

RÉPUBLIQUE FRANÇAISE  
NOUVELLE-CALÉDONIE  
ET DÉPENDANCES

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DIRECTION  
POUR LE DÉVELOPPEMENT  
DE L'ÉCONOMIE RURALE  
SERVICE DE LA RECHERCHE  
DE LA FORMATION  
ET DE LA DIFFUSION  
CENTRE DE RECHERCHE ET  
D'EXPÉRIMENTATION AGRONOMIQUES  
DE NESSADIOU

INSTITUT FRANÇAIS  
DE RECHERCHE SCIENTIFIQUE  
POUR LE DÉVELOPPEMENT  
EN COOPÉRATION  
(ORSTOM)

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# **INFLUENCE DE TROIS DOSES DE CHAUX DE TROIS MELANGES DIFFERENTS DE CROUTE CALCAIRE ET DE GYPSE SUR UNE CULTURE DE MAÏS SUR VERTISOL HYPERMAGNESIEN**

**QUATRIEME ETUDE EXPERIMENTALE  
CONDUITE EN SERRE SUR VERTISOL HYPERMAGNESIEN**

**(JUIN - JUILLET 84)**

**ANNEXE**

**RESULTATS DES OBSERVATIONS ET DES MESURES**

**NOVEMBRE 1984**

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Deuxième convention Territoire-ORSTOM  
pour l'étude des effets des amendements calcaïques  
sur les sols cultivables de Nouvelle-Calédonie

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et  
Dépendances

Direction pour le Développement  
de l'Economie Rurale  
Service de la Recherche, de la Formation  
et de la Diffusion  
Centre de Recherches et d'Etudes Agronomiques  
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Institut Français  
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(ORSTOM)  
Centre de Nouméa  
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DE TROIS MELANGES DIFFERENTS DE CROUTE CALCAIRE ET DE GYPSE  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPER-MAGNESIEN.

Quatrième étude expérimentale conduite en serre sur vertisol hyper-magnésien  
(Juin-Juillet 84)

A N N E X E

Résultats des observations et des mesures.

Novembre 84.

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Deuxième Convention Territoire-ORSTOM pour l'étude des effets des amendements calci-  
ques sur les sols cultivables de Nouvelle-Calédonie.

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1 - PARAMETRES OBSERVES.

## PARAMETRES OBSERVES.

PARAMETRES (sigles)	UNITES	DEFINITIONS	OBSERVATIONS - FORMULES.
H <sub>j</sub>	cm	Hauteur des plants de maïs au jème jour	
V <sub>j-j'</sub>	cm/j	Vitesse de croissance en hauteur entre le jème et le j'ème jour	$V_{j-j'} = (H_{j'} - H_j) / (j' - j)$
NTn	-	nème comptage du nombre de talles	
NF	-	Nombre de feuilles à la récolte	
CCAn	-	nème observation de la carence en calcium	
TNTF	%	Teneur en azote des parties aériennes	
TPTF	%	" phosphore "	
TKTF	%	" potassium "	
TCATF	%	" calcium "	
TMGTF	%	" magnésium "	
PMSTF	g	Poids de matière sèche des parties aériennes par pot	
QNTF	cg	Immobilisation en azote dans les parties aériennes	Pour un élément E :
QPTF	cg	" phosphore "	QETF = TETFxPMSTF/100
QKTF	cg	" potassium "	
QCATF	cg	" calcium "	
QMGTF	cg	" magnésium "	
pH	-	pH du sol à la récolte	
QCAE	g	Quantité de calcium en solution dans le percolat	
QME	g	" magnésium "	
QKE	g	" potassium "	
QNAE	g	" sodium "	

PARAMETRES OBSERVES.

PARAMETRES (sigles)	UNITES	DEFINITIONS	OBSERVATIONS - FORMULES.
PERUOG	ppm	Teneur du sol en phosphore assimilable TRUOG	
TCAS	meq %	" calcium échangeable	
TMGS	"	" magnésium "	
TKS	"	" potassium "	
TNAS	"	" sodium "	
SBE	"	" bases "	SBE = TCAS+TMGS+TKS+TNAS

2 - RECAPITULATIF DES ANALYSES DE VARIANCE  
(pour la signification des sigles cf l'annexe 1)

\* Pour ces paramètres, dont les variances résiduelles sont "hétérogènes", le C.V. est celui du premier niveau de l'analyse de variance.

PARAMETRES					F - FACTEURS CONTROLES.					
No	Sigles	Unités	Moyennes	CV %	Dose		Mélange		Dose X Mélange	
					F	seuil	F	seuil	F	seuil
1	H6	cm	3,919	10,3	2,356		0,158		0,312	
2	H8	cm	4,994	9,2	1,193		0,625		1,826	
3	H13	cm	7,970	9,5*	0,157		0,816		2,148	
4	H15	cm	9,632	12,4*	1,692		1,246		7,223	0,999
5	H18	cm	12,583	9,0	7,417	0,998	3,470	0,960	1,981	
6	H20	cm	15,266	8,2*	12,447	0,998	7,727	0,986	6,186	0,998
7	H22	cm	16,643	5,6	9,709	0,999	17,106	1,000	3,184	0,977
8	H25	cm	20,093	7,1	8,205	0,999	24,671	1,000	8,183	1,000
9	H27	cm	22,879	7,1	10,902	1,000	33,712	1,000	5,796	0,999
10	H28	cm	24,434	7,9	14,189	1,000	25,670	1,000	4,714	0,996
11	HT	cm	78,619	7,6	20,288	1,000	43,926	1,000	12,151	1,000
12	V6-8	cm/j	0,537	33,4	1,413		2,001		2,104	
13	V8-11	cm/j	0,854	9,3	0,266		0,217		0,972	
14	V11-13	cm/j	0,207	65,3*	2,328		1,474		1,668	
15	V13-15	cm/j	0,831	44,1*	5,549	0,976	0,985		5,044	0,994
16	V15-18	cm/j	0,984	19,0	7,583	0,918	3,205	0,950	2,442	0,938
17	V18-20	cm/j	1,341	25,7	3,855	0,971	4,311	0,980	3,314	0,981
18	V20-22	cm/j	0,688	41,5	1,075		1,406		0,393	
19	V22-25	cm/j	1,150	33,7	1,063		7,974	0,999	5,580	0,999
20	V25-27	cm/j	1,393	33,7	4,366	0,981	7,153	0,997	1,333	0,726
21	V27-28	cm/j	1,556	45,9	8,180	0,999	0,191		2,807	0,967
22	NT1	-	1,380	45,2	7,224	0,998	0,737		3,517	0,985
23	NT2	-	1,528	41,9	0,609	-	0,609	-	1,930	-
24	NF	-	6,120	11,0*	2,518	-	0,510	-	3,009	0,958
25	CCA1	-	0,519	125,0*	4,447	0,959	0,286	-	1,767	-
26	CCA2	-	0,694	91,7*	21,113	1,000	1,438	-	8,654	1,000
27	CCA3	-	1,389	89,4	57,102	1,000	0,450	-	1,062	-
28	CCA4	-	1,889	58,0	61,134	1,000	0,718	-	0,810	-
29	CCA5	-	1,472	39,7	188,548	1,000	0,244	-	4,640	0,996
30	CCA8	-	1,558	50,1	109,772	1,000	0,183	-	0,502	-
31	CCA9	-	1,546	50,2	95,689	1,000	0,477	-	0,500	-
32	TNTF	%	4,181	6,1*	13,039	0,998	7,413	0,989	7,158	0,999
33	TPTF	%	0,613	12,9	9,197	0,999	9,106	0,999	1,055	-
34	TKTF	%	6,824	5,1	3,838	-	6,101	0,982	10,669	1,000
35	TCATF	%	0,160	9,1*	207,219	1,000	1,167	-	11,217	1,000



\* Pour ces paramètres, dont les variances résiduelles sont "hétérogènes", le C.V. est celui du premier niveau de l'analyse de variance.

PARAMETRES					F - FACTEURS CONTROLES.					
No	Sigles	Unités	Moyennes	CV %	Dose		Mélange		Dose X Mélange	
					F	seuil	F	seuil	F	seuil
36	TMGTF	%	0,553	5,3*	22,364	1,000	69,909	1,000	52,321	1,000
37	PMSTF	g	14,536	17,08	10,210	0,999	17,735	1,000	8,808	1,000
38	QNTF	cg	60,546	15,9	12,909	1,000	13,151	1,000	8,917	1,000
39	QPTF	cg	8,872	27,4*	21,203	1,000	2,006	-	10,963	1,000
40	QKTF	cg	98,845	22,3*	7,341	0,989	7,473	0,990	16,360	1,000
41	QCATF	cg	2,296	25,0*	17,886	0,999	10,793	0,997	24,057	1,000
42	QMGTF	cg	7,952	20,5*	6,110	0,982	3,506	-	18,054	1,000
43	PH	-	6,860	2,6	268,2	1,000	79,9	1,000	1,233	-
44	QCAE	g	0,585	18,5	292,1	1,000	160,6	1,000	22,973	1,000
45	QMGE	g	2,109	9,3	199,5	1,000	166,2	1,000	7,520	1,000
46	QKE	g	0,489	22,6*	4,182	0,953	0,497	-	9,296	1,000
47	QNAE	g	2,900	6,2	17,148	1,000	39,890	1,000	2,336	-
48	PTRUOG	ppm	35,870	22,1	3,851	0,971	1,149	-	2,253	-
49	TCAS	meq %	12,919	4,4*	536,9	1,000	3,897	-	3,071	0,961
50	TMGS	"	39,933	4,8	7,470	0,998	0,567	-	2,380	-
51	TKS	"	0,829	24,8	5,217	0,990	0,159	-	1,122	-
52	TNAS	"	0,308	5,6	6,884	0,997	8,975	0,999	4,587	0,996
53	SBE	"	53,989	3,9	87,957	1,000	0,248	-	2,771	0,961

3 - ANALYSES DE VARIANCE.  
(pour la signification des sigles cf l'annexe 1).

INFLUENCE DE TROIS DOSÉS DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAÏS SUR VERTISOL HYPERMAGNÉSIE

10.

Analyse de variance

Date: 06/07/84

Parametre: H6

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	3.600	4.650	3.700	3.700	3.650	4.350
X 12k	3.900	4.200	4.100	3.800	4.200	3.950
X 13k	3.800	4.050	3.400	4.000	3.800	3.900
X 21k	2.800	4.050	4.150	3.850	3.800	4.200
X 22k	4.350	4.050	3.950	3.900	4.000	4.300
X 23k	3.950	3.950	4.200	3.900	3.600	3.900
X 31k	3.850	4.250	4.050	3.350	4.050	3.550
X 32k	4.050	3.950	4.400	4.200	3.950	3.650
X 33k	3.950	3.600	3.550	3.500	3.750	4.350

Moyennes et ecarte relatifs :

X...= 3.919

X1..= 3.931( 0.28) X2..= 3.939( 0.50) X3..= 3.859( -0.78)

X..1= 3.867( -1.35) X..2= 4.050( 3.33) X..3= 3.842( -1.98)

X..1= 3.806( -2.91) X..2= 4.083( 4.18) X..3= 3.944( 0.64)

X..4= 3.800( -3.05) X..5= 3.867( -1.35) X..6= 4.017( 2.48)

X11.= 3.942( 0.57) X12.= 4.025( 2.69) X13.= 3.525( -2.41)

X21.= 3.808( -2.83) X22.= 4.092( 4.39) X23.= 3.917( -0.07)

X31.= 3.850( -1.77) X32.= 4.033( 2.91) X33.= 3.753( -3.47)

Variances et coefficients de variations

Se1 = 0.146 Se2 = 0.243 Se3 = 0.132

cv1 = 9.751 cv2 = 12.370 cv3 = 9.263

SA = 0.026 SD = 0.466 SB = 0.241

Tests F :

FA= 0.177 (0.159) FD= 1.919 (0.804) FAD= 0.386 (0.183)

Test de BARTLETT :K12 = 1.338

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.133 cv = 10.304

F1A= 0.158 (0.145) F1D= 2.856 (0.932) F1AD= 0.312 (0.131)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCICIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

11.

Analyse de variance

Date: 13-7-84

Parametre: H8

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	4.600	5.350	5.100	4.450	4.450	5.750
X 12k	5.000	4.950	4.700	4.500	4.900	4.800
X 13k	5.400	4.850	5.000	5.000	4.950	5.150
X 21k	4.150	5.050	4.900	4.800	4.750	4.900
X 22k	5.350	4.900	5.300	5.600	5.150	5.100
X 23k	5.000	5.550	5.250	4.850	4.100	5.000
X 31k	5.050	5.100	5.100	5.000	5.050	4.800
X 32k	5.400	5.000	5.950	5.500	4.700	4.550
X 33k	5.300	4.650	5.250	4.550	5.000	5.100

Moyennes et ecartis relatifs :

X... = 4.994

X1.. = 4.939 (-1.09) X2.. = 4.983 (-0.20) X3.. = 5.058 (1.30)

X..1 = 4.908 (-1.71) X..2 = 5.075 (1.63) X..3 = 4.997 (0.07)

X..4 = 5.028 (0.69) X..5 = 5.044 (1.02) X..6 = 5.172 (3.58)

X..4 = 4.917 (-1.54) X..5 = 4.783 (-4.21) X..6 = 5.017 (0.46)

X11. = 4.950 (-0.97) X12. = 4.808 (-3.71) X13. = 5.058 (1.30)

X21. = 4.758 (-4.71) X22. = 5.233 (4.80) X23. = 4.958 (-0.70)

X31. = 5.017 (0.46) X32. = 5.183 (3.80) X33. = 4.975 (-0.37)

Variances et coefficients de variations

Se1 = 0.257 Se2 = 0.281 Se3 = 0.150

cv1 = 10.161 cv2 = 10.621 cv3 = 7.768

SA = 0.131 SD = 0.250 SB = 0.311

Tests F :

FA = 0.510 (0.380) FD = 0.890 (0.444) FAD = 2.548 (0.929)

Test de BARTLETT : K12 = 1.631

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.210 cv = 9.175

F1A = 0.625 (0.455) F1D = 1.193 (0.686) F1AD = 1.826 (0.858)

Analyse de variance

Date: 18-7-84

Parametre: H13

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	7.400	8.550	7.650	7.850	7.400	8.900
X 12k	7.800	8.200	7.400	7.450	7.650	7.600
X 13k	8.400	7.700	8.000	7.700	7.750	8.150
X 21k	6.600	8.500	7.800	7.900	7.700	9.000
X 22k	8.650	7.900	7.900	8.900	8.200	7.800
X 23k	7.850	8.450	8.000	7.550	6.850	7.650
X 31k	8.050	8.200	8.400	8.150	8.200	8.350
X 32k	8.200	7.600	9.250	8.550	7.450	7.100
X 33k	8.350	7.500	8.400	7.550	8.250	8.100

Moyennes et ecartis relatifs :

X... = 7.970

X1.. = 7.864 (-1.34)    X2.. = 7.956 (-0.19)    X3.. = 8.092 (1.52)

X..1 = 8.033 (0.79)    X..2 = 7.978 (0.09)    X..3 = 7.900 (-0.88)

X...1 = 7.922 (-0.60)    X...2 = 8.067 (1.21)    X...3 = 8.089 (1.49)

X...4 = 7.956 (-0.19)    X...5 = 7.717 (-3.18)    X...6 = 8.072 (1.28)

X11. = 7.958 (-0.15)    X12. = 7.683 (-3.60)    X13. = 7.950 (-0.26)

X21. = 7.917 (-0.67)    X22. = 8.225 (3.19)    X23. = 7.725 (-3.08)

X31. = 8.225 (3.19)    X32. = 8.025 (0.69)    X33. = 8.025 (0.69)

Variances et coefficients de variations

Se1 = 0.579    Se2 = 1.026    Se3 = 0.246

cv1 = 9.549    cv2 = 12.707    cv3 = 6.220

SA = 0.473    SD = 0.161    SB = 0.362

Tests F :

FA = 0.816 (0.473)    FD = 0.157 (0.144)    FAD = 2.148 (0.888)

Test de BARTLETT : K12 = 7.163

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

13.

Analyse de variance

Date: 20-7-84

Parametre: H15

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	8.950	10.700	8.750	9.550	9.000	10.350
X 12k	9.200	10.000	9.200	9.250	9.250	9.650
X 13k	9.100	9.800	9.150	8.800	8.450	9.800
X 21k	8.000	10.850	9.650	9.600	9.600	10.700
X 22k	11.150	10.100	10.150	10.650	9.950	9.450
X 23k	9.000	9.350	9.700	8.700	8.550	9.300
X 31k	10.500	10.250	10.200	9.500	10.000	10.550
X 32k	10.150	8.550	10.850	9.450	9.250	9.050
X 33k	10.250	8.800	10.650	8.900	9.750	10.100

Moyennes et ecartis relatifs :

X... = 9.632

X1.. = 9.386 (-2.56) X2.. = 9.692 ( 0.62) X3.. = 9.819 ( 1.94)

X..1 = 9.817 ( 1.91) X..2 = 9.739 ( 1.11) X..3 = 9.342 (-3.02)

X..1 = 9.589 (-0.45) X..2 = 9.822 ( 1.97) X..3 = 9.811 ( 1.86)

X..4 = 9.378 (-2.64) X..5 = 9.311 (-3.34) X..6 = 9.883 ( 2.61)

X11. = 9.550 (-0.86) X12. = 9.425 (-2.15) X13. = 9.183 (-4.66)

X21. = 9.733 ( 1.05) X22. = 10.242 ( 6.33) X23. = 9.100 (-5.53)

X31. = 10.167 ( 5.55) X32. = 9.550 (-0.86) X33. = 9.742 ( 1.13)

Variances et coefficients de variations

Se1 = 1.433 Se2 = 1.381 Se3 = 0.222

cv1 = 12.427 cv2 = 12.201 cv3 = 4.887

SA = 1.785 SD = 2.337 SB = 1.083

Tests F :

FA = 1.246 (0.671) FD = 1.692 (0.768) FAD = 7.223 (0.999)

Test de BARTLETT :  $K_{12} = 14.549$

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

14.

Analyse de variance

Date: 23-7-84

Parametres: H18

Unites: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	12.300	14.000	11.300	12.800	11.550	12.800
X 12k	11.800	13.000	12.450	12.800	12.800	13.000
X 13k	11.700	11.200	11.200	10.850	11.200	12.500
X 21k	10.650	14.000	13.400	12.400	13.100	14.450
X 22k	13.950	13.600	13.150	13.550	13.400	12.800
X 23k	12.250	12.200	12.750	11.350	11.450	12,300
X 31k	13.750	13.950	13.500	12.200	13.450	13.450
X 32k	13.050	10.700	13.550	12.050	12.350	12.500
X 33k	12.950	10.750	13.050	11.450	12.600	14.200

Moyennes et ecartis relatifs :

X... = 12.583

X1.. = 12.181 (-3.20)    X2.. = 12.819 ( 1.88)    X3.. = 12.750 ( 1.32)

X..1 = 12.947 ( 2.89)    X..2 = 12.806 ( 1.77)    X..3 = 11.997 (-4.66)

X..1 = 12.489 (-0.75)    X..2 = 12.600 ( 0.13)    X..3 = 12.706 ( 0.97)

X..4 = 12.161 (-3.36)    X..5 = 12.433 (-1.19)    X..6 = 13.111 ( 4.19)

X11. = 12.458 (-0.99)    X12. = 12.642 ( 0.46)    X13. = 11.442 (-9.07)

X21. = 13.000 ( 3.31)    X22. = 13.408 ( 6.56)    X23. = 12.050 (-4.24)

X31. = 13.383 ( 6.36)    X32. = 12.367 (-1.72)    X33. = 12.500 (-0.66)

Variances et coefficients de variations

Se1 = 1.876                    Se2 = 1.962                    Se3 = 0.631

cv1 = 10.885                    cv2 = 11.131                    cv3 = 6.312

SA = 4.424                    SD = 9.456                    SB = 1.812

Tests F :

FA = 2.358 (0.856)    FD = 4.820 (0.966)    FAD = 4.002 (0.985)

Test de BARTLETT : K12 = 5.684

on accepte l'hypothese de l'egalite des variances residuelles

Se = 1.275                    cv = 8.973

F1A = 3.470 (0.960)    F1D = 7.417 (0.998)    F1AD = 1.981 (0.885)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

15.

Analyse de variance

Date: 25-7-84

Parametre: H2O

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	15.300	15.850	14.350	14.600	14.500	16.150
X 12k	15.350	15.250	15.150	15.050	15.350	15.300
X 13k	12.950	13.600	13.800	13.900	12.300	15.000
X 21k	13.800	15.650	15.900	15.350	15.450	15.850
X 22k	16.350	15.950	16.050	16.500	16.400	15.550
X 23k	14.900	15.250	15.300	14.550	14.500	14.850
X 31k	16.400	15.900	15.850	14.600	16.100	15.850
X 32k	16.400	14.750	16.750	15.650	15.700	15.500
X 33k	16.050	14.150	16.050	14.500	16.100	16.150

Moyennes et ecartis relatifs :

X... = 15.266

X1.. = 14.653 (-4.02) X2.. = 15.453 ( 1.23) X3.. = 15.692 ( 2.79)

X..1 = 15.414 ( 0.97) X..2 = 15.722 ( 2.99) X..3 = 14.661 (-3.96)

X..4 = 15.278 ( 0.08) X..5 = 15.150 (-0.76) X..6 = 15.467 ( 1.32)

X..4 = 14.967 (-1.96) X..5 = 15.156 (-0.72) X..6 = 15.578 ( 2.04)

X11. = 15.125 (-0.92) X12. = 15.242 (-0.16) X13. = 13.592 (-10.97)

X21. = 15.333 ( 0.44) X22. = 16.133 ( 5.68) X23. = 14.892 (-2.45)

X31. = 15.783 ( 3.39) X32. = 15.792 ( 3.45) X33. = 15.500 ( 1.53)

Variances et coefficients de variations

Se1 = 1.584 Se2 = 0.862 Se3 = 0.366

cv1 = 8.245 cv2 = 6.081 cv3 = 3.965

SA = 10.658 SD = 10.726 SB = 0.910

Tests F :

FA = 6.727 (0.986) FD = 12.447 (0.998) FAD = 6.186 (0.998)

Test de BARTLETT :  $K_{i2} = 7.496$

l'hypothese de l'egalite des variances residuelles est rejetee



Analyse de variance

Date: 27-7-84

Parametre: H22

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	16.700	17.650	15.300	16.050	15.100	17.300
X 12k	16.600	16.600	16.100	16.050	16.800	16.850
X 13k	15.150	13.950	15.100	15.300	14.050	15.600
X 21k	14.900	16.800	17.450	16.700	17.200	17.450
X 22k	17.500	16.950	17.700	17.850	17.350	18.050
X 23k	16.700	16.950	16.150	16.150	16.200	16.500
X 31k	17.700	17.600	16.750	16.000	17.350	16.400
X 32k	17.800	16.300	18.650	17.300	16.500	16.950
X 33k	17.200	15.850	17.600	16.450	17.450	18.050

Moyennes et ecartes relatifs :

X...= 16.643

X1..= 15.903 (-4.45) X2..= 16.919 ( 1.66) X3..= 17.106 ( 2.78)

X..1= 16.689 ( 0.28) X..2= 17.106 ( 2.78) X..3= 16.133 (-3.06)

X..1= 16.694 ( 0.31) X..2= 16.517 (-0.76) X..3= 16.756 ( 0.68)

X..4= 16.428 (-1.29) X..5= 16.444 (-1.19) X..6= 17.017 ( 2.25)

X11.= 16.350 (-1.76) X12.= 16.500 (-0.86) X13.= 14.858 (-10.72)

X21.= 16.750 ( 0.65) X22.= 17.567 ( 5.55) X23.= 16.442 (-1.21)

X31.= 16.967 ( 1.95) X32.= 17.250 ( 3.65) X33.= 17.100 ( 2.75)

Variances et coefficients de variations

Se1 = 1.129 Se2 = 0.844 Se3 = 0.778

cv1 = 6.384 cv2 = 5.521 cv3 = 5.299

SA = 15.090 SD = 8.565 SB = 0.924

Tests F :

FA= 13.367 (0.998) FD= 10.146 (0.996) FAD= 3.611 (0.978)

Test de BARTLETT :Ki2 = 0.475

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.882 cv = 5.643

F1A= 17.106 (1.000) F1D= 9.709 (0.999) F1AD= 3.184 (0.977)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

17.

Analyse de variance

Date: 30-7-84

Parametre: H25

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	20.150	21.850	17.650	20.050	19.050	19.400
X 12k	21.000	20.600	19.700	18.400	20.050	20.950
X 13k	16.500	14.450	17.150	17.500	15.350	17.850
X 21k	18.350	22.650	20.200	18.350	20.550	21.800
X 22k	20.650	20.950	21.300	18.900	21.100	21.950
X 23k	19.600	20.400	20.000	20.550	20.400	21.000
X 31k	21.150	21.550	21.400	18.950	20.450	20.000
X 32k	22.600	21.350	21.100	21.850	19.400	21.100
X 33k	22.050	21.250	20.700	20.750	21.500	21.500

Moyennes et ecartis relatifs :

X... = 20.093

X1.. = 18.758 (-6.64) X2.. = 20.483 ( 1.94) X3.. = 21.036 ( 4.70)

X..1 = 20.197 ( 0.52) X..2 = 20.719 ( 3.12) X..3 = 19.361 (-3.64)

X..1 = 20.228 ( 0.67) X..2 = 20.561 ( 2.33) X..3 = 19.911 (-0.90)

X..4 = 19.478 (-3.06) X..5 = 19.761 (-1.65) X..6 = 20.617 ( 2.61)

X11. = 19.692 (-2.00) X12. = 20.117 ( 0.12) X13. = 16.467 (-18.05)

X21. = 20.317 ( 1.12) X22. = 20.808 ( 3.56) X23. = 20.325 ( 1.16)

X31. = 20.583 ( 2.44) X32. = 21.233 ( 5.68) X33. = 21.292 ( 5.97)

Variances et coefficients de variations

Se1 = 2.533 Se2 = 3.070 Se3 = 1.318

cv1 = 7.921 cv2 = 8.720 cv3 = 5.714

SA = 50.817 SD = 16.901 SB = 3.720

Tests F :

FA = 20.063 (1.000) FD = 5.505 (0.976) FAD = 12.787 (1.000)

Test de BARTLETT :  $K_{12} = 2.765$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 2.050 cv = 7.143

F1A = 24.671 (1.000) F1D = 8.205 (0.999) F1AD = 8.183 (1.000)

Analyse de variance

Date: 1-8-84

Parametre: H27

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	23.000	24.450	20.300	23.200	21.400	22.900
X 12k	21.800	21.850	22.100	21.050	21.600	24.150
X 13k	18.500	16.150	19.200	20.000	16.450	21.150
X 21k	21.650	25.200	22.950	21.900	23.800	25.000
X 22k	23.900	24.800	23.850	24.300	22.300	25.600
X 23k	22.000	23.650	23.350	24.050	24.150	22.100
X 31k	24.900	24.550	24.700	23.300	23.250	23.500
X 32k	26.000	23.850	24.700	24.850	21.150	24.450
X 33k	24.500	22.700	23.700	23.450	22.850	25.250

Moyennes et ecartis relatifs :

X... = 22.879

X1.. = 21.069 (-7.91)    X2.. = 23.586 ( 3.09)    X3.. = 23.991 ( 4.82)

X..1 = 23.331 ( 1.97)    X..2 = 23.461 ( 2.55)    X..3 = 21.844 (-4.52)

X...1 = 22.917 ( 0.17)    X...2 = 23.022 ( 0.63)    X...3 = 22.761 (-0.51)

X...4 = 22.900 ( 0.09)    X...5 = 21.883 (-4.35)    X...6 = 23.789 ( 3.98)

X11. = 22.542 (-1.47)    X12. = 22.092 (-3.44)    X13. = 18.575 (-19.81)

X21. = 23.417 ( 2.35)    X22. = 24.125 ( 5.45)    X23. = 23.217 ( 1.48)

X31. = 24.033 ( 5.05)    X32. = 24.167 ( 5.63)    X33. = 23.742 ( 3.77)

Variances et coefficients de variations

Se1 = 3.615    Se2 = 3.383    Se3 = 1.827

cv1 = 8.311    cv2 = 8.039    cv3 = 5.909

SA = 69.783    SD = 29.035    SB = 6.680

Tests F :

FA = 24.833 (1.000)    FD = 8.584 (0.993)    FAD = 8.447 (0.999)

Test de BARTLETT : K12 = 2.009

on accepte l'hypothese de l'egalite des variances residuelles

Se = 2.663    cv = 7.133

F1A = 33.712 (1.000)    F1D = 10.902 (1.000)    F1AD = 5.796 (0.999)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
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19.

Analyse de variance

Date: 2-8-84

Parametre: H28

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	24.150	26.700	21.500	25.000	22.650	24.250
X 12k	23.250	24.050	23.200	24.300	23.750	25.850
X 13k	19.500	16.800	19.850	20.700	17.900	22.800
X 21k	22.900	27.050	25.750	23.000	26.050	28.150
X 22k	26.000	26.950	24.950	25.550	23.500	26.900
X 23k	22.950	25.150	24.300	24.900	25.250	23.550
X 31k	26.650	27.150	26.400	25.000	25.550	25.650
X 32k	27.200	24.650	26.700	26.500	22.150	25.800
X 33k	26.200	23.900	25.850	24.100	23.700	27.250

Moyennes et ecartis relatifs :

X... = 24.434

X1.. = 22.567 (-7.64)    X2.. = 25.158 ( 2.96)    X3.. = 25.578 ( 4.68)

X..1 = 25.197 ( 3.12)    X..2 = 25.069 ( 2.60)    X..3 = 23.036 (-5.72)

X..4 = 24.311 (-0.50)    X..5 = 24.711 ( 1.13)    X..6 = 24.278 (-0.64)

X..4 = 24.339 (-0.39)    X..5 = 23.389 (-4.28)    X..6 = 25.578 ( 4.68)

X11. = 24.042 (-1.61)    X12. = 24.067 (-1.50)    X13. = 19.592 (-19.82)

X21. = 25.483 ( 4.29)    X22. = 25.642 ( 4.94)    X23. = 24.350 (-0.34)

X31. = 26.067 ( 6.68)    X32. = 25.500 ( 4.36)    X33. = 25.167 ( 3.00)

Variances et coefficients de variations

Se1 = 5.203    Se2 = 4.481    Se3 = 2.619

cv1 = 9.336    cv2 = 9.663    cv3 = 6.623

SA = 95.757    SD = 52.927    SB = 9.093

Tests F :

FA = 18.403 (0.999)    FD = 11.813 (0.997)    FAD = 6.716 (0.998)

Test de BARTLETT : K12 = 1.847

on accepte l'hypothese de l'egalite des variances residuelles

Se = 3.730    cv = 7.904

F1A = 25.670 (1.000)    F1D = 14.189 (1.000)    F1AD = 4.714 (0.996)

INFLUENCE DE TROIS DOSES DE CAD DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

20.

Analyse de variance

Date: 2-8-84

Parametre: HT

Unite: cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	75.250	79.650	65.850	72.000	72.550	69.900
X 12k	80.400	76.450	76.450	73.400	79.250	79.600
X 13k	64.100	55.500	65.450	66.100	58.100	68.550
X 21k	64.450	83.000	76.850	69.500	73.550	76.300
X 22k	80.850	87.900	87.150	83.850	81.050	90.750
X 23k	79.200	85.600	84.000	88.450	88.950	84.750
X 31k	79.800	77.200	78.650	73.150	76.650	72.750
X 32k	94.300	85.500	82.300	93.400	82.150	84.450
X 33k	89.600	94.550	82.750	80.350	86.050	87.100

Moyennes et ecartis relatifs :

X... = 78.619

X1.. = 71.031 (-9.65)    X2.. = 81.453 ( 3.61)    X3.. = 83.372 ( 6.05)

X..1 = 74.281 (-5.52)    X..2 = 83.289 ( 5.94)    X..3 = 78.286 (-0.42)

X...1 = 78.661 ( 0.05)    X...2 = 80.594 ( 2.51)    X...3 = 77.717 (-1.15)

X...4 = 77.800 (-1.04)    X...5 = 77.589 (-1.31)    X...6 = 79.350 ( 0.93)

X11. = 72.533 (-7.74)    X12. = 77.592 (-1.31)    X13. = 62.967 (-19.91)

X21. = 73.942 (-5.95)    X22. = 85.258 ( 8.45)    X23. = 85.158 ( 8.32)

X31. = 76.367 (-2.86)    X32. = 87.017 ( 10.68)    X33. = 86.733 ( 10.32)

Variances et coefficients de variations

Se1 = 59.327    Se2 = 24.645    Se3 = 30.305

cv1 = 9.797    cv2 = 6.314    cv3 = 7.002

SA = 1587.742    SD = 733.334    SB = 25.145

Tests F :

FA = 26.762 (1.000)    FD = 29.756 (1.000)    FAD = 14.492 (1.000)

Test de BARTLETT :  $Ki2 = 2.313$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 36.145    cv = 7.647

F1A = 43.926 (1.000)    F1D = 20.288 (1.000)    F1AD = 12.151 (1.000)

Analyse de variance

Date: 13-7-84

Parametre: V6-8

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.500	0.350	0.700	0.375	0.400	0.700
X 12k	0.550	0.375	0.300	0.350	0.350	0.425
X 13k	0.800	0.400	0.800	0.500	0.575	0.625
X 21k	0.675	0.500	0.375	0.475	0.475	0.350
X 22k	0.500	0.425	0.675	0.850	0.575	0.400
X 23k	0.525	0.800	0.525	0.475	0.250	0.550
X 31k	0.600	0.425	0.525	0.825	0.500	0.625
X 32k	0.675	0.525	0.775	0.650	0.375	0.450
X 33k	0.675	0.525	0.850	0.525	0.625	0.375

Moyennes et ecartis relatifs :

X... = 0.537

X1.. = 0.504 (-6.12) X2.. = 0.522 (-2.76) X3.. = 0.585 ( 8.88)

X..1 = 0.521 (-3.02) X..2 = 0.513 (-4.57) X..3 = 0.578 ( 7.59)

X..1 = 0.611 (13.79) X..2 = 0.481 (-10.52) X..3 = 0.614 (14.31)

X..4 = 0.558 ( 3.97) X..5 = 0.458 (-14.66) X..6 = 0.500 (-6.90)

X11. = 0.504 (-6.12) X12. = 0.392 (-27.07) X13. = 0.617 (14.83)

X21. = 0.475 (-11.55) X22. = 0.571 ( 6.29) X23. = 0.521 (-3.02)

X31. = 0.583 ( 8.62) X32. = 0.575 ( 7.07) X33. = 0.596 (10.95)

Variances et coefficients de variations

Se1 = 0.043 Se2 = 0.024 Se3 = 0.031

cv1 = 38.486 cv2 = 28.944 cv3 = 32.715

SA = 0.064 SD = 0.045 SB = 0.081

Tests F :

FA = 1.506 (0.732) FD = 1.881 (0.798) FAD = 2.192 (0.894)

Test de BARTLETT :  $K_{12} = 0.803$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.032 cv = 33.390

F1A = 2.001 (0.853) F1D = 1.413 (0.746) F1AD = 2.104 (0.903)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
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22.

Analyse de variance

Date: 16-7-84

Parametre: VB-11

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.917	0.917	0.767	0.817	0.900	0.900
X 12k	0.883	0.967	0.800	0.817	0.833	0.833
X 13k	0.850	0.883	0.850	0.800	0.800	0.900
X 21k	0.700	0.933	0.817	0.900	0.833	0.933
X 22k	0.967	0.817	0.767	0.883	0.917	0.850
X 23k	0.800	0.783	0.817	0.850	0.850	0.833
X 31k	0.883	0.883	0.850	0.783	0.917	0.867
X 32k	0.750	0.767	0.967	0.900	0.833	0.783
X 33k	0.867	0.883	0.833	0.850	0.933	0.900

Moyennes et écarts relatifs :

X... = 0.854

X1.. = 0.857( 0.36) X2.. = 0.847( -0.83) X3.. = 0.858( 0.47)

X.1. = 0.862( 0.90) X.2. = 0.852( -0.29) X.3. = 0.849( -0.61)

X..1 = 0.846( -0.94) X..2 = 0.870( 1.88) X..3 = 0.830( -2.89)

X..4 = 0.844( -1.16) X..5 = 0.869( 1.66) X..6 = 0.867( 1.45)

X11. = 0.869( 1.77) X12. = 0.856( 0.14) X13. = 0.847( -0.83)

X21. = 0.853( -0.18) X22. = 0.867( 1.45) X23. = 0.822( -3.76)

X31. = 0.864( 1.12) X32. = 0.833( -2.46) X33. = 0.878( 2.75)

Variances et coefficients de variations

Se1 = 0.008 Se2 = 0.004 Se3 = 0.006

cv1 = 10.708 cv2 = 7.512 cv3 = 9.202

SA = 0.001 SD = 0.002 SB = 0.005

Tests F :

FA = 0.164 (0.148) FD = 0.376 (0.300) FAD = 0.991 (0.437)

Test de BARTLETT : K12 = 0.949

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.006 cv = 9.287

F1A = 0.217 (0.192) F1D = 0.266 (0.229) F1AD = 0.972 (0.435)

Analyse de variance

Date: 18-7-84

Parametre: V11-13

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.025	0.225	0.125	0.475	0.125	0.225
X 12k	0.075	0.175	0.150	0.250	0.125	0.150
X 13k	0.225	0.100	0.225	0.150	0.200	0.150
X 21k	0.175	0.325	0.225	0.200	0.225	0.650
X 22k	0.200	0.275	0.150	0.325	0.150	0.075
X 23k	0.225	0.275	0.150	0.075	0.100	0.075
X 31k	0.175	0.225	0.375	0.400	0.200	0.475
X 32k	0.275	0.150	0.200	0.175	0.125	0.100
X 33k	0.225	0.100	0.325	0.225	0.225	0.150

Moyennes et ecartis relatifs :

X... = 0.207

X1.. = 0.176(-14.77) X2.. = 0.215( 4.03) X3.. = 0.229( 10.74)

X..1 = 0.269( 30.20) X..2 = 0.174(-16.11) X..3 = 0.178(-14.09)

X...1 = 0.178(-14.09) X...2 = 0.206( -0.67) X...3 = 0.214( 3.36)

X...4 = 0.253( 22.15) X...5 = 0.164(-20.81) X...6 = 0.228( 10.07)

X11. = 0.200( -3.36) X12. = 0.154(-25.50) X13. = 0.175(-15.44)

X21. = 0.300( 44.97) X22. = 0.196( -5.37) X23. = 0.150(-27.52)

X31. = 0.308( 48.99) X32. = 0.171(-17.45) X33. = 0.208( 0.67)

Variances et coefficients de variations

Se1 = 0.018 Se2 = 0.045 Se3 = 0.010

cv1 = 65.329 cv2 = 102.933 cv3 = 47.487

SA = 0.027 SD = 0.106 SB = 0.019

Tests F :

FA = 1.474 (0.726) FD = 2.328 (0.853) FAD = 1.668 (0.804)

Test de BARTLETT :  $K_{12} = 8.410$

l'hypothese de l'egalite des variances residuelles est rejetee



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Analyse de variance

Date: 20-7-84

Parametre: V13-15

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.775	1.075	0.550	0.850	0.800	0.725
X 12k	0.700	0.900	0.900	0.900	0.800	1.025
X 13k	0.350	1.050	0.575	0.550	0.350	0.825
X 21k	0.700	1.175	0.925	0.850	0.950	0.850
X 22k	1.250	1.100	1.125	0.875	0.875	0.825
X 23k	0.575	0.450	0.850	0.575	0.850	0.825
X 31k	1.225	1.025	0.900	0.675	0.900	1.100
X 32k	0.975	0.475	0.800	0.450	0.900	0.975
X 33k	0.950	0.650	1.125	0.675	0.750	1.000

Moyennes et ecartis relatifs :

X... = 0.831

X1.. = 0.761 (-8.41)    X2.. = 0.868 ( 4.46)    X3.. = 0.864 ( 3.96)

X..1 = 0.892 ( 7.30)    X..2 = 0.881 ( 5.96)    X..3 = 0.721 (-13.26)

X..1 = 0.833 ( 0.28)    X..2 = 0.878 ( 5.63)    X..3 = 0.861 ( 3.62)

X..4 = 0.711 (-14.43)    X..5 = 0.797 (-4.07)    X..6 = 0.906 ( 8.97)

X11. = 0.796 (-4.23)    X12. = 0.871 ( 4.79)    X13. = 0.617 (-25.79)

X21. = 0.908 ( 9.30)    X22. = 1.008 (21.34)    X23. = 0.688 (-17.27)

X31. = 0.971 (16.82)    X32. = 0.763 (-8.25)    X33. = 0.858 ( 3.29)

Variances et coefficients de variations

Se1 = 0.134    Se2 = 0.059    Se3 = 0.033

cv1 = 44.058    cv2 = 29.297    cv3 = 21.751

SA = 0.132    SD = 0.329    SB = 0.087

Tests F :

FA = 0.985 (0.409)    FD = 5.549 (0.976)    FAD = 5.044 (0.994)

Test de BARTLETT :  $K_{12} = 6.974$

l'hypothese de l'egalite des variances residuelles est rejetee

Analyse de variance

Date: 23-7-84

Parametre: V15-18

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.117	1.100	0.950	1.083	0.850	0.817
X 12k	0.867	1.000	1.083	1.183	1.183	1.117
X 13k	0.867	0.467	0.683	0.683	0.917	0.900
X 21k	0.883	1.050	1.250	0.933	1.167	1.250
X 22k	0.933	1.167	1.000	0.967	1.150	1.117
X 23k	1.083	0.950	1.017	0.883	0.967	1.000
X 31k	1.083	1.233	1.100	0.900	1.150	0.967
X 32k	0.967	0.717	0.900	0.867	1.033	1.150
X 33k	0.900	0.650	0.800	0.850	0.950	1.367

Noyennes et ecartis relatifs :

X... = 0.984

X1.. = 0.931 (-5.30)    X2.. = 1.043 ( 5.99)    X3.. = 0.977 (-0.69)

X..1 = 1.044 ( 6.09)    X..2 = 1.022 ( 3.90)    X..3 = 0.885 (-10.01)

X..4 = 0.967 (-1.73)    X..5 = 0.926 (-5.87)    X..6 = 0.965 (-1.91)

X..4 = 0.928 (-5.68)    X..5 = 1.041 ( 5.80)    X..6 = 1.076 ( 9.38)

X11. = 0.969 (-1.44)    X12. = 1.072 ( 9.01)    X13. = 0.753 (-23.47)

X21. = 1.089 (10.70)    X22. = 1.056 ( 7.31)    X23. = 0.983 (-0.03)

X31. = 1.072 ( 9.01)    X32. = 0.939 (-4.55)    X33. = 0.919 (-6.53)

Variances et coefficients de variations

Se1 = 0.031    Se2 = 0.054    Se3 = 0.027

cv1 = 18.023    cv2 = 23.656    cv3 = 16.804

SA = 0.112    SD = 0.266    SB = 0.068

Tests F :

FA = 3.575 (0.933)    FD = 4.909 (0.968)    FAD = 3.133 (0.963)

Test de BARTLETT : K12 = 1.666

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.035    cv = 19.034

F1A = 3.205 (0.950)    F1D = 7.583 (0.998)    F1AD = 2.442 (0.938)

Analyse de variance

Date: 25-7-84

Parametre: V18-20

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.500	0.925	1.525	0.900	1.475	1.675
X 12k	1.775	1.125	1.350	1.125	1.275	1.150
X 13k	0.625	1.200	1.300	1.525	0.550	1.250
X 21k	1.575	0.825	1.250	1.475	1.175	0.700
X 22k	1.200	1.175	1.450	1.475	1.500	1.375
X 23k	1.325	1.525	1.275	1.600	1.525	1.275
X 31k	1.325	0.975	1.175	1.200	1.325	1.200
X 32k	1.675	2.025	1.600	1.800	1.675	1.500
X 33k	1.550	1.700	1.500	1.525	1.750	0.975

Moyennes et ecartis relatifs :

X... = 1.341

X1.. = 1.236 (-7.84)    X2.. = 1.317 (-1.83)    X3.. = 1.471 ( 9.67)

X..1 = 1.233 (-8.04)    X..2 = 1.458 ( 8.73)    X..3 = 1.332 (-0.69)

X...1 = 1.394 ( 3.97)    X...2 = 1.275 (-4.94)    X...3 = 1.381 ( 2.93)

X...4 = 1.403 ( 4.59)    X...5 = 1.361 ( 1.48)    X...6 = 1.233 (-8.04)

X11. = 1.333 (-0.59)    X12. = 1.300 (-3.07)    X13. = 1.075 (-19.85)

X21. = 1.167 (-13.01)    X22. = 1.362 ( 1.59)    X23. = 1.421 ( 5.94)

X31. = 1.200 (-10.53)    X32. = 1.712 (27.68)    X33. = 1.500 (11.84)

Variances et coefficients de variations

Se1 = 0.127    Se2 = 0.153    Se3 = 0.098

cv1 = 26.565    cv2 = 29.151    cv3 = 23.301

SA = 0.512    SD = 0.458    SB = 0.089

Tests F :

FA = 4.034 (0.949)    FD = 2.996 (0.905)    FAD = 4.031 (0.985)

Test de BARTLETT :  $K_{12} = 0.702$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.119    cv = 25.697

F1A = 4.311 (0.980)    F1D = 3.355 (0.971)    F1AD = 3.314 (0.981)

Analyse de variance

Date: 27-7-84

Parametre: V20-22

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.700	0.900	0.475	0.725	0.300	0.575
X 12k	0.625	0.675	0.475	0.500	0.725	0.775
X 13k	1.100	0.175	0.650	0.700	0.875	0.300
X 21k	0.550	0.575	0.775	0.675	0.875	0.800
X 22k	0.575	0.500	0.825	0.675	0.475	1.250
X 23k	0.900	0.850	0.425	0.800	0.850	0.825
X 31k	0.650	0.850	0.450	0.700	0.625	0.275
X 32k	0.700	0.775	0.950	0.825	0.400	0.725
X 33k	0.575	0.850	0.775	0.975	0.675	0.950

Moyennes et ecartis relatifs :

X... = 0.688

X1.. = 0.625 (-9.21)    X2.. = 0.733 ( 6.52)    X3.. = 0.707 ( 2.69)

X.1. = 0.638 (-7.40)    X.2. = 0.692 ( 0.47)    X.3. = 0.736 ( 6.93)

X..1 = 0.708 ( 2.89)    X..2 = 0.683 (-0.74)    X..3 = 0.644 (-6.39)

X..4 = 0.731 ( 6.12)    X..5 = 0.644 (-6.39)    X..6 = 0.719 ( 4.51)

X11. = 0.613 (-11.03)    X12. = 0.629 (-8.61)    X13. = 0.633 (-8.00)

X21. = 0.708 ( 2.89)    X22. = 0.717 ( 4.10)    X23. = 0.775 (12.58)

X31. = 0.592 (-14.06)    X32. = 0.729 ( 5.92)    X33. = 0.800 (16.21)

Variances et coefficients de variations

Se1 = 0.091    Se2 = 0.094    Se3 = 0.071

cv1 = 43.891    cv2 = 44.469    cv3 = 38.673

SA = 0.115    SD = 0.088    SB = 0.025

Tests F :

FA = 1.258 (0.674)    FD = 0.937 (0.426)    FAD = 0.452 (0.229)

Test de BARTLETT : K12 = 0.342

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.082    cv = 41.518

F1A = 1.406 (0.744)    F1D = 1.075 (0.648)    F1AD = 0.393 (0.186)

Analyse de variance

Date: 30-7-84

Parametre: V22-25

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.150	1.400	0.783	1.333	1.317	0.700
X 12k	1.467	1.333	1.200	0.783	1.083	1.367
X 13k	0.450	0.167	0.683	0.733	0.433	0.750
X 21k	1.150	1.950	0.917	0.550	1.117	1.450
X 22k	1.050	1.333	1.200	0.350	1.250	1.300
X 23k	0.967	1.150	1.283	1.467	1.400	1.500
X 31k	1.150	1.317	1.550	0.983	1.033	1.200
X 32k	1.600	1.683	0.817	1.517	0.967	1.383
X 33k	1.617	1.800	1.033	1.433	1.350	1.150

Moyennes et ecartis relatifs :

X...= 1.150

X1..= 0.952(-17.23) X2..= 1.188( 3.30) X3..= 1.310( 13.93)

X.1.= 1.169( 1.69) X.2.= 1.205( 4.75) X.3.= 1.076( -6.44)

X..1= 1.178( 2.42) X..2= 1.348( 17.23) X..3= 1.052( -8.53)

X..4= 1.017(-11.59) X..5= 1.106( -3.86) X..6= 1.200( 4.35)

X11.= 1.114( -3.14) X12.= 1.206( 4.83) X13.= 0.536(-53.38)

X21.= 1.189( 3.38) X22.= 1.081( -6.04) X23.= 1.294( 12.56)

X31.= 1.206( 4.83) X32.= 1.328( 15.46) X33.= 1.397( 21.50)

Variances et coefficients de variations

Se1 = 0.175 Se2 = 0.158 Se3 = 0.133

cv1 = 36.423 cv2 = 34.615 cv3 = 31.671

SA = 1.195 SD = 0.159 SB = 0.259

Tests F :

FA= 6.808 (0.986) FD= 1.005 (0.598) FAD= 6.301 (0.998)

Test de BARTLETT :K12 = 0.277

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.150 cv = 33.656

F1A= 7.974 (0.999) F1D= 1.063 (0.644) F1AD= 5.580 (0.999)

Analyse de variance

Date: 1-8-84

Parametre: V25-27

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.425	1.300	1.325	1.575	1.175	1.750
X 12k	0.400	0.625	1.200	1.325	0.775	1.600
X 13k	1.000	0.850	1.025	1.250	0.550	1.650
X 21k	1.650	1.275	1.375	1.775	1.625	1.600
X 22k	1.625	1.925	1.275	2.700	0.600	1.825
X 23k	1.200	1.625	1.675	1.750	1.875	0.550
X 31k	1.875	1.500	1.650	2.175	1.400	1.750
X 32k	1.700	1.250	1.800	1.500	0.875	1.675
X 33k	1.225	0.725	1.500	1.350	0.675	1.875

Moyennes et ecartis relatifs :

X...= 1.393

X1..= 1.156(-17.05) X2..= 1.551( 11.37) X3..= 1.472( 5.68)

X..1= 1.567( 12.46) X..2= 1.371( -1.60) X..3= 1.242(-10.87)

X..1= 1.344( -3.49) X..2= 1.231(-11.67) X..3= 1.425( 2.29)

X..4= 1.711( 22.83) X..5= 1.061(-23.83) X..6= 1.586( 13.86)

X11.= 1.425( 2.29) X12.= 0.988(-29.11) X13.= 1.054(-24.33)

X21.= 1.550( 11.27) X22.= 1.658( 19.04) X23.= 1.446( 3.79)

X31.= 1.725( 23.83) X32.= 1.467( 5.28) X33.= 1.225(-12.06)

Variances et coefficients de variations

Se1 = 0.344 Se2 = 0.157 Se3 = 0.191

cv1 = 42.093 cv2 = 28.460 cv3 = 31.381

SA = 1.579 SD = 0.964 SB = 1.002

Tests F :

FA= 4.593 (0.962) FD= 5.133 (0.982) FAD= 1.540 (0.772)

Test de BARTLETT :K12 = 1.792

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.221 cv = 33.732

F1A= 7.153 (0.997) F1D= 4.366 (0.981) F1AD= 1.333 (0.726)

Analyse de variance

Date: 2-8-84

Parametre: V27-28

Unite: cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.150	2.250	1.200	1.800	1.250	1.350
X 12k	1.450	2.200	1.100	3.250	2.150	1.700
X 13k	1.000	0.650	0.650	0.700	1.450	1.650
X 21k	1.250	1.850	2.800	1.100	2.250	3.150
X 22k	2.100	2.150	1.100	1.250	1.200	1.300
X 23k	0.950	1.500	0.950	0.850	1.100	1.450
X 31k	1.750	2.600	1.700	1.700	2.300	2.150
X 32k	1.200	0.800	2.000	1.650	1.000	1.350
X 33k	1.700	1.200	2.150	0.650	0.850	2.000

Moyennes et ecartis relatifs :

X... = 1.556

X1.. = 1.497 (-3.75)    X2.. = 1.572 ( 1.07)    X3.. = 1.597 ( 2.68)

X..1 = 1.867 ( 20.00)    X..2 = 1.608 ( 3.39)    X..3 = 1.192 (-23.39)

X..1 = 1.394 (-10.36)    X..2 = 1.689 ( 8.57)    X..3 = 1.517 ( -2.50)

X..4 = 1.439 ( -7.50)    X..5 = 1.506 ( -3.21)    X..6 = 1.789 ( 15.00)

X11. = 1.500 ( -3.57)    X12. = 1.975 ( 26.96)    X13. = 1.017 (-34.64)

X21. = 2.067 ( 32.86)    X22. = 1.517 ( -2.50)    X23. = 1.133 (-27.14)

X31. = 2.033 ( 30.71)    X32. = 1.333 (-14.29)    X33. = 1.425 ( -8.39)

Variances et coefficients de variations

Se1 = 0.628    Se2 = 0.625    Se3 = 0.394

cv1 = 50.946    cv2 = 50.838    cv3 = 40.362

SA = 0.097    SD = 4.176    SB = 0.417

Tests F :

FA = 0.155 (0.142)    FD = 6.677 (0.786)    FA0 = 3.751 (0.981)

Test de BARTLETT :  $\chi^2 = 1.027$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.510    cv = 45.930

F1A = 0.191 (0.172)    F10 = 8.180 (0.999)    F1A0 = 2.897 (0.967)

INFLUENCE DE TROIS DOSES DE CAD DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

31

Date: 30-7-84

Parametre: NT1

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	2.000	1.000	1.000	2.000	1.500	1.500
X 12k	2.000	1.000	2.000	2.000	2.000	2.000
X 13k	0.500	2.000	0.500	1.000	0.500	1.500
X 21k	1.500	1.500	2.000	1.500	2.000	2.000
X 22k	2.000	2.000	1.000	1.000	1.500	1.500
X 23k	0.500	1.000	1.000	0.500	2.000	1.000
X 31k	2.000	2.000	1.500	1.000	2.000	1.500
X 32k	1.000	0.500	1.000	0.500	0.500	2.000
X 33k	1.500	0.000	1.500	1.000	1.500	2.000

Moyennes et ecartis relatifs :

X...=	1.380					
X1..=	1.444 ( 4.70)	X2..=	1.417 ( 2.68)	X3..=	1.278 (-7.38)	
X..1=	1.639 ( 18.79)	X..2=	1.417 ( 2.68)	X..3=	1.083 (-21.48)	
X..4=	1.444 ( 4.70)	X..5=	1.222 (-11.41)	X..6=	1.278 (-7.38)	
X..4=	1.167 (-15.44)	X..5=	1.500 ( 8.72)	X..6=	1.667 ( 20.81)	
X11.=	1.500 ( 8.72)	X12.=	1.833 ( 32.89)	X13.=	1.000 (-27.52)	
X21.=	1.750 ( 26.85)	X22.=	1.500 ( 8.72)	X23.=	1.000 (-27.52)	
X31.=	1.667 ( 20.81)	X32.=	0.917 (-33.56)	X33.=	1.250 (-9.40)	

Variances et coefficients de variations

Se1 =	0.476	Se2 =	0.204	Se3 =	0.440
cv1 =	50.004	cv2 =	32.714	cv3 =	48.053
SA =	0.287	SD =	2.815	SB =	0.654

Tests F :

FA=	0.603 (0.430)	FD=	13.818 (0.998)	FAD=	3.118 (0.962)
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Test de BARTLETT :K12 = 2.004

on accepte l'hypothese de l'egalite des variances residuelles

Se =	0.390	cv =	45.246
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F1A=	0.737 (0.489)	F1D=	7.224 (0.998)	F1AD=	3.517 (0.985)
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INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 1-8-84

Parametre: NT2

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	2.000	0.500	0.000	2.000	2.000	2.000
X 12k	2.000	1.000	2.000	2.000	2.000	2.000
X 13k	0.500	2.000	1.000	1.000	1.500	2.000
X 21k	1.500	1.500	2.000	1.500	2.000	2.000
X 22k	2.000	2.000	1.000	1.000	2.000	1.500
X 23k	0.500	1.500	2.000	1.500	2.000	1.500
X 31k	2.000	2.000	1.500	1.000	2.000	1.500
X 32k	1.000	1.000	1.000	1.000	1.000	2.000
X 33k	1.500	0.500	1.500	1.500	2.000	2.000

Moyennes et ecartis relatifs :

X... = 1.528

X1.. = 1.528 (-0.00) X2.. = 1.611 ( 5.45) X3.. = 1.444 (-5.45)

X..1 = 1.611 ( 5.45) X..2 = 1.528 (-0.00) X..3 = 1.444 (-5.45)

X...1 = 1.444 (-5.45) X...2 = 1.333 (-12.73) X...3 = 1.333 (-12.73)

X...4 = 1.389 (-9.09) X...5 = 1.833 ( 20.00) X...6 = 1.833 ( 20.00)

X11. = 1.417 (-7.27) X12. = 1.833 ( 20.00) X13. = 1.333 (-12.73)

X21. = 1.750 ( 14.55) X22. = 1.583 ( 3.64) X23. = 1.500 (-1.82)

X31. = 1.667 ( 9.09) X32. = 1.167 (-23.64) X33. = 1.500 (-1.82)

Variances et coefficients de variations

Se1 = 0.339 Se2 = 0.372 Se3 = 0.465

cv1 = 38.104 cv2 = 39.934 cv3 = 44.625

SA = 0.250 SD = 0.250 SB = 1.039

Tests F :

FA = 0.738 (0.494) FD = 0.672 (0.464) FAD = 1.703 (0.812)

Test de BARTLETT :  $K_{12} = 0.366$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.410 cv = 41.921

F1A = 0.609 (0.447) F1D = 0.609 (0.447) F1AD = 1.930 (0.977)

INFLUENCE DE TROIS DOSES DE CAD DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 2-8-84

Parametre: NF

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	5.500	7.000	5.500	7.000	6.000	6.500
X 12k	6.000	6.500	6.000	7.000	6.000	6.500
X 13k	6.000	5.000	6.000	6.000	6.000	6.500
X 21k	5.500	6.500	7.000	6.000	7.500	7.000
X 22k	6.000	5.500	6.000	6.000	6.000	6.000
X 23k	6.500	5.500	6.000	6.000	6.000	6.000
X 31k	6.000	7.000	6.500	6.000	6.500	6.000
X 32k	5.000	6.000	5.500	6.000	6.000	6.000
X 33k	6.000	5.500	6.500	5.500	6.000	6.500

Moyennes et ecarts relatifs :

X... = 6.120

X1.. = 6.167( 0.76) X2.. = 6.167( 0.76) X3.. = 6.028( -1.51)

X..1 = 6.389( 4.39) X..2 = 6.000( -1.97) X..3 = 5.972( -2.42)

X...1 = 5.833( -4.69) X...2 = 6.056( -1.06) X...3 = 6.111( -0.15)

X...4 = 6.167( 0.76) X...5 = 6.222( 1.66) X...6 = 6.333( 3.48)

X11. = 6.250( 2.12) X12. = 6.333( 3.48) X13. = 5.917( -3.33)

X21. = 6.583( 7.56) X22. = 5.917( -3.33) X23. = 6.000( -1.97)

X31. = 6.333( 3.48) X32. = 5.750( -6.05) X33. = 6.000( -1.97)

Variances et coefficients de variations

Se1 = 0.454 Se2 = 0.776 Se3 = 0.206

cv1 = 11.005 cv2 = 14.392 cv3 = 7.419

SA = 0.231 SD = 1.954 SB = 0.520

Tests F :

FA = 0.510 (0.351) FD = 2.518 (0.871) FAB = 3.009 (0.958)

Test de BARTLETT :  $K_{12} = 5.174$

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 24-7-84

Parametre: CCA1

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.000	5.000	0.000	2.500	0.000	0.000
X 12k	0.000	0.000	0.000	0.500	0.000	0.500
X 13k	0.000	0.000	0.000	0.000	0.000	0.000
X 21k	0.000	3.500	0.500	0.500	0.500	2.000
X 22k	1.000	1.000	0.000	0.500	1.000	0.000
X 23k	0.000	0.000	0.000	0.000	0.000	0.000
X 31k	0.500	3.500	1.000	1.500	1.000	1.500
X 32k	0.000	0.000	0.000	0.000	0.000	0.000
X 33k	0.000	0.000	0.000	0.000	0.000	0.000

Moyennes et ecartis relatifs :

X... = 0.519

X1.. = 0.472 (-8.93)    X2.. = 0.583 (12.50)    X3.. = 0.500 (-3.57)

X.1. = 1.306 (151.79)    X.2. = 0.250 (-51.79)    X.3. = 0.000 (%-100)

X..1 = 0.167 (-67.86)    X..2 = 1.444 (178.57)    X..3 = 0.167 (-67.86)

X..4 = 0.611 (17.86)    X..5 = 0.278 (-46.43)    X..6 = 0.444 (-14.29)

X11. = 1.250 (141.07)    X12. = 0.167 (-67.86)    X13. = 0.000 (%-100)

X21. = 1.167 (125.00)    X22. = 0.583 (12.50)    X23. = 0.000 (%-100)

X31. = 1.500 (189.29)    X32. = 0.000 (%-100)    X33. = 0.000 (%-100)

Variances et coefficients de variations

Se1 = 0.420    Se2 = 3.687    Se3 = 0.375

cv1 = 125.041    cv2 = 380.229    cv3 = 118.052

SA = 0.120    SD = 17.287    SB = 4.237

Tests F :

FA = 0.286 (0.240)    FD = 4.447 (0.959)    FAD = 1.767 (0.825)

Test de BARTLETT :K12 = 23.229

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

35

Analyse de variance

Date: 25-7-84

Parametre: CCA2

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.000	3.000	1.500	3.000	1.000	0.000
X 12k	0.000	0.000	0.000	0.500	0.000	1.500
X 13k	0.000	0.000	0.000	0.000	0.000	0.000
X 21k	0.000	2.500	1.000	1.000	1.500	2.000
X 22k	1.000	1.000	0.000	0.500	0.500	1.000
X 23k	0.000	0.000	0.000	0.000	0.000	0.000
X 31k	2.000	3.500	2.000	2.500	3.000	2.000
X 32k	0.000	0.000	0.000	0.000	0.000	0.000
X 33k	0.000	0.000	0.000	0.000	0.000	0.000

Moyennes et ecartis relatifs :

X...= 0.694

X1..= 0.583(-16.00) X2..= 0.667(-4.00) X3..= 0.833(20.00)

X..1= 1.750(152.00) X..2= 0.333(-52.00) X..3= 0.000(%-100)

X..1= 0.333(-52.00) X..2= 1.111(60.00) X..3= 0.500(-28.00)

X..4= 0.833(20.00) X..5= 0.667(-4.00) X..6= 0.722(4.00)

X11.= 1.417(104.00) X12.= 0.333(-52.00) X13.= 0.000(%-100)

X21.= 1.333(92.00) X22.= 0.667(-4.00) X23.= 0.000(%-100)

X31.= 2.500(260.00) X32.= 0.000(%-100) X33.= 0.000(%-100)

Variances et coefficients de variations

Se1 = 0.406 Se2 = 1.472 Se3 = 0.337

cv1 = 91.704 cv2 = 174.723 cv3 = 83.599

SA = 0.583 SD = 31.083 SB = 1.306

Tests F :

FA= 1.438 (0.718) FD= 21.113 (1.000) FAD= 8.854 (1.000)

Test de BARTLETT :K12 = 8.607

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

36

Analyse de variance

Date: 26-7-84

Parametre: CCA3

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.000	5.500	2.000	4.000	2.000	2.500
X 12k	0.000	0.000	0.000	3.000	0.000	2.500
X 13k	0.000	0.000	0.000	0.000	0.000	0.000
X 21k	1.500	4.500	2.500	1.000	4.000	3.500
X 22k	2.000	1.500	0.500	1.000	1.500	1.500
X 23k	0.000	0.000	0.000	0.000	0.000	0.000
X 31k	3.500	4.500	4.000	3.000	3.500	3.500
X 32k	0.000	0.000	1.500	0.000	1.000	2.000
X 33k	0.000	0.000	0.000	0.500	0.000	0.500

Moyennes et ecartis relatifs :

X... = 1.389

X1.. = 1.250 (-10.00) X2.. = 1.389 ( 0.00) X3.. = 1.528 ( 10.00)

X..1 = 3.111 (124.00) X..2 = 1.000 (-28.00) X..3 = 0.056 (-96.00)

X..1 = 0.889 (-36.00) X..2 = 1.778 ( 28.00) X..3 = 1.167 (-16.00)

X..4 = 1.389 (-0.00) X..5 = 1.333 (-4.00) X..6 = 1.778 ( 28.00)

X11. = 2.833 (104.00) X12. = 0.917 (-34.00) X13. = 0.000 (%-100 )

X21. = 2.833 (104.00) X22. = 1.333 (-4.00) X23. = 0.000 (%-100 )

X31. = 3.667 (164.00) X32. = 0.750 (-46.00) X33. = 0.167 (-88.00)

Variances et coefficients de variations

Se1 = 2.006 Se2 = 2.589 Se3 = 0.789

cv1 = 101.965 cv2 = 115.848 cv3 = 63.950

SA = 0.694 SD = 88.111 SB = 2.178

Tests F :

FA = 0.346 (0.291) FD = 34.034 (1.000) FAD = 2.077 (0.879)

Test de BARTLETT :K12 = 5.418

on accepte l'hypothese de l'egalite des variances residuelles

Se = 1.543 cv = 89.438

F1A = 0.450 (0.354) F1D = 57.102 (1.000) F1AD = 1.062 (0.612)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

37

Analyse de variance

Date: 27-7-84

Parametre: CCA4

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	2.500	4.500	3.000	4.000	1.500	5.000
X 12k	1.000	1.000	1.000	2.500	1.000	3.000
X 13k	0.000	0.500	0.500	0.500	2.500	0.500
X 21k	2.000	4.000	3.000	3.000	3.000	4.000
X 22k	2.000	1.500	1.000	2.500	2.500	1.000
X 23k	0.000	0.000	0.500	0.000	0.500	0.500
X 31k	4.000	4.000	4.000	3.000	3.500	4.000
X 32k	1.000	0.500	2.000	0.500	1.500	3.000
X 33k	0.000	0.000	1.500	0.500	2.500	1.000

Moyennes et ecartis relatifs :

X... = 1.889

X1.. = 1.917( 1.47) X2.. = 1.722( -8.82) X3.. = 2.028( 7.35)

X..1 = 3.444( 82.35) X..2 = 1.583(-16.18) X..3 = 0.639(-66.18)

X..1 = 1.389(-26.47) X..2 = 1.778( -5.88) X..3 = 1.833( -2.94)

X..4 = 1.833( -2.94) X..5 = 2.056( 8.82) X..6 = 2.444( 29.41)

X11. = 3.417( 80.88) X12. = 1.583(-16.18) X13. = 0.750(-60.29)

X21. = 3.167( 67.65) X22. = 1.750( -7.35) X23. = 0.250(-86.76)

X31. = 3.750( 98.53) X32. = 1.417(-25.00) X33. = 0.917(-51.47)

Variances et coefficients de variations

Se1 = 1.239 Se2 = 2.272 Se3 = 0.644

cv1 = 58.926 cv2 = 79.803 cv3 = 42.500

SA = 0.861 SD = 73.361 SB = 2.178

Tests F :

FA = 0.695 (0.475) FD = 32.286 (1.000) FAD = 1.509 (0.763)

Test de BARTLETT :K12 = 5.523

on accepte l'hypothese de l'egalite des variances residuelles

Se = 1.200 cv = 57.994

F1A = 0.718 (0.498) F1D = 61.134 (1.000) F1AD = 0.810 (0.472)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 30-7-84

Parametre: CCA5

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	4.000	3.500	2.500	2.500	3.500	3.500
X 12k	1.500	0.500	2.000	1.500	1.000	1.500
X 13k	0.000	0.000	0.000	0.000	0.000	0.000
X 21k	2.500	2.500	1.500	2.500	3.000	3.000
X 22k	1.500	0.500	1.000	1.000	2.000	1.500
X 23k	1.500	0.000	0.000	1.000	0.500	0.500
X 31k	3.500	2.500	3.000	2.000	3.000	3.000
X 32k	1.500	1.500	2.000	1.000	1.000	2.000
X 33k	0.000	0.000	0.000	0.000	0.000	0.000

Moyennes et ecartis relatifs :

X... = 1.472

X1.. = 1.528 ( 3.77)    X2.. = 1.444 ( -1.89)    X3.. = 1.444 ( -1.89)

X..1 = 2.861 ( 94.34)    X..2 = 1.361 ( -7.55)    X..3 = 0.194 ( -86.79)

X..1 = 1.778 ( 20.75)    X..2 = 1.222 ( -16.98)    X..3 = 1.333 ( -9.43)

X..4 = 1.278 ( -13.21)    X..5 = 1.556 ( 5.66)    X..6 = 1.667 ( 13.21)

X11. = 3.250 (120.75)    X12. = 1.333 ( -9.43)    X13. = 0.000 ( % -100 )

X21. = 2.500 ( 69.81)    X22. = 1.250 ( -15.09)    X23. = 0.583 ( -60.38)

X31. = 2.833 ( 92.45)    X32. = 1.500 ( 1.89)    X33. = 0.000 ( % -100 )

Variances et coefficients de variations

Se1 = 0.428    Se2 = 0.544    Se3 = 0.196

cv1 = 44.426    cv2 = 50.119    cv3 = 30.094

SA = 0.083    SD = 64.333    SB = 0.928

Tests F :

FA = 0.195 (0.173)    FD = 118.163 (1.000)    FAD = 8.066 (0.999)

Test de BARTLETT :  $Ki2 = 3.974$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.341    cv = 39.677

F1A = 0.244 (0.213)    F1D = 188.548 (1.000)    F1AD = 4.640 (0.996)

INFLUENCE DE TROIS DOSES DE CAD DE TROIS AMENDEMENTS CALCIFIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 1-8-84

Parametre: CCAB

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	3.500	2.500	2.000	2.000	3.500	4.500
X 12k	2.500	1.000	1.000	1.500	2.000	2.000
X 13k	0.000	0.000	0.000	0.000	0.000	0.000
X 21k	4.000	2.500	2.000	2.000	3.000	3.500
X 22k	3.000	1.000	0.500	0.000	2.000	2.000
X 23k	0.500	0.000	0.000	0.500	0.000	0.500
X 31k	3.000	2.000	3.000	2.500	3.500	3.000
X 32k	1.500	1.500	2.500	1.000	1.000	3.000
X 33k	0.000	0.000	0.500	0.500	0.500	0.000

Moyennes et ecartis relatifs :

X...= 1.556

X1..= 1.556(-0.00) X2..= 1.500(-3.57) X3..= 1.611( 3.57)

X.1.= 2.889( 85.71) X.2.= 1.611( 3.57) X.3.= 0.167(-89.29)

X..1= 2.000( 28.57) X..2= 1.167(-25.00) X..3= 1.278(-17.86)

X..4= 1.111(-28.57) X..5= 1.722( 10.71) X..6= 2.056( 32.14)

X11.= 3.000( 92.86) X12.= 1.667( 7.14) X13.= 0.000(%-100)

X21.= 2.833( 82.14) X22.= 1.417(-8.93) X23.= 0.250(-83.93)

X31.= 2.833( 82.14) X32.= 1.750( 12.50) X33.= 0.250(-83.93)

Variances et coefficients de variations

Se1 = 0.856 Se2 = 0.956 Se3 = 0.311

cv1 = 59.462 cv2 = 62.841 cv3 = 35.857

SA = 0.111 SD = 66.778 SB = 3.244

Tests F :

FA= 0.130 (0.121) FD= 69.884 (1.000) FAD= 0.982 (0.441)

Test de BARTLETT :K12 = 5.287

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.608 cv = 50.140

F1A= 0.183 (0.165) F10= 109.772 (1.000) F1AD= 0.502 (0.263)



INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 2-8-84

Parametre: CCA9

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	3.500	3.000	2.500	2.000	3.000	3.500
X 12k	2.500	1.500	0.500	1.000	2.500	2.500
X 13k	0.000	0.000	0.000	0.000	0.000	0.500
X 21k	3.000	2.000	2.000	2.500	3.000	3.500
X 22k	1.500	1.000	0.500	1.000	2.500	2.000
X 23k	0.500	0.000	0.000	0.500	0.500	0.000
X 31k	3.500	3.000	2.500	2.000	3.500	2.000
X 32k	1.500	2.000	2.500	0.500	1.000	2.500
X 33k	0.000	0.000	0.500	1.500	0.500	0.000

Moyennes et ecartis relatifs :

X... = 1.546

X1.. = 1.583( 2.40) X2.. = 1.444( -6.59) X3.. = 1.611( 4.19)

X..1 = 2.778( 79.64) X..2 = 1.611( 4.19) X..3 = 0.250(-83.83)

X..1 = 1.778( 14.97) X..2 = 1.389(-10.18) X..3 = 1.222(-20.96)

X..4 = 1.222(-20.96) X..5 = 1.833( 18.56) X..6 = 1.833( 18.56)

X11. = 2.917( 88.62) X12. = 1.750( 13.17) X13. = 0.083(-94.61)

X21. = 2.667( 72.46) X22. = 1.417( -8.38) X23. = 0.250(-83.83)

X31. = 2.750( 77.84) X32. = 1.667( 7.78) X33. = 0.417(-73.05)

Variances et coefficients de variations

Se1 = 0.687 Se2 = 0.920 Se3 = 0.401

cv1 = 53.604 cv2 = 62.042 cv3 = 40.933

SA = 0.287 SD = 57.620 SB = 1.631

Tests F :

FA = 0.418 (0.326) FD = 62.606 (1.000) FAD = 0.751 (0.429)

Test de BARTLETT :  $Ki2 = 2.496$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.602 cv = 50.184

F1A = 0.477 (0.370) F1D = 95.689 (1.000) F1AD = 0.500 (0.261)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 08/07/1984

Parametre: TNTF

Unite: %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	4.300	4.200	4.300	4.250	4.450	4.400
X 12k	4.100	4.300	4.150	4.250	4.400	4.200
X 13k	4.200	4.350	4.300	4.450	4.600	4.350
X 21k	4.200	4.000	4.250	4.400	4.400	4.450
X 22k	4.000	4.100	3.900	4.200	4.300	4.100
X 23k	4.000	3.900	3.800	4.050	4.250	4.350
X 31k	3.900	4.200	4.300	4.400	4.300	4.300
X 32k	3.700	4.100	4.200	4.000	4.000	4.200
X 33k	3.800	3.800	4.200	3.950	4.100	4.100

Moyennes et ecartis relatifs :

X... = 4.181

X1.. = 4.308 ( 3.06)    X2.. = 4.147 ( -0.80)    X3.. = 4.086 ( -2.26)

X..1 = 4.278 ( 2.33)    X..2 = 4.122 ( -1.40)    X..3 = 4.142 ( -0.93)

X...1 = 4.022 ( -3.79)    X...2 = 4.106 ( -1.79)    X...3 = 4.156 ( -0.60)

X...4 = 4.217 ( 0.86)    X...5 = 4.311 ( 3.12)    X...6 = 4.272 ( 2.19)

X11. = 4.317 ( 3.26)    X12. = 4.233 ( 1.26)    X13. = 4.375 ( 4.65)

X21. = 4.283 ( 2.46)    X22. = 4.100 ( -1.93)    X23. = 4.058 ( -2.92)

X31. = 4.233 ( 1.26)    X32. = 4.033 ( -3.52)    X33. = 3.992 ( -4.52)

Variances et coefficients de variations

Se1 = 0.064    Se2 = 0.020    Se3 = 0.012

cv1 = 6.051    cv2 = 3.369    cv3 = 2.640

SA = 0.474    SD = 0.259    SB = 0.209

Tests F :

FA = 7.413 (0.989)    FD = 13.039 (0.998)    FAD = 7.158 (0.999)

Test de BARTLETT : K12 = 10.065

L'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 08/081984

Parametre: TPTF

Unite: %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.680	0.660	0.700	0.620	0.640	0.740
X 12k	0.640	0.690	0.680	0.650	0.640	0.630
X 13k	0.510	0.790	0.580	0.640	0.730	0.640
X 21k	0.660	0.580	0.600	0.700	0.640	0.680
X 22k	0.610	0.580	0.480	0.580	0.550	0.650
X 23k	0.540	0.590	0.460	0.490	0.560	0.610
X 31k	0.740	0.610	0.630	0.640	0.650	0.660
X 32k	0.560	0.510	0.660	0.550	0.540	0.660
X 33k	0.540	0.450	0.580	0.550	0.630	0.540

Moyennes et ecartis relatifs :

X... = 0.613

X1.. = 0.659 ( 7.43)    X2.. = 0.587 ( -4.35)    X3.. = 0.594 ( -3.08)

X..1 = 0.657 ( 7.16)    X..2 = 0.603 ( -1.63)    X..3 = 0.579 ( -5.53)

X...1 = 0.609 ( -0.72)    X...2 = 0.607 ( -1.09)    X...3 = 0.597 ( -2.72)

X...4 = 0.602 ( -1.81)    X...5 = 0.620 ( 1.09)    X...6 = 0.646 ( 5.25)

X11. = 0.673 ( 9.78)    X12. = 0.655 ( 6.79)    X13. = 0.648 ( 5.71)

X21. = 0.643 ( 4.89)    X22. = 0.575 ( -6.25)    X23. = 0.542 ( -11.68)

X31. = 0.655 ( 6.79)    X32. = 0.580 ( -5.43)    X33. = 0.548 ( -10.60)

Variances et coefficients de variations

Se1 = 0.011    Se2 = 0.007    Se3 = 0.003

cv1 = 16.958    cv2 = 13.884    cv3 = 9.497

SA = 0.057    SD = 0.057    SB = 0.006

Tests F :

FA = 5.230 (0.973)    FD = 7.881 (0.991)    FAD = 1.932 (0.856)

Test de BARTLETT : K12 = 4.833

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.006    cv = 12.852

F1A = 9.106 (0.999)    F1D = 9.197 (0.999)    F1AD = 1.055 (0.608)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIDUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 06/07/84

Parametre: TKTF

Unite: %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	7.000	7.130	6.630	6.750	6.750	7.000
X 12k	6.880	7.130	6.630	7.130	6.880	6.880
X 13k	7.130	7.630	7.000	7.250	6.880	7.130
X 21k	7.130	6.880	6.750	6.880	6.750	7.000
X 22k	6.750	6.750	6.380	6.750	6.630	6.630
X 23k	6.880	7.000	6.500	6.630	6.750	6.630
X 31k	7.000	7.130	6.750	6.750	6.750	7.000
X 32k	6.630	6.750	7.130	6.500	6.380	6.880
X 33k	6.380	6.500	6.880	6.500	6.630	6.500

Moyennes et ecartis relatifs :

X... = 6.824

X1.. = 6.989( 2.42) X2.. = 6.759( -0.95) X3.. = 6.724( -1.47)

X..1 = 6.891( 0.97) X..2 = 6.761( -0.94) X..3 = 6.822( -0.03)

X..1 = 6.864( 0.59) X..2 = 6.989( 2.41) X..3 = 6.739( -1.25)

X..4 = 6.793( -0.46) X..5 = 6.711( -1.66) X..6 = 6.850( 0.37)

X11. = 6.877( 0.77) X12. = 6.922( 1.42) X13. = 7.170( 5.06)

X21. = 6.898( 1.08) X22. = 6.648( -2.58) X23. = 6.732( -1.36)

X31. = 6.897( 1.06) X32. = 6.712( -1.65) X33. = 6.565( -3.80)

Variances et coefficients de variations

Se1 = 0.122 Se2 = 0.040 Se3 = 0.032

cv1 = 5.124 cv2 = 2.918 cv3 = 2.603

SA = 0.746 SD = 0.152 SB = 0.182

Tests F :

FA = 6.101 (0.982) FD = 3.838 (0.943) FAD = 10.669 (1.000)

Test de BARTLETT :  $K_{12} = 7.039$

l'hypothese de l'egalite des variances residuelles est rejete

Analyse de variance

Date: 06/07/84

Parametre: TCATF

Unite: %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.120	0.120	0.120	0.110	0.120	0.120
X 12k	0.160	0.170	0.150	0.160	0.150	0.150
X 13k	0.210	0.220	0.190	0.210	0.210	0.220
X 21k	0.120	0.110	0.130	0.120	0.130	0.120
X 22k	0.160	0.170	0.150	0.160	0.160	0.160
X 23k	0.180	0.190	0.190	0.190	0.190	0.190
X 31k	0.120	0.130	0.130	0.110	0.130	0.110
X 32k	0.170	0.180	0.170	0.150	0.150	0.140
X 33k	0.200	0.200	0.200	0.180	0.210	0.210

Moyennes et ecartis relatifs :

X... = 0.160

X1.. = 0.162 ( 1.28)    X2.. = 0.157 ( -1.86)    X3.. = 0.161 ( 0.58)

X..1 = 0.121 (-24.48)    X..2 = 0.159 ( -0.46)    X..3 = 0.199 ( 24.94)

X..1 = 0.160 ( 0.23)    X..2 = 0.166 ( 3.71)    X..3 = 0.159 ( -0.46)

X..4 = 0.154 ( -3.25)    X..5 = 0.161 ( 0.93)    X..6 = 0.158 ( -1.16)

X11. = 0.118 (-25.87)    X12. = 0.157 ( -1.86)    X13. = 0.210 ( 31.55)

X21. = 0.122 (-23.78)    X22. = 0.160 ( 0.23)    X23. = 0.168 ( 17.98)

X31. = 0.122 (-23.78)    X32. = 0.160 ( 0.23)    X33. = 0.200 ( 25.29)

Variances et coefficients de variations

Se1 = 0.000    Se2 = 0.000    Se3 = 0.000

cv1 = 9.134    cv2 = 10.301    cv3 = 4.680

SA = 0.000    SD = 0.056    SB = 0.000

Tests F :

FA = 1.167 (0.649)    FD = 207.219 (1.000)    FAD = 11.217 (1.000)

Test de BARTLETT :  $K_{12} = 9.671$

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 06/07/84

Parametre: TMGTF

Unite: %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.550	0.500	0.560	0.530	0.540	0.560
X 12k	0.560	0.600	0.590	0.590	0.580	0.510
X 13k	0.660	0.660	0.670	0.670	0.650	0.680
X 21k	0.510	0.500	0.570	0.520	0.530	0.530
X 22k	0.530	0.540	0.550	0.530	0.570	0.560
X 23k	0.570	0.540	0.540	0.560	0.560	0.580
X 31k	0.490	0.520	0.560	0.520	0.540	0.530
X 32k	0.490	0.510	0.510	0.500	0.530	0.490
X 33k	0.490	0.570	0.510	0.520	0.520	0.520

Moyennes et ecartis relatifs :

X... = 0.553

X1.. = 0.598 ( 8.07)    X2.. = 0.544 ( -1.67)    X3.. = 0.518 ( -6.39)

X..1 = 0.531 ( -3.98)    X..2 = 0.547 ( -1.17)    X..3 = 0.562 ( 5.16)

X..1 = 0.539 ( -2.58)    X..2 = 0.549 ( -0.77)    X..3 = 0.562 ( 1.64)

X..4 = 0.549 ( -0.77)    X..5 = 0.558 ( 0.84)    X..6 = 0.562 ( 1.64)

X11. = 0.540 ( -2.38)    X12. = 0.588 ( 6.36)    X13. = 0.665 ( 20.22)

X21. = 0.527 ( -4.79)    X22. = 0.547 ( -1.17)    X23. = 0.558 ( 0.94)

X31. = 0.527 ( -4.79)    X32. = 0.505 ( -8.70)    X33. = 0.522 ( -5.69)

Variances et coefficients de variations

Se1 = 0.001    Se2 = 0.001    Se3 = 0.000

cv1 = 5.292    cv2 = 5.939    cv3 = 2.966

SA = 0.060    SD = 0.024    SB = 0.002

Tests F :

FA= 69.909 (1.000)    FD= 22.364 (1.000)    FAD= 52.321 (1.000)

Test de BARTLETT :ki2 = 7.539

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

46

Analyse de variance

Date : 2-8-84

Parametre : FMSTF

Unite : g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	13.070	14.120	11.700	16.520	13.570	13.450
X 12k	14.910	12.890	15.070	16.850	14.970	15.970
X 13k	7.480	7.890	9.320	9.640	6.920	11.320
X 21k	10.630	15.740	16.930	12.590	14.920	16.960
X 22k	18.870	17.040	16.700	16.830	15.720	17.970
X 23k	12.950	12.670	15.410	13.350	15.070	15.720
X 31k	16.570	15.860	15.390	12.130	18.100	15.700
X 32k	18.990	12.340	13.460	15.490	13.830	16.320
X 33k	18.270	12.420	17.140	14.820	16.460	19.930

Moyennes et ecartis relatifs :

X... = 14.536

X1.. = 12.537 (-13.76)    X2.. = 15.337 ( 5.51)    X3.. = 15.734 ( 8.24)

X..1 = 14.664 ( 0.88)    X..2 = 15.790 ( 8.63)    X..3 = 13.154 (-9.51)

X..1 = 14.638 ( 0.70)    X..2 = 13.441 (-7.53)    X..3 = 14.569 ( 0.23)

X..4 = 14.247 (-1.99)    X..5 = 14.396 (-0.97)    X..6 = 15.927 ( 9.57)

X11. = 13.738 (-5.49)    X12. = 15.110 ( 3.95)    X13. = 8.762 (-39.72)

X21. = 14.628 ( 0.63)    X22. = 17.188 (18.25)    X23. = 14.195 (-2.35)

X31. = 15.625 ( 7.49)    X32. = 15.072 ( 3.68)    X33. = 16.507 (13.56)

Variances et coefficients de variations

Se1 = 10.654    Se2 = 9.063    Se3 = 2.474  
cv1 = 22.455    cv2 = 20.710    cv3 = 10.821

SA = 109.360    SD = 62.956    SB = 11.691

Tests F :

Fa = 10.265 ++    Fd = 6.946 ++    Fad = 21.952+++

Test de BARTLETT :  $K_{12} = 8.621$

l'hypothese de l'egalite des variances residuelles est rejetee

Se = 6.166    cv = 17.000

F'a = 17.735+++    F'd = 10.310+++    F'ad = 8.808+++

INFLUENCE DE TROIS DOSES DE CAD DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

47

Analyse de variance

Date: 06/07/84

Parametre: QNTF

Unite: cg

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	56.201	59.304	50.310	70.210	60.386	59.180
X 12k	61.131	55.427	62.540	71.613	65.868	67.074
X 13k	31.416	34.321	40.076	42.898	31.832	49.242
X 21k	44.646	62.960	71.953	55.396	65.648	75.472
X 22k	75.480	69.864	65.130	70.686	67.596	73.677
X 23k	51.800	49.413	58.558	54.067	64.048	68.382
X 31k	64.623	66.612	66.177	53.372	77.830	67.510
X 32k	70.263	50.594	56.532	61.960	55.320	68.544
X 33k	69.426	47.196	71.988	58.539	67.486	81.713

Moyennes et ecartis relatifs :

X... = 60.546

X1.. = 53.835 (-11.08)    X2.. = 63.599 ( 5.04)    X3.. = 64.205 ( 6.04)

X..1 = 62.655 ( 3.48)    X..2 = 64.961 ( 7.29)    X..3 = 54.022 (-10.77)

X...1 = 58.332 (-3.66)    X...2 = 55.077 (-9.03)    X...3 = 60.363 (-0.30)

X...4 = 59.860 (-1.13)    X...5 = 61.779 ( 2.04)    X...6 = 67.866 (12.09)

X11. = 59.265 (-2.12)    X12. = 63.942 ( 5.61)    X13. = 38.298 (-36.75)

X21. = 62.679 ( 3.52)    X22. = 70.405 (16.28)    X23. = 57.711 (-4.68)

X31. = 66.021 ( 9.04)    X32. = 60.535 (-0.02)    X33. = 66.058 ( 9.10)

Variances et coefficients de variations

Se1 = 133.661    Se2 = 141.179    Se3 = 48.025

cv1 = 19.095    cv2 = 19.625    cv3 = 11.446

SA = 1219.363    SD = 1196.985    SB = 325.520

Tests F :

FA = 9.123 (0.994)    FD = 8.478 (0.993)    FAD = 17.216 (1.000)

Test de BARTLETT : K12 = 5.105

on accepte l'hypothese de l'egalite des variances residuelles

Se = 92.722    cv = 15.904

F12 = 13.151 (1.000)    F13 = 12.907 (1.000)    F1AD = 8.917 (1.000)



INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

48

Analyse de variance

Date: 06/07/84

Parametre: QPTF

Unite: cg

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	8.888	9.319	8.190	10.242	8.685	9.953
X 12k	9.542	8.894	10.248	10.952	9.581	10.061
X 13k	3.815	6.233	5.406	6.170	5.052	7.245
X 21k	7.016	9.129	10.158	8.813	9.549	11.533
X 22k	11.511	9.883	8.016	9.761	8.646	11.680
X 23k	6.993	7.475	7.089	6.541	8.439	9.589
X 31k	12.262	9.675	9.696	7.763	11.765	10.362
X 32k	10.634	6.293	8.884	8.519	7.458	10.771
X 33k	9.866	5.589	9.941	8.151	10.370	10.762

Moyennes et ecartis relatifs :

X... = 8.872

X1.. = 8.249 (-7.02) X2.. = 8.990 ( 1.34) X3.. = 9.376 ( 5.69)

X..1 = 9.611 ( 8.33) X..2 = 9.519 ( 7.30) X..3 = 7.485 (-15.63)

X..1 = 8.947 ( 0.85) X..2 = 8.055 (-9.21) X..3 = 8.625 (-2.78)

X..4 = 8.546 (-3.67) X..5 = 8.839 (-0.36) X..6 = 10.217 ( 15.17)

X11. = 9.213 ( 3.85) X12. = 9.880 ( 11.36) X13. = 5.653 (-36.28)

X21. = 9.366 ( 5.58) X22. = 9.916 ( 11.78) X23. = 7.688 (-13.34)

X31. = 10.254 ( 15.58) X32. = 8.762 (-1.24) X33. = 9.113 ( 2.72)

Variances et coefficients de variations

Se1 = 5.894 Se2 = 2.453 Se3 = 1.524

cv1 = 27.364 cv2 = 17.654 cv3 = 13.916

SA = 11.822 SD = 52.010 SB = 9.548

Tests F :

FA = 2.006 (0.816) FD = 21.203 (1.000) FAD = 10.963 (1.000)

Test de BARTLETT :  $\chi^2 = 6.491$

L'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

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Date: 06/07/84

Parametre: QKTF

Unite: cg

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	91.490	100.676	77.571	111.510	91.598	94.150
X 12k	102.581	91.906	99.914	120.140	102.994	109.874
X 13k	53.332	60.201	65.240	69.890	47.610	80.712
X 21k	75.792	108.291	114.277	86.619	100.710	118.720
X 22k	127.372	115.020	106.546	113.602	104.224	119.141
X 23k	89.096	88.690	100.165	88.510	101.722	104.224
X 31k	115.990	113.082	103.882	81.878	122.175	109.900
X 32k	125.904	83.295	95.970	100.685	88.235	112.282
X 33k	116.563	80.730	117.923	96.330	109.130	129.545

Moyennes et ecartis relatifs :

X... = 98.845

X1.. = 87.299 (-11.68)    X2.. = 103.485 ( 4.69)    X3.. = 105.750 ( 6.99)

X..1 = 101.017 ( 2.20)    X..2 = 106.649 ( 7.90)    X..3 = 88.867 (-10.09)

X...1 = 99.791 ( 0.96)    X...2 = 93.543 (-5.36)    X...3 = 97.943 (-0.91)

X...4 = 96.574 (-2.30)    X...5 = 96.489 (-2.38)    X...6 = 108.727 ( 10.00)

X11. = 94.499 (-4.40)    X12. = 104.568 ( 5.79)    X13. = 62.831 (-36.43)

X21. = 100.735 ( 1.91)    X22. = 114.318 ( 15.65)    X23. = 95.401 (-3.48)

X31. = 107.818 ( 9.08)    X32. = 101.062 ( 2.24)    X33. = 108.370 ( 9.64)

Variances et coefficients de variations

Se1 = 487.786    Se2 = 405.033    Se3 = 124.075

cv1 = 22.344    cv2 = 20.361    cv3 = 11.269

SA = 3645.136    SD = 2973.178    SB = 477.473

Tests F :

FA = 7.473 (0.990)    FD = 7.341 (0.989)    FAD = 16.360 (1.000)

Test de BARTLETT :K12 = 7.496

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 06/07/84

Parametre: QDATF

Unite: cg

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.568	1.694	1.404	1.817	1.628	1.614
X 12k	2.386	2.191	2.260	2.696	2.245	2.395
X 13k	1.571	1.736	1.771	2.024	1.453	2.490
X 21k	1.276	1.731	2.201	1.511	1.940	2.035
X 22k	3.019	2.697	2.505	2.693	2.515	2.875
X 23k	2.331	2.407	2.928	2.536	2.863	2.987
X 31k	1.988	2.062	2.001	1.334	2.353	1.727
X 32k	3.228	2.221	2.288	2.323	2.074	2.285
X 33k	3.654	2.484	3.428	2.668	3.457	4.185

Moyennes et ecartis relatifs :

X... = 2.296

X1.. = 1.941 (-15.42) X2.. = 2.403 ( 4.67) X3.. = 2.542 ( 10.75)

X..1 = 1.771 (-22.83) X..2 = 2.506 ( 9.15) X..3 = 2.610 ( 13.68)

X...1 = 2.336 ( 1.75) X...2 = 2.158 (-5.79) X...3 = 2.310 ( 0.61)

X...4 = 2.178 (-5.11) X...5 = 2.281 (-0.63) X...6 = 2.510 ( 9.36)

X11. = 1.621 (-29.38) X12. = 2.362 ( 2.91) X13. = 1.841 (-19.80)

X21. = 1.782 (-22.36) X22. = 2.751 ( 19.83) X23. = 2.675 ( 16.55)

X31. = 1.911 (-16.76) X32. = 2.403 ( 4.70) X33. = 3.313 ( 44.31)

Variances et coefficients de variations

Se1 = 0.330 Se2 = 0.420 Se3 = 0.078

cv1 = 25.018 cv2 = 28.237 cv3 = 12.204

SA = 3.560 SD = 7.515 SB = 0.291

Tests F :

FA = 10.793 (0.997) FD = 17.886 (0.999) FAD = 24.057 (1.000)

Test de BARTLETT :  $K_{12} = 10.894$

L'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYFERMAGNESIEN

Analyse de variance

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Date: 06/07/84

Parametre: QMGTF

Unite: cg

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	7.188	7.060	6.552	8.756	7.328	7.532
X 12k	8.350	7.734	8.891	9.941	8.683	9.742
X 13k	4.937	5.207	6.244	6.459	4.498	7.698
X 21k	5.421	7.870	9.650	6.547	7.908	8.989
X 22k	10.001	9.202	9.185	8.920	8.960	10.063
X 23k	7.381	6.842	8.321	7.476	8.439	9.118
X 31k	8.119	8.247	8.618	6.308	9.774	8.321
X 32k	9.305	6.293	6.865	7.745	7.330	7.997
X 33k	8.952	7.079	8.741	7.706	8.559	10.364

Moyennes et ecarts relatifs :

X... = 7.952

X1.. = 7.378 (-7.22)    X2.. = 8.350 ( 5.00)    X3.. = 8.129 ( 2.23)

X..1 = 7.788 (-2.06)    X..2 = 8.623 ( 8.43)    X..3 = 7.446 (-6.37)

X...1 = 7.739 (-2.67)    X...2 = 7.282 (-8.43)    X...3 = 8.119 ( 2.09)

X...4 = 7.762 (-2.39)    X...5 = 7.942 (-0.13)    X...6 = 8.869 (11.53)

X11. = 7.402 (-6.91)    X12. = 8.890 (11.79)    X13. = 5.840 (-26.55)

X21. = 7.731 (-2.78)    X22. = 9.389 (16.06)    X23. = 7.930 (-0.29)

X31. = 8.231 ( 3.51)    X32. = 7.589 (-4.57)    X33. = 8.567 ( 7.73)

Variances et coefficients de variations

Se1 = 2.666    Se2 = 2.159    Se3 = 0.762

cv1 = 20.532    cv2 = 18.478    cv3 = 10.976

SA = 9.346    SD = 13.191    SB = 5.039

Tests F :

FA = 3.506 (0.731)    FD = 6.110 (0.952)    FAD = 18.054 (1.000)

Test de BARTLETT :K12 = 6.183

L'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCAIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 2-8-84

Parametre: PH

Unite: .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	6.650	6.350	7.000	6.650	6.500	6.450
X 12k	7.300	7.000	7.150	7.150	7.250	7.400
X 13k	7.400	7.500	7.700	7.650	7.300	7.950
X 21k	6.150	6.300	6.350	6.400	6.350	6.500
X 22k	6.700	6.600	6.950	6.900	6.900	6.950
X 23k	7.400	7.200	7.400	7.350	7.350	7.600
X 31k	6.100	6.250	6.200	6.050	6.000	6.100
X 32k	6.700	6.450	6.500	6.800	6.650	6.850
X 33k	7.000	6.900	7.150	7.100	7.100	6.850

Moyennes et ecartis relatifs :

X... = 6.860

X1.. = 7.131 ( 3.94)    X2.. = 6.853 ( -0.11)    X3.. = 6.597 ( -3.83)

X..1 = 6.353 ( -7.40)    X..2 = 6.900 ( 0.58)    X..3 = 7.328 ( 6.82)

X..1 = 6.822 ( -0.55)    X..2 = 6.728 ( -1.93)    X..3 = 6.933 ( 1.07)

X..4 = 6.894 ( 0.50)    X..5 = 6.822 ( -0.55)    X..6 = 6.961 ( 1.47)

X11. = 6.600 ( -3.79)    X12. = 7.208 ( 5.07)    X13. = 7.583 ( 10.54)

X21. = 6.742 ( -7.56)    X22. = 6.833 ( -0.39)    X23. = 7.383 ( 7.63)

X31. = 6.117 ( -10.84)    X32. = 6.658 ( -2.94)    X33. = 7.017 ( 2.28)

Variances et coefficients de variations

Se1 = 0.029    Se2 = 0.036    Se3 = 0.032

cv1 = 2.479    cv2 = 2.774    cv3 = 2.589

SA = 2.561    SD = 8.598    SB = 0.134

Tests F :

FA = 63.553 (1.000)    FD = 237.501 (1.000)    FAD = 1.233 (0.679)

Test de BARTLETT :  $K_{12} = 0.126$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.032    cv = 2.610

F1A = 79.911 (1.000)    F1D = 268.248 (1.000)    F1AD = 1.233 (0.628)

Analyse de variance

Date: 2-8-84

Parametre: QCAE

Unite: g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.189	0.211	0.254	0.233	0.194	0.217
X 12k	0.333	0.387	0.344	0.360	0.320	0.362
X 13k	0.505	0.643	0.664	0.654	0.505	0.539
X 21k	0.258	0.308	0.254	0.263	0.260	0.254
X 22k	0.546	0.555	0.498	0.560	0.469	0.536
X 23k	0.866	1.024	0.857	0.874	0.759	0.538
X 31k	0.372	0.346	0.301	0.357	0.295	0.335
X 32k	1.130	0.959	0.994	0.773	0.840	0.741
X 33k	1.327	1.297	1.263	1.079	1.395	1.190

Moyennes et ecartis relatifs :

X... = 0.585

X1.. = 0.384 (-34.34)    X2.. = 0.538 (-8.08)    X3.. = 0.833 (42.42)

X..1 = 0.272 (-53.44)    X..2 = 0.595 ( 1.70)    X..3 = 0.888 (51.74)

X..1 = 0.614 ( 4.98)    X..2 = 0.637 ( 8.84)    X..3 = 0.603 ( 3.11)

X..4 = 0.572 (-2.13)    X..5 = 0.560 (-4.31)    X..6 = 0.524 (-10.49)

X11. = 0.216 (-63.01)    X12. = 0.351 (-39.98)    X13. = 0.585 (-0.02)

X21. = 0.266 (-54.50)    X22. = 0.527 (-9.86)    X23. = 0.819 (40.10)

X31. = 0.335 (-42.80)    X32. = 0.906 (54.93)    X33. = 1.258 (115.14)

Variances et coefficients de variations

Se1 = 0.019    Se2 = 0.011    Se3 = 0.008

cv1 = 23.355    cv2 = 18.079    cv3 = 15.686

SA = 1.875    SD = 3.409    SB = 0.030

Tests F :

FA = 100.460 (1.000)    FD = 304.836 (1.000)    FA0 = 31.846 (1.000)

Test de BARTLETT :  $K_{12} = 2.193$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.012    cv = 13.469

F1A = 160.639 (1.000)    F1D = 292.094 (1.000)    F1AD = 22.973 (1.000)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 2-8-84

Parametre: OMGE

Unite: g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.290	1.350	1.585	1.392	1.414	1.439
X 12k	1.563	1.781	1.661	1.636	1.568	1.713
X 13k	1.926	2.268	2.293	2.174	1.866	2.195
X 21k	1.653	1.734	1.405	1.610	1.606	1.726
X 22k	2.029	2.029	1.935	2.084	1.999	2.153
X 23k	2.673	2.780	2.528	2.413	2.349	1.952
X 31k	1.982	1.845	1.905	1.939	1.798	1.930
X 32k	2.575	2.840	2.913	2.451	2.562	2.571
X 33k	3.045	3.211	3.019	3.143	3.404	2.981

Moyennes et ecartis relatifs :

X... = 2.109

X1.. = 1.729 (-18.04) X2.. = 2.037 (-3.44) X3.. = 2.562 (21.48)

X..1 = 1.645 (-22.02) X..2 = 2.115 (0.26) X..3 = 2.568 (21.76)

X...1 = 2.082 (-1.29) X...2 = 2.204 (4.51) X...3 = 2.138 (1.39)

X...4 = 2.094 (-0.73) X...5 = 2.063 (-2.19) X...6 = 2.073 (-1.69)

X11. = 1.412 (-33.07) X12. = 1.654 (-21.59) X13. = 2.120 (0.54)

X21. = 1.622 (-23.08) X22. = 2.038 (-3.37) X23. = 2.449 (16.13)

X31. = 1.900 (-9.92) X32. = 2.652 (25.75) X33. = 3.134 (48.60)

Variances et coefficients de variations

Se1 = 0.043 Se2 = 0.037 Se3 = 0.037

cv1 = 9.822 cv2 = 9.179 cv3 = 9.087

SA = 6.392 SD = 7.673 SB = 0.051

Tests F :

FA = 148.962 (1.000) FD = 204.748 (1.000) FAD = 7.874 (0.999)

Test de BARTLETT : K12 = 0.083

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.038 cv = 9.299

F1A = 166.208 (1.000) F1D = 199.496 (1.000) F1AD = 7.520 (1.000)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 2-8-84

Parametre: OKE

Unite: g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.574	0.330	0.383	0.320	0.480	0.463
X 12k	0.544	0.510	0.570	0.459	0.566	0.600
X 13k	0.591	0.536	0.557	0.493	0.371	0.463
X 21k	0.463	0.429	0.515	0.485	0.570	0.446
X 22k	0.400	0.320	0.485	0.425	0.566	0.442
X 23k	0.702	0.527	0.497	0.557	0.634	0.553
X 31k	0.450	0.300	0.459	0.450	0.536	0.476
X 32k	0.386	0.403	0.450	0.442	0.574	0.553
X 33k	0.519	0.476	0.429	0.574	0.506	0.566

Moyennes et ecartis relatifs :

X... = 0.489

X1.. = 0.490 ( 0.21) X2.. = 0.501 ( 2.54) X3.. = 0.475 ( -2.75)

X..1 = 0.452 ( -7.54) X..2 = 0.483 ( -1.11) X..3 = 0.531 ( 8.65)

X..1 = 0.515 ( 5.34) X..2 = 0.426 ( -12.85) X..3 = 0.483 ( -1.16)

X..4 = 0.467 ( -4.35) X..5 = 0.534 ( 9.25) X..6 = 0.507 ( 3.77)

X11. = 0.425 ( -12.98) X12. = 0.542 ( 10.86) X13. = 0.502 ( 2.76)

X21. = 0.485 ( -0.79) X22. = 0.440 ( -10.03) X23. = 0.579 ( 18.44)

X31. = 0.445 ( -8.85) X32. = 0.468 ( -4.16) X33. = 0.512 ( 4.74)

Variances et coefficients de variations

Se1 = 0.012 Se2 = 0.014 Se3 = 0.003

cv1 = 22.587 cv2 = 23.916 cv3 = 11.539

SA = 0.006 SD = 0.057 SB = 0.027

Tests F :

FA = 0.497 (0.373) FD = 4.182 (0.953) FAD = 9.296 (1.000)

Test de BARTLETT : K12 = 8.819

l'hypothese de l'egalite des variances residuelles est rejetee



INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIFIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 2-8-84

Parametre: ONAE

Unite: g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	2.767	2.605	2.711	2.592	2.583	2.686
X 12k	2.630	2.763	2.635	2.677	2.630	2.788
X 13k	2.780	2.972	3.049	2.933	2.562	2.848
X 21k	2.682	2.878	2.746	2.690	2.848	2.780
X 22k	2.767	2.801	2.921	2.929	2.865	2.968
X 23k	3.143	3.062	3.070	2.882	2.921	2.575
X 31k	3.015	2.788	2.810	2.822	2.848	2.985
X 32k	3.126	3.493	3.442	2.912	3.130	3.070
X 33k	3.228	3.305	3.134	3.198	3.510	3.062

Moyennes et ecartis relatifs :

X... = 2.900

X1.. = 2.734 (-5.73)    X2.. = 2.863 (-1.30)    X3.. = 3.104 (7.03)

X.1. = 2.769 (-4.54)    X.2. = 2.919 (0.65)    X.3. = 3.013 (3.89)

X..1 = 2.904 (0.13)    X..2 = 2.963 (2.16)    X..3 = 2.946 (1.59)

X..4 = 2.849 (-1.79)    X..5 = 2.878 (-0.79)    X..6 = 2.862 (-1.31)

X11. = 2.657 (-8.39)    X12. = 2.687 (-7.35)    X13. = 2.857 (-1.48)

X21. = 2.771 (-4.47)    X22. = 2.875 (-0.87)    X23. = 2.942 (1.44)

X31. = 2.878 (-0.77)    X32. = 3.195 (10.18)    X33. = 3.240 (11.70)

Variances et coefficients de variations

Se1 = 0.026    Se2 = 0.036    Se3 = 0.033

cv1 = 5.535    cv2 = 6.544    cv3 = 6.255

SA = 1.273    SD = 0.547    SB = 0.038

Tests F :

FA = 49.381 (1.000)    FD = 15.186 (0.999)    FAD = 2.265 (0.902)

Test de BARTLETT : K12 = 0.288

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.032    cv = 6.158

F1A = 39.890 (1.000)    F1D = 17.148 (1.000)    F1AD = 2.336 (0.929)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 6 JUILLET 1984

Parametre: P TRUOG

Unite: ppm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	23.000	37.000	33.000	29.000	28.000	23.000
X 12k	34.000	39.000	39.000	35.000	27.000	38.000
X 13k	48.000	35.000	35.000	32.000	45.000	49.000
X 21k	35.000	45.000	29.000	37.000	27.000	30.000
X 22k	34.000	39.000	29.000	37.000	30.000	33.000
X 23k	44.000	37.000	39.000	37.000	38.000	33.000
X 31k	34.000	35.000	41.000	49.000	29.000	33.000
X 32k	37.000	52.000	30.000	54.000	28.000	35.000
X 33k	37.000	37.000	39.000	39.000	33.000	33.000

Moyennes et ecartis relatifs :

X... = 35.870

X1.. = 34.944 (-2.58)    X2.. = 35.167 (-1.96)    X3.. = 37.500 ( 4.54)

X..1 = 33.167 (-7.54)    X..2 = 36.111 ( 0.67)    X..3 = 38.333 ( 6.87)

X...1 = 36.222 ( 0.98)    X...2 = 39.556 (10.27)    X...3 = 34.889 (-2.74)

X...4 = 38.778 ( 8.11)    X...5 = 31.667 (-11.72)    X...6 = 34.111 (-4.90)

X11. = 28.833 (-19.62)    X12. = 35.333 (-1.50)    X13. = 40.667 (13.37)

X21. = 33.833 (-5.68)    X22. = 33.667 (-6.14)    X23. = 38.000 ( 5.94)

X31. = 36.833 ( 2.68)    X32. = 39.333 ( 9.65)    X33. = 36.333 ( 1.29)

Variances et coefficients de variations

Se1 = 83.526    Se2 = 105.659    Se3 = 30.284

cv1 = 25.479    cv2 = 28.683    cv3 = 15.493

SA = 72.148    SD = 241.815    SB = 157.993

Tests F :

FA = 0.364 (0.454)    FD = 2.284 (0.949)    FAD = 4.581 (0.991)

Test de BARTLETT : K12 = 5.392

on accepte l'hypothese de l'egalite des variances residuelles

Se = 62.788    cv = 22.090

F1A = 1.149 (0.672)    F10 = 3.851 (0.971)    F1AD = 2.253 (0.920)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 6 JUILLET 1984

Parametre: TCAS

Unite: meq/100g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	9.220	9.460	9.110	9.100	8.840	8.790
X 12k	13.460	13.050	11.870	12.960	12.170	12.420
X 13k	17.870	18.760	17.610	17.810	16.220	16.680
X 21k	8.920	8.910	9.260	9.050	8.550	8.680
X 22k	13.090	12.770	13.390	13.170	13.110	12.270
X 23k	17.500	17.500	17.550	17.160	15.620	16.910
X 31k	8.870	9.100	8.930	8.640	8.500	8.390
X 32k	13.570	12.280	11.850	12.930	12.110	12.700
X 33k	17.520	17.350	17.610	17.610	15.360	15.520

Moyennes et ecartis relatifs :

X... = 12.919

X1.. = 13.078 ( 1.23) X2.. = 12.967 ( 0.37) X3.. = 12.713 ( -1.60)

X..1 = 8.907 (-31.06) X..2 = 12.732 ( -1.45) X..3 = 17.120 ( 32.51)

X..1 = 13.336 ( 3.22) X..2 = 13.242 ( 2.50) X..3 = 13.020 ( 0.78)

X..4 = 13.159 ( 1.85) X..5 = 12.276 ( -4.98) X..6 = 12.484 ( -3.37)

X11. = 9.087 (-29.67) X12. = 12.655 ( -2.05) X13. = 17.492 ( 35.39)

X21. = 8.895 (-31.15) X22. = 12.967 ( 0.37) X23. = 17.040 ( 31.89)

X31. = 8.738 (-32.36) X32. = 12.573 ( -2.68) X33. = 16.828 ( 30.26)

Variances et coefficients de variations

Se1 = 0.323 Se2 = 1.133 Se3 = 0.163

cv1 = 4.396 cv2 = 8.237 cv3 = 3.128

SA = 1.257 SD = 608.082 SB = 3.415

Tests F :

FA = 3.897 (0.945) FD = 536.908 (1.000) FAD = 3.071 (0.961)

Test de BARTLETT : K12 = 13.463

l'hypothese de l'egalite des variances residuelles est rejetee

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 6 JUILLET 1984

Parametre: TMGS

Unite: meq/100g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	41.270	41.090	42.700	43.480	39.440	39.370
X 12k	40.730	40.290	37.160	42.700	38.230	37.620
X 13k	39.660	39.660	40.820	39.940	37.560	37.350
X 21k	40.460	39.300	40.550	41.000	39.010	39.370
X 22k	39.840	41.540	41.270	40.020	39.080	39.810
X 23k	38.770	38.940	37.990	40.640	36.190	40.540
X 31k	40.910	39.190	40.910	42.880	38.940	38.230
X 32k	47.530	40.550	40.820	41.980	39.080	39.370
X 33k	38.940	37.640	37.510	39.840	37.560	41.090

Moyennes et ecartis relatifs :

X... = 39.933

X1.. = 39.948 ( 0.04) X2.. = 39.684 ( -0.62) X3.. = 40.165 ( 0.58)

X..1 = 40.450 ( 1.30) X..2 = 40.423 ( 1.23) X..3 = 38.924 ( -2.52)

X..1 = 40.901 ( 2.43) X..2 = 39.800 ( -0.33) X..3 = 39.970 ( 0.09)

X..4 = 41.387 ( 3.64) X..5 = 38.343 ( -3.98) X..6 = 39.194 ( -1.85)

X11. = 41.225 ( 3.24) X12. = 39.455 ( -1.20) X13. = 39.165 ( -1.92)

X21. = 39.948 ( 0.04) X22. = 40.260 ( 0.82) X23. = 38.845 ( -2.72)

X31. = 40.177 ( 0.61) X32. = 41.555 ( 4.06) X33. = 38.763 ( -2.93)

Variances et coefficients de variations

Se1 = 4.365 Se2 = 4.949 Se3 = 2.692

cv1 = 5.232 cv2 = 5.571 cv3 = 4.109

SA = 2.085 SD = 27.448 SB = 22.111

Tests F :

FA = 0.478 (0.362) FD = 5.547 (0.976) FAD = 3.248 (0.967)

Test de BARTLETT : Ki2 = 1.467

on accepte l'hypothese de l'egalite des variances residuelles

Se = 3.675 cv = 4.300

F1A = 0.567 (0.423) F10 = 7.470 (0.998) F1AD = 2.380 (0.933)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 6 JUILLET 1984

Parametre: TKS

Unite: meq/100g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.320	0.710	0.940	1.090	0.680	1.010
X 12k	0.490	0.700	0.830	0.830	0.890	0.570
X 13k	0.880	0.600	0.940	0.880	1.010	0.580
X 21k	1.050	0.540	0.890	0.930	0.780	1.010
X 22k	0.600	0.770	0.890	0.830	0.790	0.850
X 23k	0.820	0.600	1.040	0.950	0.800	1.020
X 31k	0.710	0.610	1.000	1.000	1.330	0.890
X 32k	0.600	0.710	1.010	0.940	0.680	0.780
X 33k	0.710	0.590	0.780	0.830	0.560	0.940

Moyennes et ecartes relatifs :

X... = 0.829

X1.. = 0.831 ( 0.16)    X2.. = 0.842 ( 1.56)    X3.. = 0.815 ( -1.72)

X..1 = 0.916 ( 10.47)    X..2 = 0.764 ( -7.82)    X..3 = 0.807 ( -2.66)

X..1 = 0.798 ( -3.80)    X..2 = 0.648 ( -21.88)    X..3 = 0.924 ( 11.48)

X..4 = 0.920 ( 10.94)    X..5 = 0.836 ( 0.76)    X..6 = 0.850 ( 2.50)

X11. = 0.958 ( 15.56)    X12. = 0.718 ( -13.38)    X13. = 0.815 ( -1.72)

X21. = 0.867 ( 4.51)    X22. = 0.788 ( -4.94)    X23. = 0.872 ( 5.11)

X31. = 0.923 ( 11.34)    X32. = 0.787 ( -5.14)    X33. = 0.735 ( -11.37)

Variances et coefficients de variations

Se1 = 0.035    Se2 = 0.058    Se3 = 0.038

cv1 = 22.520    cv2 = 29.103    cv3 = 23.454

SA = 0.007    SD = 0.220    SB = 0.186

Tests F :

FA = 0.193 (0.171)    FD = 3.780 (0.941)    FAD = 1.252 (0.679)

Test de BARTLETT :  $K_{12} = 0.834$

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.042    cv = 24.770

F1A = 0.159 (0.146)    F1D = 5.217 (0.990)    F1AD = 1.122 (0.640)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 6 JUILLET 1984

Parametre: TNAS

Unite: meq/100g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.260	0.280	0.300	0.320	0.310	0.300
X 12k	0.300	0.320	0.280	0.320	0.300	0.330
X 13k	0.260	0.280	0.300	0.300	0.300	0.310
X 21k	0.270	0.260	0.300	0.320	0.300	0.320
X 22k	0.320	0.320	0.300	0.320	0.330	0.330
X 23k	0.300	0.300	0.320	0.320	0.350	0.330
X 31k	0.300	0.290	0.320	0.320	0.320	0.300
X 32k	0.280	0.280	0.320	0.320	0.330	0.320
X 33k	0.300	0.300	0.340	0.340	0.340	0.340

Moyennes et ecartis relatifs :

X... = 0.308

X1.. = 0.298 (-3.19)    X2.. = 0.312 ( 1.14)    X3.. = 0.314 ( 2.04)

X..1 = 0.299 (-2.82)    X..2 = 0.312 ( 1.32)    X..3 = 0.313 ( 1.50)

X..1 = 0.288 (-6.61)    X..2 = 0.292 (-5.17)    X..3 = 0.309 ( 0.24)

X..4 = 0.320 ( 3.85)    X..5 = 0.320 ( 3.85)    X..6 = 0.320 ( 3.85)

X11. = 0.295 (-4.27)    X12. = 0.308 ( 0.06)    X13. = 0.292 (-5.35)

X21. = 0.295 (-4.27)    X22. = 0.320 ( 3.85)    X23. = 0.320 ( 3.85)

X31. = 0.308 ( 0.06)    X32. = 0.308 ( 0.06)    X33. = 0.327 ( 6.01)

Variances et coefficients de variations

Se1 = 0.000                    Se2 = 0.000                    Se3 = 0.000

cv1 = 6.151                    cv2 = 6.732                    cv3 = 4.592

SA = 0.003                    SD = 0.002                    SB = 0.004

Tests F :

FA = 7.433 (0.989)    FD = 4.759 (0.965)    FAD = 6.816 (0.999)

Test de BARTLETT : K12 = 2.258

on accepte l'hypothese de l'egalite des variances residuelles

Se = 0.000                    cv = 5.598

F1A = 8.975 (0.999)    F1D = 6.884 (0.997)    F1AD = 4.587 (0.996)

INFLUENCE DE TROIS DOSES DE CAO DE TROIS AMENDEMENTS CALCIQUES  
SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

Analyse de variance

Date: 6 JUILLET 1984

Parametre: SBE

Unite: meq/100g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	52.070	51.540	53.050	53.990	49.270	49.470
X 12k	54.980	54.360	50.140	56.810	51.590	50.940
X 13k	58.670	59.300	59.670	58.930	55.090	54.920
X 21k	50.700	49.010	51.000	51.300	48.640	49.380
X 22k	53.850	55.400	55.550	54.340	53.310	53.260
X 23k	57.390	57.340	56.900	59.070	52.960	58.800
X 31k	50.790	49.190	51.160	52.840	49.090	47.810
X 32k	61.980	53.820	54.000	56.170	52.200	53.170
X 33k	57.470	55.880	56.240	58.620	53.820	57.890

Moyennes et ecartis relatifs :

X... = 53.989

X1.. = 54.155 ( 0.31)    X2.. = 53.806 ( -0.34)    X3.. = 54.008 ( 0.03)

X..1 = 50.572 ( -6.33)    X..2 = 54.232 ( 0.45)    X..3 = 57.164 ( 5.88)

X...1 = 55.322 ( 2.47)    X...2 = 53.982 ( -0.01)    X...3 = 54.223 ( 0.43)

X...4 = 55.786 ( 3.33)    X...5 = 51.774 ( -4.10)    X...6 = 52.849 ( -2.11)

X11. = 51.565 ( -4.49)    X12. = 53.137 ( -1.58)    X13. = 57.763 ( 6.99)

X21. = 50.005 ( -7.38)    X22. = 54.335 ( 0.64)    X23. = 57.077 ( 5.72)

X31. = 50.147 ( -7.12)    X32. = 55.223 ( 2.29)    X33. = 56.653 ( 4.93)

Variances et coefficients de variations

Se1 = 5.743                    Se2 = 5.678                    Se3 = 3.219

cv1 = 4.439                    cv2 = 4.414                    cv3 = 3.323

SA = 1.108                    SD = 392.701                    SB = 40.551

Tests F :

FA = 0.193 (0.172)    FD = 69.163 (1.000)    FAD = 3.844 (0.982)

Test de BARTLETT : K12 = 1.562

on accepte l'hypothese de l'egalite des variances residuelles

Se = 4.465                    cv = 3.914

F1A = 0.248 (0.216)    F1D = 87.957 (1.000)    F1AD = 2.771 (0.961)

4 - COMPARAISON DE MOYENNES PAR LE TEST DE NEWMAN ET KEULS.  
(pour la signification des sigles cf l'annexe 1)

















COMPARAISON DE MOYENNES PAR LE TEST  
DE NEWMAN ET KEULS

71

date : 2-8-84  
DONNEES :

parametre : NF

unite : .

DDL = 20      NI = 6      SE = 0.206  
X11 = 6.250  
X12 = 6.333  
X13 = 5.917  
X21 = 6.583  
X22 = 5.917  
X23 = 6.000  
X31 = 6.333  
X32 = 5.750  
X33 = 6.000

RESULTATS :

	1	2	3	4	5	6	7	8	9
	X32	X22	X13	X33	X23	X11	X31	X12	X21
1	X32								
2	X22								
3	X13								
4	X33								
5	X23								
6	X11								
7	X31								
8	X12								
9	X21								

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COMPARAISON DE MOYENNES PAR LE TEST  
DE NEWMAN ET KEULS

:CCA1

unite : .











