 10 60	2	311.5	NOPQRSTUVWXYZAAABAC
Urea 10 60	2	310	NOPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 4 10	2	306.5	NOPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 6 35	2	306.5	NOPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 10 60	2	298	NOPQRSTUVWXYZAAABAC

POC 10 60	2	296	NOPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 6 10	2	286	NOPQRSTUVWXYZAAABAC
Urea 8 35	3	283	OPQRSTUVWXYZAAABAC
Agromaster Tropical 8 60	2	283	NOPQRSTUVWXYZAAABAC
ENTEC 8 35	2	275.5	NOPQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 6 35	2	265	OPQRSTUVWXYZAAABAC
ENTEC 10 35	2	257.5	OPQRSTUVWXYZAAABAC
Urea 10 35	3	256.333	PQRSTUVWXYZAAABAC
POC 6 35	2	255	OPQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 8 35	2	243	PQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 8 35	2	239.5	PQRSTUVWXYZAAABAC
2:1 ENTEC Agromater 10 35	2	231	PQRSTUVWXYZAAABAC
ENTEC 8 10	2	228.5	PQRSTUVWXYZAAABAC
1:2 ENTEC:Agromaster 10 35	2	226.5	PQRSTUVWXYZAAABAC
Urea 8 10	3	224	QR TUVWXYZAAABAC
Agromaster Tropical 6 35	2	212.5	QRSTUVWXYZAAABAC
Agromaster Tropical 10 60	2	210.5	QR TUVWXYZAAABAC
POC 4 10	2	205.5	QR TUVWXYZAAABAC
POC 8 35	2	198.5	QR TUVWXYZAAABAC
1:2 ENTEC:Agromaster 6 10	2	197.5	QR TUVWXYZAAABAC
2:1 ENTEC Agromater 8 10	2	195.5	R TUVWXYZAAABAC
Urea 10 10	3	188.667	T VWXYZAAABAC
ENTEC 10 10	2	181	TUVWXYZAAABAC
Agromaster Tropical 2 10	2	172.5	T VWXYZAAABAC
POC 10 35	2	155.5	VWXYZAAABAC
2:1 ENTEC Agromater 10 10	2	155	VWXYZAAABAC
Agromaster Tropical 8 35	2	147	WXYZAAABAC
1:2 ENTEC:Agromaster 8 10	2	144.5	WXYZAAABAC
1:2 ENTEC:Agromaster 10 10	2	130	XYZAAABAC
POC 6 10	2	126	YZAAABAC
Agromaster Tropical 10 35	2	124.5	YZAAABAC
Agromaster Tropical 4 10	2	105	ZAAABAC
POC 10 10	2	101	AAABAC
POC 8 10	2	100	AAABAC
Agromaster Tropical 8 10	2	97.5	ABAC
Agromaster Tropical 6 10	2	93.5	AC
Agromaster Tropical 10 10	2	92.5	AC

Means that do not share a letter are significantly different.

Vertisol

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Treatment	5	805530	161106	8.12	0.000
Zone	5	14540744	2908149	146.62	0.000
Time	2	2238515	1119257	56.43	0.000
Treatment*Zone	25	1538978	61559	3.10	0.000
Treatment*Time	10	1005738	100574	5.07	0.000
Zone*Time	10	805730	80573	4.06	0.000
Treatment*Zone*Time	50	1496867	29937	1.51	0.037
Error	117	2320694	19835		
Total	224	25108389			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
140.837	90.76%	82.30%	*

Tukey Pairwise Comparisons: Treatment Grouping Information Using the Tukey Method and 95% Confidence

Treatment	N	Mean	Grouping
Urea	48	636.296	A
POC	36	573.250	A B
Agromaster Tropical	34	510.583	B C
2:1 ENTEC Agromater	36	504.336	B C
ENTEC	36	482.444	B C
1:2 ENTEC:Agromaster	35	474.333	C

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Zone Grouping Information Using the Tukey Method and 95% Confidence

Zone	N	Mean	Grouping
0	36	1035.77	A
2	38	681.23	B
4	38	508.92	C
6	38	377.17	D
8	38	309.04	D E

10 37 269.12 E
Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Time

Grouping Information Using the Tukey Method and 95% Confidence

Time	N	Mean	Grouping
60	70	616.222	A
35	77	585.102	A
10	78	389.298	B

Means that do not share a letter are significantly different.

Tukey Pairwise Comparisons: Treatment*Zone*Time

Grouping Information Using the Tukey Method and 95% Confidence

Treatment*Zone*Time	N	Mean	Grouping
POC 0 35	2	1566.5	A
Agromaster Tropical 0 35	2	1468	AB
1:2 ENTEC:Agromaster 0 35	1	1452	ABC
Agromaster Tropical 0 60	1	1281	ABCDEF
POC 0 10	2	1260	ABCD
Urea 0 10	3	1186	ABCDE
2:1 ENTEC Agromater 0 10	2	1124.5	ABCDEFG
POC 0 60	2	1105	ABCDEFGH
Agromaster Tropical 2 60	2	1031.5	ABCDEFGHI
Urea 0 60	2	970.5	ABCDEFGHIJ
2:1 ENTEC Agromater 0 35	2	961	ABCDEFGHIJKL
Urea 2 35	3	913	BCDEFGHIJK
Urea 2 10	3	901.67	BCDEFGHIJKL
1:2 ENTEC:Agromaster 0 10	2	895	BCDEFGHIJKLMN
Urea 0 35	3	894.33	BCDEFGHIJKLM
POC 2 60	2	884	BCDEFGHIJKLMNO
Urea 4 60	2	871	BCDEFGHIJKLMNO
1:2 ENTEC:Agromaster 0 60	2	855.5	BCDEFGHIJKLMNOP
ENTEC 0 10	2	855	BCDEFGHIJKLMNOP
Urea 2 60	2	850.5	BCDEFGHIJKLMNOP
Agromaster Tropical 2 35	2	807.5	CDEFGHIJKLMNOPQ
2:1 ENTEC Agromater 0 60	2	800	CDEFGHIJKLMNOPQ
POC 2 35	2	787.5	CDEFGHIJKLMNOPQR
Urea 4 35	3	784	CDEFGHIJKLMNOP
2:1 ENTEC Agromater 2 10	2	781	CDEFGHIJKLMNOPQRS
ENTEC 0 35	2	736	CDEFGHIJKLMNOPQRST

Agromaster Tropical 4 60	2	710.5	CDEFGHIJKLMNOPQRSTU
2:1 ENTEC Agromater 2 60	2	673	DEFGHIJKLMNOPQRSTUV
ENTECH 2 10	2	661	DEFGHIJKLMNOPQRSTUV
Urea 6 60	2	657	DEFGHIJKLMNOPQRSTUV
Agromaster Tropical 0 10	2	626.5	EFGHIJKLMNOPQRSTUV
POC 4 60	2	617	EFGHIJKLMNOPQRSTUV
ENTECH 2 35	2	617	EFGHIJKLMNOPQRSTUV
POC 4 35	2	609.5	FGHIJKLMNOPQRSTUV
Agromaster Tropical 4 35	2	609	FGHIJKLMNOPQRSTUV
ENTECH 0 60	2	607	FGHIJKLMNOPQRSTUV
1:2 ENTECH:Agromaster 4 60	2	590.5	FGHIJKLMNOPQRSTUV
2:1 ENTECH Agromater 2 35	2	581.5	FGHIJKLMNOPQRSTUV
ENTECH 4 35	2	581	FGHIJKLMNOPQRSTUV
Urea 4 10	3	573	FGHIJKLMNOPQRSTUV
1:2 ENTECH:Agromaster 2 35	2	571	FGHIJKLMNOPQRSTUV
2:1 ENTECH Agromater 4 60	2	560.5	FGHIJKLMNOPQRSTUV
Urea 6 35	3	557.33	FGHIJKLMNOPQRSTUV
ENTECH 2 60	2	555.5	FGHIJKLMNOPQRSTUV
1:2 ENTECH:Agromaster 2 60	2	541.5	FGHIJKLMNOPQRSTUV
Urea 8 60	2	541	FGHIJKLMNOPQRSTUV
ENTECH 4 60	2	533	FGHIJKLMNOPQRSTUV
POC 6 60	2	516.5	FGHIJKLMNOPQRSTUV
ENTECH 4 10	2	503	GHIJKLMNOPQRSTUV
Urea 10 60	2	498	GHIJKLMNOPQRSTUV
POC 6 35	2	493.5	HIJKLMNOPQRSTUV
ENTECH 6 60	2	491.5	HIJKLMNOPQRSTUV
2:1 ENTECH Agromater 6 60	2	491	HIJKLMNOPQRSTUV
Agromaster Tropical 6 60	2	483.5	HIJKLMNOPQRSTUV
1:2 ENTECH:Agromaster 2 10	2	468.5	IJKLMNOPQRSTUV
1:2 ENTECH:Agromaster 6 60	2	456	IJKLMNOPQRSTUV
1:2 ENTECH:Agromaster 10 60	2	451	IJKLMNOPQRSTUV
POC 8 60	2	449.5	IJKLMNOPQRSTUV
ENTECH 8 60	2	448.5	IJKLMNOPQRSTUV
2:1 ENTECH Agromater 4 35	2	439.5	IJKLMNOPQRSTUV
2:1 ENTECH Agromater 8 60	2	438.5	IJKLMNOPQRSTUV
ENTECH 6 35	2	430.5	IJKLMNOPQRSTUV
POC 2 10	2	429	IJKLMNOPQRSTUV
1:2 ENTECH:Agromaster 8 60	2	427.5	IJKLMNOPQRSTUV
Urea 8 35	3	422.67	JJKLMNOPQRSTUV
Agromaster Tropical 6 35	2	399.5	JJKLMNOPQRSTUV
2:1 ENTECH Agromater 10 60	2	399	JJKLMNOPQRSTUV
2:1 ENTECH Agromater 4 10	2	392	JJKLMNOPQRSTUV
2:1 ENTECH Agromater 6 35	2	390.5	JJKLMNOPQRSTUV
POC 10 60	2	376.5	JJKLMNOPQRSTUV
1:2 ENTECH:Agromaster 4 35	2	375	JJKLMNOPQRSTUV

ENTEC 8 35	2	372	JKLMNOPQRSTUVWXYZ
Agromaster Tropical 8 60	2	368	JKLMNOPQRSTUVWXYZ
2:1 ENTEC Agromater 8 35	2	357.5	JKLMNOPQRSTUVWXYZ
POC 8 35	2	339	KLMNOPQRSTUVWXYZ
ENTEC 10 35	2	338	KLMNOPQRSTUVWXYZ
ENTEC 10 60	2	335.5	LMNOPQRSTUVWXYZ
1:2 ENTEC:Agromaster 6 35	2	321	MNOPQRSTUVWXYZ
Agromaster Tropical 10 60	1	318	IJKLMNOPQRSTUVWXYZ
Urea 10 35	3	295.33	PQRSTUVWXYZ
POC 10 35	2	291.5	NOPQRSTUVWXYZ
Agromaster Tropical 8 35	2	291.5	NOPQRSTUVWXYZ
ENTEC 6 10	2	276	NOPQRSTUVWXYZ
Agromaster Tropical 10 35	2	263	OPQRSTUVWXYZ
1:2 ENTEC:Agromaster 8 35	2	262	OPQRSTUVWXYZ
Urea 6 10	3	256.67	QRSTUVWXYZ
2:1 ENTEC Agromater 10 35	2	256	OPQRSTUVWXYZ
1:2 ENTEC:Agromaster 10 35	2	229.5	PQRSTUVWXYZ
Agromaster Tropical 2 10	2	207.5	QRSTUVWXYZ
ENTEC 8 10	2	199.5	QRSTUVWXYZ
1:2 ENTEC:Agromaster 4 10	2	178	QRSTUVWXYZ
2:1 ENTEC Agromater 6 10	2	169	RSTUV
1:2 ENTEC:Agromaster 6 10	2	158.5	RSTUV
1:2 ENTEC:Agromaster 8 10	2	156.5	STUV
POC 6 10	2	153.5	STUV
POC 4 10	2	153.5	STUV
1:2 ENTEC:Agromaster 10 10	2	149	TUV
Urea 10 10	3	147.33	UV
ENTEC 10 10	2	144	TUV
POC 10 10	2	143.5	TUV
POC 8 10	2	143	TUV
2:1 ENTEC Agromater 8 10	2	136.05	TUV
Urea 8 10	3	134	V
2:1 ENTEC Agromater 10 10	2	127.5	TUV
Agromaster Tropical 6 10	2	87.5	UV
Agromaster Tropical 10 10	2	81.5	UV
Agromaster Tropical 4 10	2	80.5	UV
Agromaster Tropical 8 10	2	76	V

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