RÉPUBLIQUE FRANÇAISE
NOUVELLE-CALÉDONIE
ET DÉPENDANCES

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

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

CENTRE DE NOUMÉA

UR E9

B. BONZON
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NFLUENCE DE QUATRE DOSES DE CHAUX DE TROIS MELANGES DIFFERENTS DE CROUTE CALCAIRE ET DE GYPSE SUR UNE CULTURE DE MAIS SUR VERTISOL HYPERMAGNESIEN

TROISIEME ETUDE EXPERIMENTALE CONDUITE EN SERRE SUR VERTISOL HYPERMAGNESIEN (MARS - AVRIL 84)

ANNEXE

RESULTATS DES OBSERVATIONS ET DES MESURES

NOVEMBRE 1984

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

République Française
Nouvelle-Calédonie
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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Troisième étude expérimentale conduite en serre sur vertisol hyper-magnésien.
(Mars-Avril 84)

A N N E X E

Résultats des observations et des mesures.

Novembre 1984.

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

S O M M A I R E

1 - PARAMETRES OBSERVES

SIGNIFICATION DES SIGLES DES PARAMETRES.

Sigles	S i g n i f i c a t i o n	Unités
HX	Hauteur d'un plant au Xème jour	cm
HF	Hauteur totale finale	cm
VX-Y	Vitesse de croissance en hauteur d'un plantentre le Xème jour et le Yème jour	cm/j.
NFI	Nombre de feuilles : Ième mesure	-
NR	Nombre de rejets	-
IC-CAI	Indice de carence en Calcium : Ième mesure	-
IC-PI	Indice de carence en Phosphore : Ième mesure	-
IC-CHLO	Indice de Chlorose	-
PMSTF	Poids de matière sèche des tiges et feuilles	g
TXTF	Taux d'élément X dans les tiges et feuilles	%
PXTF	Exportation d'élément X dans les tiges et feuilles	g
PH	pH du sol	-

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

RECAPITULATIF DES ANALYSES DE VARIANCE.

PARAMETRES					TESTS F DES FACTEURS CONTROLES					
					Dose		Mélange		Dose x Mélange	
No	Sigles	Unités	Moyennes	CV%	F	Seuil	F	Seuil	F	Seuil
1	H6	cm	5,743	19,983	1,459		0,440		1,173	
2	H8	cm	8,236	17,872	1,742		0,943		1,659	
3	H10	cm	9,054	15,054	2,949	*	0,717		1,495	
4	H13	cm	10,356	14,630	4,752	**	1,091		1,072	
5	H15	cm	11,572	15,817	13,727	***	1,732		1,035	
6	H17	cm	13,191	15,789	30,339	***	3,281	*	1,407	
7	H20	cm	16,290	15,984	63,747	***	5,885	**	1,980	
8	H22	cm	18,831	18,080	62,847	***	7,299	**	1,833	
9	H24	cm	22,042	18,586	69,532	***	8,304	***	2,629	*
10	V6-8	cm/j	1,247	37,032	1,497		0,896		2,263	*
11	V8-10	cm/j	0,409	58,147	2,132		0,363		1,009	
12	V10-13	cm/j	0,434	51,422	13,318	***	0,658		1,397	
13	V13-15	cm/j	0,608	59,645	31,559	***	1,320		0,470	
14	V15-17	cm/j	0,809	34,347	75,656	***	6,20	**	2,684	*
15	V17-20	cm/j	1,033	36,377	68,623	***	7,379	**	1,746	*
16	V20-22	cm/j	1,270	53,564	21,058	***	4,528	*	1,443	
17	V22-24	cm/j	1,606	43,078	26,921	***	3,587	*	2,262	*
18	NR	-	0,410	151,881	21,585	***	0,018		0,640	
19	IC-P1	-	0,389	162,418	23,247	***	2,465		3,956	**
20	IC-P2	-	0,438	134,413	11,127	***	0,289		1,939	
21	NF1	-	3,757	11,139	14,421	***	3,846	*	0,621	
22	NF2	-	5,965	14,155	26,424	***	10,120	***	1,782	
23	IC-CHLO	-	0,583	92,462	43,860	***	0,645		0,581	
24	IC-CA1	-	0,194	223,216	13,172	***	1,364		3,183	**
25	IC-CA2	-	0,792	66,149	101,863	***	0,228		0,397	
26	HF	cm	71,171	16,226	51,613	***	10,579	**	3,803	**
27	PMSTF	g	4,695	33,275	94,555	***	11,956	***	3,122	*
28	PH	-	7,021	3,312	953,973	***	14,191	***	3,674	**
29	TNTF	%	3,777	8,434	8,203	***	0,946		1,992	
30	TPTF	%	0,516	25,521	10,006	***	0,946		3,386	**
31	TKTF	%	5,319	9,517	25,442	***	1,340		7,606	***
32	TCATF	%	0,227	15,568	490,799	***	0,560		0,587	
33	TMGTF	%	0,698	12,390	96,432	***	8,429	***	2,617	*
34	PNTF	Cg	17,875	30,481	118,927	***	10,578	***	2,886	*

RECAPITULATIF DES ANALYSES DE VARIANCE.

PARAMETRES					TESTS F DES FACTEURS CONTROLES					
					Dose		Mélange		Dose x Mélange	
No	Sigles	Unités	Moyennes	CV%	F	Seuil	F	Seuil	F	Seuil
35	PPTF	Cg	2,508	34,142	110,223	***	8,662	***	0,578	
36	PKTF	Cg	25,672	35,024	99,104	***	8,884	***	1,730	
37	PCATF	Cg	0,833	29,858	12,806	***	17,082	***	4,396	**
38	PMGTF	Cg	2,992	31,245	57,238	***	8,580	***	4,301	**
39	PH	-	7,081	3,312	406,141	***	2,836		1,136	

3 - ANALYSES DE VARIANCE

(pour la signification des sigles, cf. l'annexe 1)

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 19 mars 1984 Parametre : H6 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	4.650	5.000	4.850	6.500	6.000	4.950
X 12k	4.150	4.850	6.350	3.950	6.050	8.000
X 13k	5.900	6.400	6.650	6.650	5.650	5.800
X 14k	4.700	5.500	5.900	4.100	6.850	5.800
X 21k	4.550	5.250	6.800	5.350	6.650	5.300
X 22k	5.000	6.650	6.200	5.600	6.150	7.050
X 23k	6.200	5.500	5.300	5.500	6.150	5.950
X 24k	5.050	6.200	5.300	5.500	6.650	6.600
X 31k	5.800	4.950	5.150	6.450	4.700	5.750
X 32k	6.300	6.600	7.550	5.250	7.850	5.100
X 33k	4.350	6.050	5.300	5.050	7.000	4.450
X 34k	4.700	5.800	5.300	4.950	7.150	6.300

Moyennes et ecarts relatifs :

X ... = 5.743

X 1.. = 5.633 (-1.91) X 2.. = 5.852 (1.90) X 3.. = 5.744 (0.01)

X .1. = 5.481 (-4.57) X .2. = 6.036 (5.10) X .3. = 5.769 (0.46) X .4. = 5.686 (-0.99)

X ..1 = 5.112 (-10.98) X ..2 = 5.729 (-0.24) X ..3 = 5.887 (2.52) X ..4 = 5.404 (-5.90)
X ..5 = 6.404 (11.51) X ..6 = 5.921 (3.10)

X 11. = 5.325 (-7.28) X 12. = 5.558 (-3.22) X 13. = 6.175 (7.52) X 14. = 5.475 (-4.67)
X 21. = 5.650 (-1.62) X 22. = 6.108 (6.36) X 23. = 5.767 (0.41) X 24. = 5.883 (2.44)
X 31. = 5.467 (-4.81) X 32. = 6.442 (12.16) X 33. = 5.367 (-6.55) X 34. = 5.700 (-0.75)

Variances et coefficients de variations

Se1 = 0.538 Se2 = 1.594 Se3 = 1.416
cv1 = 12.772 cv2 = 21.987 cv3 = 20.723

SA = 0.574 SD = 1.905 SB = 4.810

Tests F :

Fa = 1.067 Fd = 1.195 Fad = 1.081

Test de BARTLETT :

Ki2 = 3.309
on accepte l'hyppothese de l'egalite des variances residuelles Se = 1.305 cv = 19.893

F'a = 0.440 F'd = 1.459 F'ad = 1.173

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 21 mars 1984 Parametre : HB Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	6.750	8.600	7.250	9.000	9.250	7.750
X 12k	5.400	6.850	10.050	5.600	7.950	9.950
X 13k	8.550	8.600	9.350	9.250	7.950	8.950
X 14k	7.100	6.950	7.050	6.450	9.200	8.150
X 21k	5.950	7.050	7.350	8.400	8.900	6.950
X 22k	6.600	9.700	9.250	9.450	9.000	8.700
X 23k	10.000	7.700	7.250	8.500	9.500	8.750
X 24k	8.200	8.500	8.250	8.800	8.100	9.550
X 31k	8.550	7.550	7.800	9.150	6.700	7.450
X 32k	8.600	8.600	9.950	8.450	10.000	7.750
X 33k	6.600	8.150	8.600	9.350	9.050	7.300
X 34k	7.700	8.900	7.300	7.800	9.600	9.750

Moyennes et ecarts relatifs :

X ... = 8.236

X 1.. =	7.998 (-2.89)	X 2.. =	8.350 (1.38)	X 3.. =	8.360 (1.51)			
X .1. =	7.800 (-5.30)	X .2. =	8.436 (2.43)	X .3. =	8.522 (3.47)	X .4. =	8.186 (-0.61)	
X ..1 =	7.500 (-8.94)	X ..2 =	8.096 (-1.70)	X ..3 =	8.288 (0.62)	X ..4 =	8.350 (1.38)	
X ..5 =	8.767 (6.44)	X ..6 =	8.417 (2.19)					
X 11. =	8.100 (-1.65)	X 12. =	7.633 (-7.32)	X 13. =	8.775 (6.54)	X 14. =	7.483 (-9.14)	
X 21. =	7.433 (-9.75)	X 22. =	8.783 (6.64)	X 23. =	8.617 (4.62)	X 24. =	8.567 (4.01)	
X 31. =	7.867 (-4.49)	X 32. =	8.892 (7.96)	X 33. =	8.175 (-0.74)	X 34. =	8.508 (3.31)	

Variances et coefficients de variations

Se1 =	1.127	Se2 =	2.648	Se3 =	2.272
cv1 =	12.888	cv2 =	19.757	cv3 =	18.303
SA =	2.044	SD =	3.775	SB =	4.278

Tests F :

Fa =	1.814	Fd =	1.426	Fad =	1.581

Test de BARTLETT :

Ki2 = 2.035
on accepte l'hyppothese de l'egalite des variances residuelles Se = 2.167 cv = 17.872

F'a =	0.943	F'd =	1.742	F'ad =	1.659

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 23 mars 1984 Parametre : H10 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	8.150	9.150	8.300	9.300	9.500	8.400
X 12k	6.500	8.350	11.050	7.100	9.150	10.750
X 13k	9.550	9.200	10.700	9.950	8.750	9.250
X 14k	7.650	7.400	8.550	7.000	10.200	8.800
X 21k	7.950	7.700	8.400	8.850	9.150	7.650
X 22k	7.900	10.250	10.150	9.850	10.250	9.800
X 23k	10.850	8.350	8.500	9.550	10.100	9.300
X 24k	8.600	8.850	9.000	9.200	9.100	9.950
X 31k	9.350	8.900	8.450	9.900	7.000	8.100
X 32k	9.450	9.700	11.050	8.850	11.050	8.450
X 33k	7.650	8.900	9.150	10.050	9.650	8.050
X 34k	8.900	9.300	8.450	8.950	10.450	10.200

Moyennes et ecarts relatifs :

X ... = 9.054

X 1.. = 8.862 (-2.12) X 2.. = 9.135 (0.90) X 3.. = 9.165 (1.22)

X .1. = 8.567 (-5.38) X .2. = 9.425 (4.10) X .3. = 9.306 (2.78) X .4. = 8.919 (-1.49)

X ..1 = 8.542 (-5.66) X ..2 = 8.838 (-2.39) X ..3 = 9.313 (2.85) X ..4 = 9.046 (-0.09)
X ..5 = 9.529 (5.25) X ..6 = 9.058 (0.05)

X 11. = 8.800 (-2.81) X 12. = 8.817 (-2.62) X 13. = 9.567 (5.66) X 14. = 8.267 (-8.70)
X 21. = 8.283 (-8.51) X 22. = 9.700 (7.13) X 23. = 9.442 (4.28) X 24. = 9.117 (0.69)
X 31. = 8.617 (-4.83) X 32. = 9.758 (7.78) X 33. = 8.908 (-1.61) X 34. = 9.375 (3.54)

Variances et coefficients de variations

Se1 = 1.275 Se2 = 2.731 Se3 = 1.615
cv1 = 12.473 cv2 = 18.252 cv3 = 14.038

SA = 1.333 SD = 5.478 SB = 2.890

Tests F :

Fa = 1.045 Fd = 2.006 Fad = 1.720

Test de BARTLETT :

Ki2 = 2.113
on accepte l'hyppothese de l'egalite des variances residuelles Se = 1.858 cv = 15.054

F'a = 0.717 F'd = 2.949 + F'ad = 1.495

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 26 mars 1984 Parametre : H13 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	8.700	10.700	10.050	11.000	10.700	9.550
X 12k	9.100	9.300	12.950	8.100	10.600	11.750
X 13k	11.250	10.150	11.800	10.800	9.550	10.650
X 14k	9.450	7.950	9.200	7.850	11.200	9.950
X 21k	9.800	10.200	10.350	11.000	9.900	9.150
X 22k	9.550	11.700	11.200	12.800	12.600	11.300
X 23k	12.050	9.700	10.400	11.100	11.000	10.350
X 24k	9.500	9.550	9.200	9.750	9.800	10.600
X 31k	12.050	10.550	10.300	11.950	8.450	9.550
X 32k	11.550	11.200	12.000	10.050	12.550	10.100
X 33k	8.700	9.700	10.300	10.750	10.500	9.950
X 34k	9.500	10.350	8.550	10.300	11.050	10.850

Moyennes et ecarts relatifs :

X ... = 10.356

X 1.. = 10.096 (-2.51) X 2.. = 10.523 (1.61) X 3.. = 10.450 (0.91)

X .1. = 10.219 (-1.32) X .2. = 11.022 (6.43) X .3. = 10.483 (1.23) X .4. = 9.700 (-6.34)

X ..1 = 10.100 (-2.47) X ..2 = 10.087 (-2.60) X ..3 = 10.525 (1.63) X ..4 = 10.454 (0.95)
X ..5 = 10.658 (2.92) X ..6 = 10.312 (-0.42)

X 11. = 10.117 (-2.31) X 12. = 10.300 (-0.54) X 13. = 10.700 (3.32) X 14. = 9.267 (-10.52)
X 21. = 10.067 (-2.80) X 22. = 11.525 (11.29) X 23. = 10.767 (3.96) X 24. = 9.733 (-6.01)
X 31. = 10.475 (1.15) X 32. = 11.242 (8.55) X 33. = 9.983 (-3.60) X 34. = 10.100 (-2.47)

Variances et coefficients de variations

Se1 = 1.849 Se2 = 3.077 Se3 = 2.053
cv1 = 13.130 cv2 = 16.939 cv3 = 13.836

SA = 2.505 SD = 10.909 SB = 1.292

Tests F :

Fa = 1.355 Fd = 3.545 + Fad = 1.198

Test de BARTLETT :

Ki2 = 1.077
on accepte l'hyppothese de l'egalite des variances residuelles Se = 2.295 cv = 14.630

F'a = 1.091 F'd = 4.752 ++ F'ad = 1.072

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 28 mars 1984 Parametre : H15 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	10.950	11.950	11.050	12.800	13.050	11.100
X 12k	10.800	11.000	15.350	8.750	11.900	13.450
X 13k	12.050	11.000	12.500	11.200	10.250	11.450
X 14k	9.650	8.200	9.700	8.050	12.000	9.950
X 21k	11.100	12.450	11.400	12.450	11.900	11.150
X 22k	11.400	13.850	12.150	16.250	15.550	12.750
X 23k	12.500	11.050	10.450	12.800	11.750	10.850
X 24k	10.250	9.750	9.750	10.250	10.700	10.900
X 31k	13.450	12.450	11.300	14.650	10.400	11.900
X 32k	14.000	13.500	13.250	11.200	14.550	11.650
X 33k	10.450	10.200	11.450	11.450	11.800	10.000
X 34k	10.250	11.100	9.000	10.950	11.600	11.100

Moyennes et ecarts relatifs :

X ... = 11.572

X 1.. = 11.173 (-3.45) X 2.. = 11.808 (2.04) X 3.. = 11.735 (1.41)

X .1. = 11.972 (3.46) X .2. = 12.853 (11.07) X .3. = 11.289 (-2.45) X .4. = 10.175 (-12.07)

X ..1 = 11.404 (-1.45) X ..2 = 11.375 (-1.70) X ..3 = 11.446 (-1.09) X ..4 = 11.733 (1.39)
X ..5 = 12.121 (4.74) X ..6 = 11.354 (-1.88)

X 11. = 11.817 (2.11) X 12. = 11.875 (2.62) X 13. = 11.408 (-1.42) X 14. = 9.592 (-17.11)
X 21. = 11.742 (1.46) X 22. = 13.658 (18.03) X 23. = 11.567 (-0.05) X 24. = 10.267 (-11.28)
X 31. = 12.358 (6.79) X 32. = 13.025 (12.55) X 33. = 10.892 (-5.88) X 34. = 10.667 (-7.83)

Variances et coefficients de variations

Se1 = 4.235 Se2 = 3.136 Se3 = 3.162
cv1 = 17.784 cv2 = 15.304 cv3 = 15.366

SA = 5.804 SD = 45.988 SB = 2.196

Tests F :

Fa = 1.370 Fd = 14.663+++ Fad = 1.096

Test de BARTLETT :

Ki2 = 0.368
on accepte l'hyppothese de l'egalite des variances residuelles Se = 3.350 cv = 15.817

F'a = 1.732 F'd = 13.727+++ F'ad = 1.035

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 30 mars 1984 Parametre : H17 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	12.700	13.650	13.250	15.600	15.200	13.700
X 12k	13.050	12.100	17.250	10.000	14.450	16.050
X 13k	12.700	11.650	13.000	12.450	10.500	12.700
X 14k	10.450	8.500	10.050	8.450	13.050	11.250
X 21k	13.600	14.450	13.000	14.550	13.250	13.850
X 22k	13.600	16.250	14.850	19.700	17.950	16.050
X 23k	14.050	12.450	12.250	14.350	12.550	12.900
X 24k	11.000	10.400	10.250	11.550	11.300	12.250
X 31k	15.550	15.050	13.300	16.700	12.650	14.100
X 32k	16.250	16.100	16.550	13.650	17.750	13.900
X 33k	10.950	11.450	12.500	12.650	12.700	11.000
X 34k	10.950	11.550	9.750	11.900	12.450	12.200

Moyennes et ecarts relatifs :

X ... = 13.191

X 1.. = 12.573 (-4.69) X 2.. = 13.600 (3.10) X 3.. = 13.400 (1.58)

X .1. = 14.119 (7.04) X .2. = 15.306 (16.03) X .3. = 12.378 (-6.16) X .4. = 10.961 (-16.90)

X ..1 = 12.904 (-2.17) X ..2 = 12.800 (-2.96) X ..3 = 13.000 (-1.45) X ..4 = 13.462 (2.06)
X ..5 = 13.650 (3.48) X ..6 = 13.329 (1.05)

X 11. = 14.017 (6.26) X 12. = 13.817 (4.74) X 13. = 12.167 (-7.77) X 14. = 10.292 (-21.98)
X 21. = 13.783 (4.49) X 22. = 16.400 (24.33) X 23. = 13.092 (-0.75) X 24. = 11.125 (-15.66)
X 31. = 14.558 (10.37) X 32. = 15.700 (19.02) X 33. = 11.875 (-9.98) X 34. = 11.467 (-13.07)

Variances et coefficients de variations

Se1 = 5.408 Se2 = 4.567 Se3 = 3.866
cv1 = 17.629 cv2 = 16.201 cv3 = 14.906

SA = 14.232 SD = 131.605 SB = 2.761

Tests F :

Fa = 2.632 Fd = 28.815+++ Fad = 1.579

Test de BARTLETT :

Ki2 = 0.459
on accepte l'hyppothese de l'egalite des variances residuelles Se = 4.338 cv = 15.789

F'a = 3.281 + F'd = 30.339+++ F'ad = 1.407

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 02 avril 1984 Parametre : H20 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	16.200	15.700	16.350	19.650	19.450	19.850
X 12k	16.200	15.250	22.450	13.150	19.550	20.450
X 13k	14.500	13.150	14.800	15.050	12.900	15.800
X 14k	11.300	8.900	10.400	9.000	13.550	12.450
X 21k	17.400	18.750	16.000	17.900	17.100	18.200
X 22k	17.850	22.250	19.650	25.950	23.300	21.000
X 23k	14.950	16.100	13.950	15.900	14.850	15.050
X 24k	11.900	10.750	12.500	12.000	12.900	13.600
X 31k	20.550	18.400	16.850	22.050	17.850	18.000
X 32k	20.600	21.000	22.000	18.400	22.950	19.150
X 33k	13.800	13.000	15.450	14.750	15.950	13.650
X 34k	14.150	14.950	11.950	13.450	13.500	14.650

Moyennes et ecarts relatifs :

X ... = 16.290

X 1.. = 15.252 (-6.37) X 2.. = 16.658 (2.26) X 3.. = 16.960 (4.11)

X .1. = 18.125 (11.26) X .2. = 20.064 (23.16) X .3. = 14.644 (-10.10) X .4. = 12.328 (-24.32)

X ..1 = 15.783 (-3.11) X ..2 = 15.683 (-3.73) X ..3 = 16.029 (-1.60) X ..4 = 16.437 (0.90)
X ..5 = 16.987 (4.28) X ..6 = 16.821 (3.26)

X 11. = 17.867 (9.68) X 12. = 17.842 (9.52) X 13. = 14.367 (-11.81) X 14. = 10.933 (-32.88)
X 21. = 17.558 (7.78) X 22. = 21.667 (33.00) X 23. = 15.133 (-7.10) X 24. = 12.275 (-24.65)
X 31. = 18.950 (16.33) X 32. = 20.683 (26.97) X 33. = 14.433 (-11.40) X 34. = 13.775 (-15.44)

Variances et coefficients de variations

Se1 = 9.638 Se2 = 6.216 Se3 = 6.109
cv1 = 19.058 cv2 = 15.305 cv3 = 15.172

SA = 39.898 SD = 432.198 SB = 7.118

Tests F :

Fa = 4.139 + Fd = 69.530+++ Fad = 2.198

Test de BARTLETT :

Ki2 = 0.884
on accepte l'hyppothese de l'egalite des variances residuelles Se = 6.780 cv = 15.984

F'a = 5.885 ++ F'd = 63.747+++ F'ad = 1.980

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 04 avril 1984 Parametre : H22 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	20.500	16.650	19.300	23.500	23.400	23.450
X 12k	18.800	18.550	27.150	14.900	22.300	23.100
X 13k	16.750	14.350	16.200	17.050	14.950	16.800
X 14k	12.550	9.550	10.050	9.350	13.600	12.650
X 21k	20.250	22.950	19.250	21.000	20.950	22.000
X 22k	20.250	25.950	23.400	31.400	27.800	25.700
X 23k	16.400	18.350	15.800	17.000	17.400	16.850
X 24k	12.150	11.200	14.850	12.700	17.150	15.300
X 31k	24.550	19.600	20.250	25.450	21.550	20.650
X 32k	24.250	24.400	25.150	21.200	27.500	23.150
X 33k	15.900	14.650	17.250	18.250	18.800	16.300
X 34k	18.800	18.100	12.900	14.850	14.450	16.350

Moyennes et ecarts relatifs :

X ... = 18.831

X 1.. = 17.310 (-8.07) X 2.. = 19.419 (3.12) X 3.. = 19.762 (4.95)

X .1. = 21.403 (13.66) X .2. = 23.608 (25.37) X .3. = 16.614 (-11.77) X .4. = 13.697 (-27.26)

X ..1 = 18.429 (-2.13) X ..2 = 17.858 (-5.16) X ..3 = 18.462 (-1.95) X ..4 = 18.887 (0.30)
X ..5 = 19.987 (6.14) X ..6 = 19.358 (2.80)

X 11. = 21.133 (12.23) X 12. = 20.800 (10.46) X 13. = 16.017 (-14.94) X 14. = 11.292 (-40.04)
X 21. = 21.067 (11.87) X 22. = 25.750 (36.75) X 23. = 16.967 (-9.90) X 24. = 13.892 (-26.23)
X 31. = 22.008 (16.88) X 32. = 24.275 (28.91) X 33. = 16.858 (-10.47) X 34. = 15.908 (-15.52)

Variances et coefficients de variations

Se1 = 13.678 Se2 = 9.581 Se3 = 11.901
cv1 = 19.641 cv2 = 16.438 cv3 = 18.320

SA = 84.608 SD = 728.499 SB = 13.738

Tests F :

Fa = 6.185 + Fd = 76.037+++ Fad = 1.785

Test de BARTLETT :

Ki2 = 0.399
on accepte l'hyppothese de l'egalite des variances residuelles Se = 11.592 cv = 18.080

F'a = 7.299 ++ F'd = 62.847+++ F'ad = 1.833

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : H24 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	24.250	19.950	22.450	27.550	27.300	29.000
X 12k	22.150	23.350	30.250	18.400	26.100	26.250
X 13k	18.350	16.600	19.150	21.500	17.250	19.250
X 14k	12.900	10.200	10.400	10.150	16.750	12.850
X 21k	24.550	27.050	23.100	24.400	24.000	25.750
X 22k	24.550	30.550	26.650	38.700	33.650	31.850
X 23k	17.650	21.750	19.250	18.800	19.350	19.350
X 24k	12.100	13.450	18.150	13.850	20.450	17.050
X 31k	29.450	21.950	23.900	29.950	26.000	25.350
X 32k	29.900	29.700	29.250	24.800	33.050	26.450
X 33k	18.800	17.000	19.550	20.650	20.600	19.750
X 34k	22.050	20.450	16.000	16.450	18.350	19.250

Moyennes et ecarts relatifs :

X ... = 22.042

X 1.. = 20.098 (-8.82) X 2.. = 22.750 (3.21) X 3.. = 23.277 (5.60)

X .1. = 25.331 (14.92) X .2. = 28.089 (27.44) X .3. = 19.144 (-13.14) X .4. = 15.603 (-29.21)

X ..1 = 21.392 (-2.95) X ..2 = 21.000 (-4.73) X ..3 = 21.508 (-2.42) X ..4 = 22.100 (0.26)
X ..5 = 23.571 (6.94) X ..6 = 22.679 (2.89)

X 11. = 25.083 (13.80) X 12. = 24.417 (10.78) X 13. = 18.683 (-15.24) X 14. = 12.208 (-44.61)
X 21. = 24.808 (12.55) X 22. = 30.992 (40.60) X 23. = 19.358 (-12.17) X 24. = 15.842 (-28.13)
X 31. = 26.100 (18.41) X 32. = 28.858 (30.93) X 33. = 19.392 (-12.02) X 34. = 18.758 (-14.90)

Variances et coefficients de variations

Se1 = 17.989 Se2 = 12.819 Se3 = 18.361
cv1 = 19.242 cv2 = 16.244 cv3 = 19.440

SA = 139.348 SD = 1166.866 SB = 21.793

Tests F :

Fa = 7.746 ++ Fd = 91.027+++ Fad = 2.403

Test de BARTLETT :

Ki2 = 0.629
on accepte l'hyppothese de l'egalite des variances residuelles Se = 16.782 cv = 18.586

F'a = 8.304+++ F'd = 69.532+++ F'ad = 2.629 +

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 21 mars 1984 Parametre : V6-8 Unite : Cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.050	1.800	1.200	1.250	1.625	1.400
X 12k	0.625	1.000	1.850	0.825	0.950	0.975
X 13k	1.325	1.100	1.350	1.300	1.150	1.575
X 14k	1.200	0.725	0.575	1.175	1.175	1.175
X 21k	0.700	0.900	0.275	1.525	1.125	0.825
X 22k	0.800	1.525	1.525	1.925	1.425	0.825
X 23k	1.900	1.100	0.975	1.500	1.675	1.400
X 24k	1.575	1.150	1.475	1.650	0.725	1.475
X 31k	1.375	1.300	1.325	1.350	1.000	0.850
X 32k	1.150	1.000	1.200	1.600	1.075	1.325
X 33k	1.125	1.050	1.650	2.150	1.025	1.425
X 34k	1.500	1.550	1.000	1.425	1.225	1.725

Moyennes et ecarts relatifs :

X ... = 1.247

X 1.. = 1.182 (-5.15) X 2.. = 1.249 (0.19) X 3.. = 1.308 (4.96)

X .1. = 1.160 (-6.96) X .2. = 1.200 (-3.73) X .3. = 1.376 (10.42) X .4. = 1.250 (0.28)

X ..1 = 1.194 (-4.23) X ..2 = 1.183 (-5.07) X ..3 = 1.200 (-3.73) X ..4 = 1.473 (18.16)
X ..5 = 1.181 (-5.24) X ..6 = 1.248 (0.11)

X 11. = 1.387 (11.31) X 12. = 1.037 (-16.77) X 13. = 1.300 (4.29) X 14. = 1.004 (-19.44)
X 21. = 0.892 (-28.47) X 22. = 1.337 (7.30) X 23. = 1.425 (14.32) X 24. = 1.342 (7.63)
X 31. = 1.200 (-3.73) X 32. = 1.225 (-1.73) X 33. = 1.404 (12.65) X 34. = 1.404 (12.65)

Variances et coefficients de variations

Se1 = 0.178 Se2 = 0.248 Se3 = 0.207
cv1 = 33.824 cv2 = 39.957 cv3 = 36.532

SA = 0.191 SD = 0.319 SB = 0.309

Tests F :

Fa = 1.074 Fd = 1.286 Fad = 2.325

Test de BARTLETT :

Ki2 = 0.338
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.213 cv = 37.032

F'a = 0.896 F'd = 1.497 F'ad = 2.263 +

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 23 mars 1984 Parametre : V8-10 Unite : Cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.700	0.275	0.525	0.150	0.125	0.325
X 12k	0.550	0.750	0.500	0.750	0.600	0.400
X 13k	0.500	0.300	0.675	0.350	0.400	0.150
X 14k	0.275	0.225	0.750	0.275	0.500	0.325
X 21k	1.000	0.325	0.525	0.225	0.125	0.350
X 22k	0.650	0.275	0.450	0.200	0.625	0.550
X 23k	0.425	0.325	0.625	0.525	0.300	0.275
X 24k	0.200	0.175	0.375	0.200	0.500	0.200
X 31k	0.400	0.675	0.325	0.375	0.150	0.325
X 32k	0.425	0.550	0.550	0.200	0.525	0.350
X 33k	0.525	0.375	0.275	0.350	0.300	0.375
X 34k	0.600	0.200	0.575	0.575	0.425	0.225

Moyennes et ecarts relatifs :

X ... = 0.409

X 1.. = 0.432 (5.69) X 2.. = 0.393 (-3.99) X 3.. = 0.402 (-1.70)

X .1. = 0.383 (-6.28) X .2. = 0.494 (20.88) X .3. = 0.392 (-4.24) X .4. = 0.367 (-10.36)

X ..1 = 0.521 (27.33) X ..2 = 0.371 (-9.34) X ..3 = 0.512 (25.30) X ..4 = 0.348 (-14.94)
X ..5 = 0.381 (-6.79) X ..6 = 0.321 (-21.56)

X 11. = 0.350 (-14.43) X 12. = 0.592 (44.65) X 13. = 0.396 (-3.23) X 14. = 0.392 (-4.24)
X 21. = 0.425 (3.90) X 22. = 0.458 (12.05) X 23. = 0.412 (0.85) X 24. = 0.275 (-32.77)
X 31. = 0.375 (-8.32) X 32. = 0.433 (5.94) X 33. = 0.367 (-10.36) X 34. = 0.433 (5.94)

Variances et coefficients de variations

Se1 = 0.031 Se2 = 0.085 Se3 = 0.051
cv1 = 43.331 cv2 = 71.220 cv3 = 55.105

SA = 0.021 SD = 0.121 SB = 0.177

Tests F :

Fa = 0.654 Fd = 1.421 Fad = 1.123

Test de BARTLETT :

Ki2 = 2.933
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.057 cv = 58.147

F'a = 0.363 F'd = 2.132 F'ad = 1.009

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 26 mars 1984 Parametre : V10-13 Unite : Cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.183	0.517	0.583	0.567	0.400	0.383
X 12k	0.867	0.317	0.633	0.333	0.483	0.333
X 13k	0.567	0.317	0.367	0.283	0.267	0.467
X 14k	0.600	0.183	0.217	0.283	0.333	0.383
X 21k	0.617	0.833	0.650	0.717	0.250	0.500
X 22k	0.550	0.483	0.350	0.983	0.783	0.500
X 23k	0.400	0.450	0.633	0.517	0.300	0.350
X 24k	0.300	0.233	0.067	0.183	0.233	0.217
X 31k	0.900	0.550	0.617	0.683	0.483	0.483
X 32k	0.700	0.500	0.317	0.400	0.500	0.550
X 33k	0.350	0.267	0.383	0.233	0.283	0.633
X 34k	0.200	0.350	0.033	0.450	0.200	0.217

Moyennes et ecarts relatifs :

X ... = 0.434

X 1.. = 0.411 (-5.28) X 2.. = 0.462 (6.56) X 3.. = 0.428 (-1.28)

X .1. = 0.551 (26.93) X .2. = 0.532 (22.67) X .3. = 0.393 (-9.55) X .4. = 0.260 (-40.05)

X ..1 = 0.519 (19.68) X ..2 = 0.417 (-4.00) X ..3 = 0.404 (-6.88) X ..4 = 0.469 (8.16)
X ..5 = 0.376 (-13.28) X ..6 = 0.418 (-3.68)

X 11. = 0.439 (1.12) X 12. = 0.494 (13.92) X 13. = 0.378 (-12.96) X 14. = 0.333 (-23.20)
X 21. = 0.594 (36.96) X 22. = 0.608 (40.16) X 23. = 0.442 (1.76) X 24. = 0.206 (-52.64)
X 31. = 0.619 (42.72) X 32. = 0.494 (13.92) X 33. = 0.358 (-17.44) X 34. = 0.242 (-44.32)

Variances et coefficients de variations

Se1 = 0.040 Se2 = 0.055 Se3 = 0.051
cv1 = 46.035 cv2 = 53.878 cv3 = 51.864

SA = 0.033 SD = 0.663 SB = 0.064

Tests F :

Fa = 0.822 Fd = 12.131+++ Fad = 1.374

Test de BARTLETT :

Ki2 = 0.291
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.050 cv = 51.422

F'a = 0.658 F'd = 13.318+++ F'ad = 1.397

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 28 mars 1984 Parametre : V13-15 Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.125	0.625	0.500	0.900	1.175	0.775
X 12k	0.850	0.850	1.200	0.325	0.650	0.850
X 13k	0.400	0.425	0.350	0.200	0.350	0.400
X 14k	0.100	0.125	0.250	0.100	0.400	0.000
X 21k	0.650	1.125	0.525	0.725	1.000	1.000
X 22k	0.925	1.075	0.475	1.725	1.475	0.725
X 23k	0.225	0.675	0.025	0.850	0.375	0.250
X 24k	0.375	0.100	0.275	0.250	0.450	0.150
X 31k	0.700	0.950	0.500	1.350	0.975	1.175
X 32k	1.225	1.150	0.625	0.575	1.000	0.775
X 33k	0.875	0.250	0.575	0.350	0.650	0.025
X 34k	0.375	0.375	0.225	0.325	0.275	0.125

Moyennes et ecarts relatifs ;

X ... = 0.608

X 1.. =	0.539 (-11.42)	X 2.. =	0.643 (5.71)	X 3.. =	0.643 (5.71)			
X .1. =	0.876 (44.15)	X .2. =	0.915 (50.54)	X .3. =	0.403 (-33.75)	X .4. =	0.238 (-60.94)	
X ..1 =	0.652 (7.25)	X ..2 =	0.644 (5.88)	X ..3 =	0.460 (-24.27)	X ..4 =	0.640 (5.20)	
X ..5 =	0.731 (20.27)	X ..6 =	0.521 (-14.33)					
X 11. =	0.850 (39.81)	X 12. =	0.788 (29.53)	X 13. =	0.354 (-41.75)	X 14. =	0.163 (-73.27)	
X 21. =	0.838 (37.75)	X 22. =	1.067 (75.44)	X 23. =	0.400 (-34.21)	X 24. =	0.267 (-56.14)	
X 31. =	0.942 (54.88)	X 32. =	0.892 (46.66)	X 33. =	0.454 (-25.30)	X 34. =	0.283 (-53.40)	

Variances et coefficients de variations

Se1 =	0.157	Se2 =	0.071	Se3 =	0.153
cv1 =	65.272	cv2 =	43.709	cv3 =	64.395
SA =	0.174	SD =	4.150	SB =	0.234

Tests F :

Fa =	1.102	Fd =	58.767+++	Fad =	0.404

Test de BARTLETT :

Ki2 = 2.839
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.132 cv = 59.645

F'a =	1.320	F'd =	31.559+++	F'ad =	0.470

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 30 mars 1984 Parametre : V15-17 Unite : Cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.875	0.850	1.100	1.400	1.075	1.300
X 12k	1.125	0.550	0.950	0.625	1.275	1.300
X 13k	0.325	0.325	0.250	0.625	0.125	0.625
X 14k	0.400	0.150	0.175	0.200	0.525	0.650
X 21k	1.250	1.000	0.800	1.050	0.675	1.350
X 22k	1.100	1.200	1.350	1.725	1.200	1.650
X 23k	0.775	0.700	0.900	0.775	0.400	1.025
X 24k	0.375	0.325	0.250	0.650	0.300	0.675
X 31k	1.050	1.300	1.000	1.025	1.125	1.100
X 32k	1.125	1.300	1.650	1.225	1.600	1.125
X 33k	0.250	0.625	0.525	0.600	0.450	0.500
X 34k	0.350	0.225	0.375	0.475	0.425	0.550

Moyennes et ecarts relatifs :

X ... = 0.809

X 1.. =	0.700 (-13.51)	X 2.. =	0.896 (10.68)	X 3.. =	0.832 (2.83)			
X .1. =	1.074 (32.65)	X .2. =	1.226 (51.52)	X .3. =	0.544 (-32.73)	X .4. =	0.393 (-51.44)	
X ..1 =	0.750 (-7.34)	X ..2 =	0.713 (-11.97)	X ..3 =	0.777 (-3.99)	X ..4 =	0.865 (6.82)	
X ..5 =	0.765 (-5.53)	X ..6 =	0.988 (22.01)					
X 11. =	1.100 (35.91)	X 12. =	0.971 (19.95)	X 13. =	0.379 (-53.15)	X 14. =	0.350 (-56.76)	
X 21. =	1.021 (26.13)	X 22. =	1.371 (69.37)	X 23. =	0.763 (-5.79)	X 24. =	0.429 (-46.98)	
X 31. =	1.100 (35.91)	X 32. =	1.337 (65.25)	X 33. =	0.492 (-39.25)	X 34. =	0.400 (-50.58)	

Variances et coefficients de variations

Se1 =	0.152	Se2 =	0.065	Se3 =	0.059
cv1 =	48.138	cv2 =	31.402	cv3 =	29.956
SA =	0.479	SD =	5.847	SB =	0.244

Tests F :

Fa =	3.156	Fd =	90.513+++	Fad =	3.528 ++

Test de BARTLETT :

Ki2 = 4.024
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.077 cv = 34.347

F'a =	6.200 ++	F'd =	75.656+++	F'ad =	2.684 +

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 02 avril 1984 Parametre : V17-20 Unite : Cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.167	0.683	1.033	1.350	1.417	2.050
X 12k	1.050	1.050	1.733	1.050	1.700	1.467
X 13k	0.600	0.500	0.600	0.867	0.800	1.033
X 14k	0.283	0.133	0.117	0.183	0.167	0.400
X 21k	1.267	1.433	1.000	1.117	1.283	1.450
X 22k	1.417	2.000	1.600	2.083	1.783	1.650
X 23k	0.300	1.217	0.567	0.517	0.767	0.717
X 24k	0.300	0.117	0.750	0.150	0.533	0.450
X 31k	1.667	1.117	1.183	1.783	1.733	1.300
X 32k	1.450	1.633	1.817	1.583	1.733	1.750
X 33k	0.950	0.517	0.983	0.700	1.083	0.883
X 34k	1.067	1.133	0.733	0.517	0.350	0.817

Moyennes et ecarts relatifs :

X ... = 1.033

X 1.. = 0.893 (-13.56) X 2.. = 1.019 (-1.32) X 3.. = 1.187 (14.88)

X .1. = 1.335 (29.24) X .2. = 1.586 (53.53) X .3. = 0.756 (-26.87) X .4. = 0.456 (-55.90)

X ..1 = 0.960 (-7.10) X ..2 = 0.961 (-6.97) X ..3 = 1.010 (-2.26) X ..4 = 0.992 (-4.01)
X ..5 = 1.112 (7.69) X ..6 = 1.164 (12.66)

X 11. =	1.283 (24.22)	X 12. =	1.342 (29.87)	X 13. =	0.733 (-29.02)	X 14. =	0.214 (-79.30)
X 21. =	1.258 (21.80)	X 22. =	1.756 (69.93)	X 23. =	0.681 (-34.13)	X 24. =	0.383 (-62.89)
X 31. =	1.464 (41.70)	X 32. =	1.661 (60.79)	X 33. =	0.853 (-17.45)	X 34. =	0.769 (-25.52)

Variances et coefficients de variations

Se1 =	0.187	Se2 =	0.133	Se3 =	0.130
cv1 =	41.832	cv2 =	35.247	cv3 =	34.951

SA = 1.042 SD = 9.692 SB = 0.174

Tests F :

Fa = 5.580 + Fd = 73.095+++ Fad = 1.891

Test de BARTLETT :

Ki2 = 0.536
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.141 cv = 36.377

F'a = 7.379 ++ F'd = 68.623+++ F'ad = 1.746

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 04 avril 1984 Parametre : V20-22 Unite : Cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	2.150	0.475	1.475	1.925	1.975	1.800
X 12k	1.300	1.650	2.350	0.875	1.375	1.325
X 13k	1.125	0.600	0.700	1.000	1.025	0.500
X 14k	0.625	0.325	-0.175	0.175	0.025	0.100
X 21k	1.425	2.100	1.625	1.550	1.925	1.900
X 22k	1.200	1.850	1.875	2.725	2.250	2.350
X 23k	0.725	1.125	0.925	0.550	1.275	0.900
X 24k	0.125	0.225	1.175	0.350	2.125	0.850
X 31k	2.000	0.600	1.700	1.700	1.850	1.325
X 32k	1.825	1.700	1.575	1.400	2.275	2.000
X 33k	1.050	0.825	0.900	1.750	1.425	1.325
X 34k	2.325	1.575	0.475	0.700	0.475	0.850

Moyennes et ecarts relatifs :

X ... = 1.270

X 1.. =	1.029 (-18.97)	X 2.. =	1.380 (8.67)	X 3.. =	1.401 (10.31)			
X .1. =	1.639 (29.03)	X .2. =	1.772 (39.53)	X .3. =	0.985 (-22.47)	X .4. =	0.685 (-46.09)	
X ..1 =	1.323 (4.16)	X ..2 =	1.087 (-14.38)	X ..3 =	1.217 (-4.21)	X ..4 =	1.225 (-3.55)	
X ..5 =	1.500 (18.10)	X ..6 =	1.269 (-0.11)					
X 11. =	1.633 (28.59)	X 12. =	1.479 (16.46)	X 13. =	0.825 (-35.05)	X 14. =	0.179 (-85.89)	
X 21. =	1.754 (38.11)	X 22. =	2.042 (60.74)	X 23. =	0.917 (-27.83)	X 24. =	0.808 (-36.36)	
X 31. =	1.529 (20.39)	X 32. =	1.796 (41.39)	X 33. =	1.212 (-4.54)	X 34. =	1.067 (-16.02)	

Variances et coefficients de variations

Se1 =	0.569	Se2 =	0.278	Se3 =	0.520
cv1 =	59.410	cv2 =	41.497	cv3 =	56.767
SA =	2.096	SD =	9.747	SB =	0.451

Tests F :

Fa =	3.680	Fd =	35.085+++	Fad =	1.285

Test de BARTLETT :

Ki2 = 2.039
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.463 cv = 53.564

F'a =	4.528 +	F'd =	21.058+++	F'ad =	1.443

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : V22-24 Unite : Cm/j

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.875	1.650	1.575	2.025	1.950	2.775
X 12k	1.675	2.400	1.550	1.750	1.900	1.575
X 13k	0.800	1.125	1.475	2.225	1.150	1.225
X 14k	0.175	0.325	0.175	0.400	1.575	0.100
X 21k	2.150	2.050	1.925	1.700	1.525	1.875
X 22k	2.150	2.300	1.625	3.650	2.925	3.075
X 23k	0.625	1.700	1.725	0.900	0.975	1.250
X 24k	-0.025	1.125	1.650	0.575	1.650	0.875
X 31k	2.450	1.175	1.825	2.250	2.225	2.350
X 32k	2.825	2.650	2.050	1.800	2.775	1.650
X 33k	1.450	1.175	1.150	1.200	0.900	1.725
X 34k	1.625	1.175	1.550	0.800	1.950	1.450

Moyennes et ecarts relatifs :

X ... = 1.606

X 1.. = 1.394 (-13.19) X 2.. = 1.666 (3.74) X 3.. = 1.757 (9.45)

X .1. = 1.964 (22.32) X .2. = 2.240 (39.53) X .3. = 1.265 (-21.19) X .4. = 0.953 (-40.66)

X ..1 = 1.481 (-7.74) X ..2 = 1.571 (-2.16) X ..3 = 1.523 (-5.15) X ..4 = 1.606 (0.04)
X ..5 = 1.792 (11.59) X ..6 = 1.660 (3.42)

X 11. = 1.975 (23.01) X 12. = 1.808 (12.63) X 13. = 1.333 (-16.96) X 14. = 0.458 (-71.45)
X 21. = 1.871 (16.52) X 22. = 2.621 (63.24) X 23. = 1.196 (-25.52) X 24. = 0.975 (-39.27)
X 31. = 2.046 (27.42) X 32. = 2.292 (42.73) X 33. = 1.267 (-21.11) X 34. = 1.425 (-11.25)

Variances et coefficients de variations

Se1 = 0.432 Se2 = 0.669 Se3 = 0.399

cv1 = 40.945 cv2 = 50.925 cv3 = 39.327
SA = 1.716 SD = 12.878 SB = 0.293

Tests F :

Fa = 3.970 Fd = 19.264+++ Fad = 2.714 +

Test de BARTLETT :

Ki2 = 1.418
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.478 cv = 43.079

F'a = 3.587 + F'd = 26.921+++ F'ad = 2.262 +

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 06 avril 1984 Parametre : NR Unite : .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.000	0.500	2.000	0.500	0.500	1.000
X 12k	1.000	0.000	2.000	0.500	0.500	0.000
X 13k	0.000	0.000	0.000	0.000	0.000	0.000
X 14k	0.000	0.000	0.000	0.000	0.000	0.000
X 21k	0.500	0.000	2.000	1.500	0.500	1.500
X 22k	0.500	0.000	1.000	0.000	0.000	1.000
X 23k	0.000	0.000	0.000	1.000	0.000	0.000
X 24k	0.000	0.000	0.000	0.000	0.500	0.000
X 31k	1.500	1.500	1.500	0.500	0.500	2.000
X 32k	0.500	0.000	0.000	0.000	1.000	1.000
X 33k	0.000	0.000	0.000	0.000	0.000	0.000
X 34k	0.000	0.000	0.000	0.000	0.000	0.000

Moyennes et ecarts relatifs :

X ... = 0.410

X 1.. =	0.396 (-3.39)	X 2.. =	0.417 (1.69)	X 3.. =	0.417 (1.69)			
X .1. =	1.056 (157.63)	X .2. =	0.500 (22.03)	X .3. =	0.056 (-86.44)	X .4. =	0.028 (-93.22)	
X ..1 =	0.417 (1.69)	X ..2 =	0.167 (-59.32)	X ..3 =	0.708 (72.88)	X ..4 =	0.333 (-18.64)	
X ..5 =	0.292 (-28.81)	X ..6 =	0.542 (32.20)					
X 11. =	0.917 (123.73)	X 12. =	0.667 (62.71)	X 13. =	0.000 (%-100)	X 14. =	0.000 (%-100)	
X 21. =	1.000 (144.07)	X 22. =	0.417 (1.69)	X 23. =	0.167 (-59.32)	X 24. =	0.083 (-79.66)	
X 31. =	1.250 (205.08)	X 32. =	0.417 (1.69)	X 33. =	0.000 (%-100)	X 34. =	0.000 (%-100)	

Variances et coefficients de variations

Se1 =	0.474	Se2 =	0.542	Se3 =	0.281
cv1 =	167.966	cv2 =	179.706	cv3 =	129.383
SA =	0.007	SD =	8.359	SB =	0.890

Tests F :

Fa =	0.015	Fd =	15.418+++	Fad =	0.881

Test de BARTLETT :

Ki2 = 2.484
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.387 cv = 151.881

F'a =	0.018	F'd =	21.585+++	F'ad =	0.640

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 28 mars 1984 Parametre : IC-P1 Unite : intensite

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.000	0.000	0.000	0.000	0.000	0.000
X 12k	0.000	0.500	0.000	1.000	0.000	0.000
X 13k	0.500	0.500	0.500	1.500	2.000	0.500
X 14k	0.000	1.000	1.500	1.500	0.000	0.000
X 21k	0.000	0.000	0.000	0.000	0.000	0.000
X 22k	0.000	0.500	0.000	0.000	0.500	0.000
X 23k	0.000	0.500	0.000	0.000	1.000	0.500
X 24k	1.000	0.000	1.500	2.000	1.500	0.000
X 31k	0.000	0.000	0.500	0.000	0.500	0.000
X 32k	0.000	0.000	0.000	0.000	0.000	0.000
X 33k	0.000	2.000	1.500	0.500	2.000	1.000
X 34k	0.000	0.000	1.000	0.000	2.000	0.500

Moyennes et ecarts relatifs :

X ... = 0.438

X 1.. =	0.458 (4.76)	X 2.. =	0.375 (-14.29)	X 3.. =	0.479 (9.52)			
X .1. =	0.056 (-87.30)	X .2. =	0.139 (-68.25)	X .3. =	0.806 (84.13)	X .4. =	0.750 (71.43)	
X ..1 =	0.125 (-71.43)	X ..2 =	0.417 (-4.76)	X ..3 =	0.542 (23.81)	X ..4 =	0.542 (23.81)	
X ..5 =	0.792 (80.95)	X ..6 =	0.208 (-52.38)					
X 11. =	0.000 (%-100)	X 12. =	0.250 (-42.86)	X 13. =	0.917 (109.52)	X 14. =	0.667 (52.38)	
X 21. =	0.000 (%-100)	X 22. =	0.167 (-61.90)	X 23. =	0.333 (-23.81)	X 24. =	1.000 (128.57)	
X 31. =	0.167 (-61.90)	X 32. =	0.000 (%-100)	X 33. =	1.167 (166.67)	X 34. =	0.583 (33.33)	

Variances et coefficients de variations

Se1 =	0.588	Se2 =	0.640	Se3 =	0.410
cv1 =	175.197	cv2 =	182.897	cv3 =	146.308
SA =	0.146	SD =	5.618	SB =	1.429

Tests F :

Fa =	0.248	Fd =	8.774 ++	Fad =	2.390

Test de BARTLETT :

Ki2 = 1.156
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.505 cv = 162.418

F'a =	0.289	F'd =	11.127+++	F'ad =	1.939

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 06 avril 1984 Parametre : IC-P2 Unite : .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.000	0.000	0.000	0.000	0.000	0.000
X 12k	0.000	0.000	0.000	0.500	0.000	0.000
X 13k	0.500	1.000	0.500	0.500	0.000	0.500
X 14k	1.000	1.500	2.000	1.000	1.500	2.000
X 21k	0.000	0.000	0.000	0.000	0.000	0.000
X 22k	0.000	0.000	0.000	0.000	0.000	0.000
X 23k	1.000	0.000	0.500	1.500	0.500	0.500
X 24k	1.000	0.500	0.500	1.500	0.000	1.000
X 31k	0.500	0.000	0.500	0.000	0.000	0.000
X 32k	0.000	0.000	0.000	0.000	0.000	0.000
X 33k	1.000	1.500	0.500	0.000	0.500	0.000
X 34k	0.000	0.500	0.000	0.000	1.000	1.000

Moyennes et ecarts relatifs :

X ... = 0.389

X 1.. =	0.521 (33.93)	X 2.. =	0.354 (-8.93)	X 3.. =	0.292 (-25.00)			
X .1. =	0.056 (-85.71)	X .2. =	0.028 (-92.86)	X .3. =	0.583 (50.00)	X .4. =	0.889 (128.57)	
X ..1 =	0.417 (7.14)	X ..2 =	0.417 (7.14)	X ..3 =	0.375 (-3.57)	X ..4 =	0.417 (7.14)	
X ..5 =	0.292 (-25.00)	X ..6 =	0.417 (7.14)					
X 11. =	0.000 (%-100)	X 12. =	0.083 (-78.57)	X 13. =	0.500 (28.57)	X 14. =	1.500 (285.71)	
X 21. =	0.000 (%-100)	X 22. =	0.000 (%-100)	X 23. =	0.667 (71.43)	X 24. =	0.750 (92.86)	
X 31. =	0.167 (-57.14)	X 32. =	0.000 (%-100)	X 33. =	0.583 (50.00)	X 34. =	0.417 (7.14)	

Variances et coefficients de variations

Se1 =	0.382	Se2 =	0.213	Se3 =	0.267
cv1 =	158.919	cv2 =	118.666	cv3 =	132.903
SA =	0.674	SD =	6.352	SB =	0.061

Tests F :

Fa =	1.764	Fd =	29.826+++	Fad =	4.047 ++

Test de BARTLETT :

Ki2 = 1.035
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.273 cv = 134.413

F'a =	2.465	F'd =	23.247+++	F'ad =	3.956 ++

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 28 mars 1984 Parametre : NF1 Unite : .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	3.500	4.000	4.000	4.000	4.000	4.000
X 12k	4.000	3.500	3.500	3.500	4.000	4.000
X 13k	3.500	3.500	3.000	4.000	3.500	4.000
X 14k	3.500	3.000	3.000	3.000	4.000	3.000
X 21k	4.000	4.000	4.500	4.000	4.000	4.000
X 22k	3.500	4.000	4.000	4.000	4.000	3.500
X 23k	3.500	3.500	3.500	4.000	3.500	4.000
X 24k	4.000	3.500	3.000	4.000	3.500	3.500
X 31k	4.000	4.000	4.000	4.500	4.000	4.000
X 32k	4.500	4.000	4.000	4.000	4.000	4.000
X 33k	3.500	4.000	4.000	4.000	4.000	3.500
X 34k	3.500	4.000	3.000	3.500	3.000	3.500

Moyennes et ecarts relatifs :

X ... = 3.757

X 1.. = 3.625 (-3.51) X 2.. = 3.792 (0.92) X 3.. = 3.854 (2.59)

X .1. = 4.028 (7.21) X .2. = 3.889 (3.51) X .3. = 3.694 (-1.66) X .4. = 3.417 (-9.06)

X ..1 = 3.750 (-0.18) X ..2 = 3.750 (-0.18) X ..3 = 3.625 (-3.51) X ..4 = 3.875 (3.14)
X ..5 = 3.792 (0.92) X ..6 = 3.750 (-0.18)

X 11. = 3.917 (4.25) X 12. = 3.750 (-0.18) X 13. = 3.583 (-4.62) X 14. = 3.250 (-13.49)
X 21. = 4.083 (8.69) X 22. = 3.833 (2.03) X 23. = 3.667 (-2.40) X 24. = 3.583 (-4.62)
X 31. = 4.083 (8.69) X 32. = 4.083 (8.69) X 33. = 3.833 (2.03) X 34. = 3.417 (-9.06)

Variances et coefficients de variations

Se1 = 0.149 Se2 = 0.175 Se3 = 0.184
cv1 = 10.261 cv2 = 11.150 cv3 = 11.411

SA = 0.674 SD = 2.525 SB = 0.157

Tests F :

Fa = 4.533 + Fd = 14.393+++ Fad = 0.592

Test de BARTLETT :

Ki2 = 0.159
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.175 cv = 11.139

F'a = 3.846 + F'd = 14.421+++ F'ad = 0.621

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 06 avril 1984 Parametre : NF2 Unite : .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	6.500	5.500	7.000	7.000	7.000	5.500
X 12k	6.000	6.000	6.000	6.500	6.500	6.000
X 13k	5.500	5.500	5.000	6.500	5.500	6.000
X 14k	4.500	4.500	3.500	4.500	4.000	4.000
X 21k	6.500	7.000	7.000	6.000	6.500	6.500
X 22k	6.500	6.000	7.000	7.000	6.000	6.000
X 23k	4.500	6.000	5.500	5.500	5.500	5.500
X 24k	4.000	5.000	5.500	5.000	6.500	5.500
X 31k	8.500	7.000	6.000	6.500	6.500	7.000
X 32k	7.500	6.500	6.500	6.500	7.000	6.500
X 33k	6.000	6.000	6.000	7.000	6.000	5.500
X 34k	6.500	6.500	5.500	4.500	6.000	5.500

Moyennes et ecarts relatifs :

X ... = 5.965

X 1.. = 5.604 (-6.05) X 2.. = 5.917 (-0.81) X 3.. = 6.375 (6.87)

X .1. = 6.639 (11.29) X .2. = 6.444 (8.03) X .3. = 5.722 (-4.07) X .4. = 5.056 (-15.25)

X ..1 = 6.042 (1.28) X ..2 = 5.958 (-0.12) X ..3 = 5.875 (-1.51) X ..4 = 6.042 (1.28)
X ..5 = 6.083 (1.98) X ..6 = 5.792 (-2.91)

X 11. = 6.417 (7.57) X 12. = 6.167 (3.38) X 13. = 5.667 (-5.01) X 14. = 4.167 (-30.15)
X 21. = 6.583 (10.36) X 22. = 6.417 (7.57) X 23. = 5.417 (-9.20) X 24. = 5.250 (-11.99)
X 31. = 6.917 (15.95) X 32. = 6.750 (13.15) X 33. = 6.083 (1.98) X 34. = 5.750 (-3.61)

Variances et coefficients de variations

Se1 = 1.249 Se2 = 0.596 Se3 = 0.593
cv1 = 18.732 cv2 = 12.940 cv3 = 12.910

SA = 7.215 SD = 18.840 SB = 0.307

Tests F :

Fa = 5.779 + Fd = 31.620+++ Fad = 2.143

Test de BARTLETT :

Ki2 = 2.539
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.713 cv = 14.155

F'a = 10.120+++ F'd = 26.424+++ F'ad = 1.782

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 06 avril 1984 Parametre : I-CHLO Unite : .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.000	0.000	0.000	0.000	0.000	0.000
X 12k	1.000	0.500	0.000	0.500	0.000	0.000
X 13k	1.000	1.500	1.500	1.000	0.500	1.500
X 14k	1.000	0.500	1.000	0.500	2.000	1.500
X 21k	0.000	0.000	0.000	0.000	0.000	0.500
X 22k	0.000	0.000	0.000	0.000	0.000	0.000
X 23k	1.000	1.000	1.000	2.000	1.000	0.500
X 24k	0.500	1.000	0.500	1.500	1.500	2.000
X 31k	0.000	0.000	0.000	0.000	0.000	0.000
X 32k	0.000	0.000	0.000	0.000	0.000	0.000
X 33k	1.000	1.500	1.000	1.000	1.000	0.000
X 34k	1.000	1.000	1.000	1.000	1.500	1.500

Moyennes et ecarts relatifs :

X ... = 0.583

X 1.. = 0.646 (10.71) X 2.. = 0.583 (-0.00) X 3.. = 0.521 (-10.71)

X .1. = 0.028 (-95.24) X .2. = 0.111 (-80.95) X .3. = 1.056 (80.95) X .4. = 1.139 (95.24)

X ..1 = 0.542 (-7.14) X ..2 = 0.583 (-0.00) X ..3 = 0.500 (-14.29) X ..4 = 0.625 (7.14)
X ..5 = 0.625 (7.14) X ..6 = 0.625 (7.14)

X 11. = 0.000 (%-100) X 12. = 0.333 (-42.86) X 13. = 1.167 (100.00) X 14. = 1.083 (85.71)
X 21. = 0.083 (-85.71) X 22. = 0.000 (%-100) X 23. = 1.083 (85.71) X 24. = 1.167 (100.00)
X 31. = 0.000 (%-100) X 32. = 0.000 (%-100) X 33. = 0.917 (57.14) X 34. = 1.167 (100.00)

Variances et coefficients de variations

Se1 = 0.204 Se2 = 0.515 Se3 = 0.208
cv1 = 77.460 cv2 = 123.001 cv3 = 78.159

SA = 0.188 SD = 12.759 SB = 0.067

Tests F :

Fa = 0.918 Fd = 24.784+++ Fad = 0.813

Test de BARTLETT :

Ki2 = 4.913
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.291 cv = 92.462

F'a = 0.645 F'd = 43.860+++ F'ad = 0.581

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 28 mars 1984 Parametre : IC-A1 Unite : intensite

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.000	1.500	0.000	0.500	0.000	0.500
X 12k	0.500	0.500	1.000	0.000	0.000	0.000
X 13k	0.000	0.000	0.000	0.000	0.000	0.000
X 14k	0.000	0.000	0.000	0.000	0.000	0.000
X 21k	1.500	1.000	1.000	1.000	1.000	0.500
X 22k	0.000	0.000	0.000	0.500	0.000	0.000
X 23k	0.000	0.000	0.000	0.000	0.000	0.000
X 24k	0.000	0.000	0.000	0.000	0.000	0.000
X 31k	1.500	0.000	0.000	0.000	0.000	0.000
X 32k	1.000	0.500	0.000	0.000	0.000	0.000
X 33k	0.000	0.000	0.000	0.000	0.000	0.000
X 34k	0.000	0.000	0.000	0.000	0.000	0.000

Moyennes et ecarts relatifs :

X ... = 0.194

X 1.. =	0.188 (-3.57)	X 2.. =	0.271 (39.29)	X 3.. =	0.125 (-35.71)			
X .1. =	0.556 (185.71)	X .2. =	0.222 (14.29)	X .3. =	0.000 (%-100)	X .4. =	0.000 (%-100)	
X ..1 =	0.375 (92.86)	X ..2 =	0.292 (50.00)	X ..3 =	0.167 (-14.29)	X ..4 =	0.167 (-14.29)	
X ..5 =	0.083 (-57.14)	X ..6 =	0.083 (-57.14)					
X 11. =	0.417 (114.29)	X 12. =	0.333 (71.43)	X 13. =	0.000 (%-100)	X 14. =	0.000 (%-100)	
X 21. =	1.000 (414.29)	X 22. =	0.083 (-57.14)	X 23. =	0.000 (%-100)	X 24. =	0.000 (%-100)	
X 31. =	0.250 (28.57)	X 32. =	0.250 (28.57)	X 33. =	0.000 (%-100)	X 34. =	0.000 (%-100)	

Variances et coefficients de variations

Se1 =	0.240	Se2 =	0.143	Se3 =	0.194
cv1 =	252.093	cv2 =	194.202	cv3 =	226.509
SA =	0.257	SD =	2.481	SB =	0.328

Tests F :

Fa = 1.069 Fd = 17.403+++ Fad = 3.091 +

Test de BARTLETT :

Ki2 = 0.840
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.188 cv = 223.216

F'a = 1.364 F'd = 13.172+++ F'ad = 3.183 ++

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 06 avril 1984 Parametre : IC-CA2 Unite : intensite

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	1.500	2.000	2.000	1.500	2.000	1.500
X 12k	1.000	1.000	2.000	0.500	1.000	1.000
X 13k	0.000	0.000	0.000	0.000	0.000	0.000
X 14k	0.000	0.000	0.000	0.000	1.000	0.000
X 21k	1.500	2.000	2.000	2.000	2.000	2.000
X 22k	0.500	0.500	2.000	1.500	0.500	2.000
X 23k	0.000	0.000	0.000	1.000	0.000	0.000
X 24k	0.000	0.000	0.000	0.000	0.000	0.000
X 31k	2.000	2.000	2.000	2.000	1.500	2.000
X 32k	0.500	2.000	1.000	1.500	1.500	1.000
X 33k	0.500	0.000	0.000	0.000	0.000	0.000
X 34k	0.000	0.000	0.000	0.000	0.000	0.000

Moyennes et ecarts relatifs :

X ... = 0.792

X 1.. = 0.750 (-5.26) X 2.. = 0.813 (2.63) X 3.. = 0.813 (2.63)

X .1. = 1.861 (135.09) X .2. = 1.167 (47.37) X .3. = 0.083 (-89.47) X .4. = 0.056 (-92.98)

X ..1 = 0.625 (-21.05) X ..2 = 0.792 (0.00) X ..3 = 0.917 (15.79) X ..4 = 0.833 (5.26)
X ..5 = 0.792 (0.00) X ..6 = 0.792 (0.00)

X 11. = 1.750 (121.05) X 12. = 1.083 (36.84) X 13. = 0.000 (%-100) X 14. = 0.167 (-78.95)
X 21. = 1.917 (142.11) X 22. = 1.167 (47.37) X 23. = 0.167 (-78.95) X 24. = 0.000 (%-100)
X 31. = 1.917 (142.11) X 32. = 1.250 (57.89) X 33. = 0.083 (-89.47) X 34. = 0.000 (%-100)

Variances et coefficients de variations

Se1 = 0.379 Se2 = 0.257 Se3 = 0.248
cv1 = 77.781 cv2 = 64.087 cv3 = 62.865

SA = 0.062 SD = 27.935 SB = 0.217

Tests F :

Fa = 0.165 Fd = 108.525+++ Fad = 0.439

Test de BARTLETT :

Ki2 = 0.744
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.274 cv = 66.149

F'a = 0.228 F'd = 101.863+++ F'ad = 0.397

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 06 avril 1984 Parametre : HF Unite : Cm

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	75.000	61.400	65.850	81.450	74.550	90.650
X 12k	72.700	65.250	83.450	62.600	80.200	89.700
X 13k	65.200	57.850	67.650	70.650	65.900	70.150
X 14k	45.400	42.100	40.500	39.550	49.900	50.350
X 21k	72.450	78.700	55.400	63.850	70.900	82.600
X 22k	79.800	99.500	77.400	107.200	109.600	102.150
X 23k	65.800	74.700	56.800	64.350	68.650	65.100
X 24k	48.300	49.050	68.850	53.350	59.050	57.600
X 31k	84.000	73.200	71.300	88.100	80.750	76.600
X 32k	94.500	87.150	96.100	86.250	102.750	89.700
X 33k	61.250	60.100	70.700	63.950	79.050	67.650
X 34k	78.450	72.950	59.000	53.550	58.650	69.450

Moyennes et ecarts relatifs :

X ... = 71.171

X 1.. = 65.333 (-8.20) X 2.. = 72.131 (1.35) X 3.. = 76.048 (6.85)

X .1. = 74.819 (5.13) X .2. = 88.111 (23.80) X .3. = 66.417 (-6.68) X .4. = 55.336 (-22.25)

X ..1 = 70.237 (-1.31) X ..2 = 68.496 (-3.76) X ..3 = 67.750 (-4.81) X ..4 = 69.571 (-2.25)
X ..5 = 74.996 (5.37) X ..6 = 75.975 (6.75)

X 11. = 74.817 (5.12) X 12. = 75.650 (6.29) X 13. = 66.233 (-6.94) X 14. = 44.633 (-37.29)
X 21. = 70.650 (-0.73) X 22. = 95.942 (34.80) X 23. = 65.900 (-7.41) X 24. = 56.033 (-21.27)
X 31. = 78.992 (10.99) X 32. = 92.742 (30.31) X 33. = 67.117 (-5.70) X 34. = 65.342 (-8.19)

Variances et coefficients de variations

Se1 = 158.719 Se2 = 103.129 Se3 = 140.036
cv1 = 17.702 cv2 = 14.269 cv3 = 16.627

SA = 1410.834 SD = 6883.511 SB = 287.997

Tests F :

Fa = 8.889 ++ Fd = 66.746+++ Fad = 3.622 ++

Test de BARTLETT :

Ki2 = 0.634
on accepte l'hyppothese de l'egalite des variances residuelles Se = 133.367 cv = 16.226

F'a = 10.579+++ F'd = 51.613+++ F'ad = 3.803 ++

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 06 avril 1984 Parametre : poids en M.S des t. et f. Unite : g

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	6.000	4.515	5.475	6.620	6.675	6.165
X 12k	4.390	4.160	5.455	2.250	7.585	6.575
X 13k	3.465	2.000	2.185	3.880	2.080	3.085
X 14k	1.535	1.100	1.230	0.890	2.330	1.695
X 21k	5.720	5.595	5.660	6.500	6.605	8.005
X 22k	6.330	7.250	6.655	11.555	8.920	8.980
X 23k	2.710	4.210	2.555	3.355	2.685	2.985
X 24k	2.025	1.765	2.930	2.280	2.895	2.285
X 31k	9.200	5.335	5.850	8.285	6.605	6.905
X 32k	9.840	8.065	8.300	6.255	10.065	8.200
X 33k	3.335	2.140	3.400	2.635	3.710	2.550
X 34k	3.455	3.465	2.160	1.635	2.500	2.360

Moyennes et ecarts relatifs :

X ... = 4.695

X 1.. = 3.806 (-18.94) X 2.. = 5.019 (6.90) X 3.. = 5.260 (12.04)

X .1. = 6.429 (36.92) X .2. = 7.268 (54.81) X .3. = 2.942 (-37.33) X .4. = 2.141 (-54.40)

X ..1 = 4.834 (2.95) X ..2 = 4.133 (-11.96) X ..3 = 4.321 (-7.96) X ..4 = 4.678 (-0.36)
X ..5 = 5.221 (11.21) X ..6 = 4.982 (6.12)

X 11. = 5.908 (25.84) X 12. = 5.069 (7.97) X 13. = 2.782 (-40.74) X 14. = 1.463 (-68.83)
X 21. = 6.347 (35.20) X 22. = 8.282 (76.39) X 23. = 3.083 (-34.33) X 24. = 2.363 (-49.66)
X 31. = 7.030 (49.73) X 32. = 8.454 (80.06) X 33. = 2.962 (-36.92) X 34. = 2.596 (-44.71)

Variances et coefficients de variations

Se1 = 3.351 Se2 = 2.059 Se3 = 2.326
cv1 = 38.991 cv2 = 30.560 cv3 = 32.484

SA = 29.166 SD = 230.670 SB = 4.005

Tests F :

Fa = 8.703 ++ Fd = 112.045+++ Fad = 3.275 +

Test de BARTLETT :

Ki2 = 0.776
on accepte l'hyppothese de l'egalite des variances residuelles Se = 2.440 cv = 51.959

F'a = 11.954+++ F'd = 94.555+++ F'ad = 3.122 +

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : PH Unite : .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	6.170	6.000	6.360	6.090	6.520	6.220
X 12k	6.650	6.650	6.580	6.610	6.650	6.680
X 13k	7.400	7.560	7.490	7.640	7.550	7.650
X 14k	7.980	8.000	7.990	7.900	7.960	7.960
X 21k	6.030	6.140	5.900	5.870	5.880	5.950
X 22k	6.600	6.640	6.460	6.700	6.830	6.910
X 23k	7.620	8.000	7.440	7.740	7.580	7.580
X 24k	8.020	7.880	7.900	8.000	7.920	7.600
X 31k	5.940	5.830	5.850	5.840	5.760	5.830
X 32k	6.550	6.500	6.470	6.550	6.650	6.490
X 33k	7.500	7.500	7.560	7.450	7.440	7.320
X 34k	7.810	7.860	7.870	7.910	7.770	7.800

Moyennes et ecarts relatifs :

X ... = 7.021

X 1.. = 7.094 (1.04) X 2.. = 7.050 (0.41) X 3.. = 6.919 (-1.45)

X .1. = 6.010 (-14.40) X .2. = 6.621 (-5.70) X .3. = 7.557 (7.63) X .4. = 7.896 (12.47)

X ..1 = 7.022 (0.02) X ..2 = 7.047 (0.37) X ..3 = 6.989 (-0.45) X ..4 = 7.025 (0.06)
X ..5 = 7.042 (0.31) X ..6 = 6.999 (-0.31)

X 11. =	6.227 (-11.31)	X 12. =	6.637 (-5.47)	X 13. =	7.548 (7.51)	X 14. =	7.965 (13.45)
X 21. =	5.962 (-15.09)	X 22. =	6.690 (-4.71)	X 23. =	7.660 (9.10)	X 24. =	7.887 (12.33)
X 31. =	5.842 (-16.80)	X 32. =	6.535 (-6.92)	X 33. =	7.462 (6.28)	X 34. =	7.837 (11.62)

Variances et coefficients de variations

Se1 =	0.033	Se2 =	0.029	Se3 =	0.026
cv1 =	2.573	cv2 =	2.429	cv3 =	2.303

SA = 0.399 SD = 26.823 SB = 0.013

Tests F :

Fa = 12.225 ++ Fd = 922.639+++ Fad = 3.954 ++

Test de BARTLETT :

Ki2 = 0.198
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.028 cv = 0.400

F'a = 14.191+++ F'd = 953.973+++ F'ad = 3.674 ++

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : TNTF Unite : %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	4.300	4.100	4.300	3.900	4.100	4.000
X 12k	4.100	4.100	3.900	3.950	3.750	4.000
X 13k	3.700	3.050	3.550	3.850	3.600	3.950
X 14k	3.750	3.200	3.820	3.550	3.800	3.550
X 21k	4.100	3.870	3.600	4.050	4.150	4.100
X 22k	3.800	3.700	3.750	3.470	3.620	3.600
X 23k	3.550	3.750	3.650	4.100	3.650	3.900
X 24k	3.050	3.600	3.620	3.750	4.150	3.670
X 31k	3.270	3.820	4.100	3.820	4.200	4.000
X 32k	3.520	3.850	3.750	3.800	3.820	3.720
X 33k	3.700	3.300	3.550	3.700	3.500	3.750
X 34k	3.950	3.400	3.920	3.650	3.700	4.050

Moyennes et ecarts relatifs :

X ... = 3.777

X 1.. =	3.828 (1.34)	X 2.. =	3.760 (-0.44)	X 3.. =	3.743 (-0.90)			
X .1. =	3.988 (5.57)	X .2. =	3.789 (0.31)	X .3. =	3.656 (-3.22)	X .4. =	3.677 (-2.66)	
X ..1 =	3.732 (-1.18)	X ..2 =	3.645 (-3.50)	X ..3 =	3.792 (0.40)	X ..4 =	3.799 (0.58)	
X ..5 =	3.837 (1.57)	X ..6 =	3.857 (2.13)					
X 11. =	4.117 (8.99)	X 12. =	3.967 (5.02)	X 13. =	3.617 (-4.25)	X 14. =	3.612 (-4.38)	
X 21. =	3.978 (5.32)	X 22. =	3.657 (-3.19)	X 23. =	3.767 (-0.28)	X 24. =	3.640 (-3.63)	
X 31. =	3.868 (2.41)	X 32. =	3.743 (-0.90)	X 33. =	3.583 (-5.13)	X 34. =	3.778 (0.03)	

Variances et coefficients de variations

Se1 =	0.087	Se2 =	0.111	Se3 =	0.101
cv1 =	7.825	cv2 =	8.827	cv3 =	8.430
SA =	0.096	SD =	0.833	SB =	0.145

Tests F :

Fa =	1.099	Fd =	7.490 ++	Fad =	1.995

Test de BARTLETT :

Ki2 = 0.166
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.101 cv = 8.434

F'a =	0.946	F'd =	8.203+++	F'ad =	1.992

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : TPTF Unite : %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.630	0.590	0.740	0.530	0.600	0.610
X 12k	0.650	0.650	0.550	0.530	0.590	0.630
X 13k	0.410	0.260	0.330	0.430	0.310	0.450
X 14k	0.390	0.250	0.370	0.460	0.540	0.390
X 21k	0.580	0.550	0.650	0.760	0.680	0.530
X 22k	0.480	0.360	0.590	0.440	0.450	0.540
X 23k	0.430	0.460	0.380	0.760	0.400	0.590
X 24k	0.400	0.390	0.550	0.380	0.830	0.550
X 31k	0.540	0.590	0.540	0.500	0.680	0.650
X 32k	0.400	0.450	0.490	0.550	0.550	0.540
X 33k	0.510	0.280	0.380	0.600	0.460	0.560
X 34k	0.510	0.380	0.560	0.550	0.560	0.730

Moyennes et ecarts relatifs :

X ... = 0.516

X 1.. = 0.495 (-4.06) X 2.. = 0.530 (2.72) X 3.. = 0.523 (1.34)

X .1. = 0.608 (17.81) X .2. = 0.524 (1.56) X .3. = 0.444 (-13.93) X .4. = 0.488 (-5.43)

X ..1 = 0.494 (-4.30) X ..2 = 0.434 (-15.92) X ..3 = 0.511 (-1.08) X ..4 = 0.541 (4.73)
X ..5 = 0.554 (7.32) X ..6 = 0.564 (9.25)

X 11. = 0.617 (19.42) X 12. = 0.600 (16.19) X 13. = 0.365 (-29.32) X 14. = 0.400 (-22.54)
X 21. = 0.625 (21.03) X 22. = 0.477 (-7.69) X 23. = 0.503 (-2.53) X 24. = 0.517 (0.05)
X 31. = 0.583 (12.96) X 32. = 0.497 (-3.82) X 33. = 0.465 (-9.95) X 34. = 0.548 (6.19)

Variances et coefficients de variations

Se1 = 0.010 Se2 = 0.028 Se3 = 0.015
cv1 = 19.036 cv2 = 32.533 cv3 = 23.326

SA = 0.016 SD = 0.174 SB = 0.056

Tests F :

Fa = 1.701 Fd = 6.157 ++ Fad = 4.053 ++

Test de BARTLETT :

Ki2 = 3.860
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.017 cv = 25.521

F'a = 0.946 F'd = 10.006+++ F'ad = 3.386 ++

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : TKTF Unite : %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	5.500	5.750	5.880	5.930	5.750	5.880
X 12k	5.800	6.380	6.630	5.680	5.500	5.880
X 13k	5.250	4.630	5.000	4.880	4.750	4.930
X 14k	4.730	3.930	4.700	3.870	4.930	4.680
X 21k	6.130	6.000	6.000	6.000	5.750	6.130
X 22k	5.430	5.380	5.630	5.630	5.500	5.630
X 23k	5.130	5.750	5.500	5.880	5.500	5.500
X 24k	3.880	4.800	4.880	4.250	5.430	4.250
X 31k	5.130	4.880	4.930	5.380	5.680	5.880
X 32k	5.380	5.130	4.880	5.380	5.380	5.430
X 33k	5.880	4.380	4.630	5.630	5.130	5.750
X 34k	5.380	5.130	5.130	5.300	5.050	5.300

Moyennes et ecarts relatifs :

X ... = 5.319

X 1.. = 5.285 (-0.63) X 2.. = 5.415 (1.81) X 3.. = 5.256 (-1.18)

X .1. = 5.699 (7.15) X .2. = 5.592 (5.13) X .3. = 5.228 (-1.71) X .4. = 4.757 (-10.57)

X ..1 = 5.302 (-0.32) X ..2 = 5.178 (-2.64) X ..3 = 5.316 (-0.05) X ..4 = 5.317 (-0.02)
X ..5 = 5.362 (0.82) X ..6 = 5.437 (2.22)

X 11. = 5.782 (8.70) X 12. = 5.978 (12.40) X 13. = 4.907 (-7.75) X 14. = 4.473 (-15.90)
X 21. = 6.002 (12.84) X 22. = 5.533 (4.03) X 23. = 5.543 (4.22) X 24. = 4.582 (-13.86)
X 31. = 5.313 (-0.10) X 32. = 5.263 (-1.04) X 33. = 5.233 (-1.61) X 34. = 5.215 (-1.95)

Variances et coefficients de variations

Se1 = 0.462 Se2 = 0.221 Se3 = 0.205
cv1 = 12.784 cv2 = 8.830 cv3 = 8.520

SA = 0.343 SD = 6.518 SB = 0.172

Tests F :

Fa = 0.743 Fd = 29.556+++ Fad = 9.490+++

Test de BARTLETT :

Ki2 = 2.898
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.256 cv = 9.517

F'a = 1.340 F'd = 25.442+++ F'ad = 7.606+++

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : TCATF Unite : %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.110	0.120	0.100	0.110	0.120	0.120
X 12k	0.130	0.150	0.120	0.150	0.140	0.130
X 13k	0.240	0.270	0.260	0.250	0.310	0.290
X 14k	0.340	0.410	0.300	0.440	0.420	0.400
X 21k	0.100	0.100	0.100	0.100	0.110	0.110
X 22k	0.130	0.150	0.150	0.130	0.150	0.140
X 23k	0.240	0.290	0.250	0.270	0.250	0.250
X 24k	0.360	0.410	0.330	0.400	0.420	0.430
X 31k	0.090	0.130	0.100	0.110	0.100	0.100
X 32k	0.130	0.130	0.140	0.160	0.170	0.160
X 33k	0.270	0.280	0.220	0.260	0.250	0.300
X 34k	0.330	0.360	0.400	0.460	0.480	0.420

Moyennes et ecarts relatifs :

X ... = 0.227

X 1.. = 0.226 (-0.37) X 2.. = 0.224 (-1.47) X 3.. = 0.231 (1.83)

X .1. = 0.107 (-52.78) X .2. = 0.142 (-37.37) X .3. = 0.264 (16.21) X .4. = 0.395 (73.94)

X ..1 = 0.206 (-9.36) X ..2 = 0.233 (2.75) X ..3 = 0.206 (-9.36) X ..4 = 0.237 (4.22)
X ..5 = 0.243 (7.16) X ..6 = 0.238 (4.59)

X 11. = 0.113 (-50.09) X 12. = 0.137 (-39.82) X 13. = 0.270 (18.90) X 14. = 0.385 (69.54)
X 21. = 0.103 (-54.50) X 22. = 0.142 (-37.61) X 23. = 0.258 (13.76) X 24. = 0.392 (72.48)
X 31. = 0.105 (-53.76) X 32. = 0.148 (-34.68) X 33. = 0.263 (15.96) X 34. = 0.408 (79.82)

Variances et coefficients de variations

Se1 = 0.001 Se2 = 0.002 Se3 = 0.001
cv1 = 10.106 cv2 = 20.469 cv3 = 14.171

SA = 0.001 SD = 0.613 SB = 0.007

Tests F :

Fa = 1.329 Fd = 283.920+++ Fad = 0.708

Test de BARTLETT :

Ki2 = 5.896
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.001 cv = 15.568

F'a = 0.560 F'd = 490.799+++ F'ad = 0.587

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : TMGTF Unite : %

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.610	0.610	0.620	0.610	0.620	0.550
X 12k	0.550	0.650	0.550	0.620	0.630	0.570
X 13k	0.710	0.910	0.860	0.760	0.850	0.880
X 14k	0.950	1.020	0.740	1.040	0.900	0.920
X 21k	0.570	0.530	0.520	0.530	0.520	0.490
X 22k	0.530	0.630	0.650	0.570	0.580	0.550
X 23k	0.750	0.750	0.830	0.800	0.820	0.740
X 24k	0.770	0.940	0.780	0.910	0.820	0.870
X 31k	0.550	0.550	0.540	0.560	0.530	0.520
X 32k	0.590	0.630	0.600	0.640	0.660	0.570
X 33k	0.790	0.840	0.760	0.760	0.750	0.670
X 34k	0.590	0.650	0.770	0.830	0.940	0.780

Moyennes et ecarts relatifs :

X ... = 0.698

X 1.. = 0.739 (5.85)	X 2.. = 0.685 (-1.79)	X 3.. = 0.670 (-4.06)		
X .1. = 0.557 (-20.16)	X .2. = 0.598 (-14.27)	X .3. = 0.791 (13.27)	X .4. = 0.846 (21.15)	
X ..1 = 0.663 (-4.96)	X ..2 = 0.726 (4.00)	X ..3 = 0.685 (-1.85)	X ..4 = 0.719 (3.04)	
X ..5 = 0.718 (2.93)	X ..6 = 0.676 (-3.16)			
X 11. = 0.603 (-13.55)	X 12. = 0.595 (-14.75)	X 13. = 0.828 (18.69)	X 14. = 0.928 (33.01)	
X 21. = 0.527 (-24.54)	X 22. = 0.585 (-16.18)	X 23. = 0.782 (12.00)	X 24. = 0.848 (21.55)	
X 31. = 0.542 (-22.39)	X 32. = 0.615 (-11.88)	X 33. = 0.762 (9.13)	X 34. = 0.760 (8.90)	

Variances et coefficients de variations

Se1 = 0.004	Se2 = 0.008	Se3 = 0.008
cv1 = 9.461	cv2 = 12.820	cv3 = 13.017
SA = 0.063	SD = 0.721	SB = 0.017

Tests F :

Fa = 14.457 ++ Fd = 90.080+++ Fad = 2.371

Test de BARTLETT :

Ki2 = 1.370
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.007 cv = 12.390

F'a = 8.429+++ F'd = 96.432+++ F'ad = 2.617 +

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : PNTF Unite : cg/plt

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	25.800	18.511	23.542	25.818	27.367	24.660
X 12k	17.999	17.056	21.274	8.888	28.444	26.300
X 13k	12.820	6.100	7.757	14.938	7.488	12.186
X 14k	5.756	3.520	4.699	3.159	8.854	6.017
X 21k	23.452	21.653	20.376	26.325	27.411	32.820
X 22k	24.054	26.825	24.956	40.096	32.290	32.328
X 23k	9.621	15.787	9.326	13.755	9.800	11.641
X 24k	6.176	6.354	10.607	8.550	12.014	8.386
X 31k	30.084	20.380	23.985	31.649	27.741	27.620
X 32k	34.637	31.050	31.125	23.769	38.448	30.504
X 33k	12.339	7.062	12.070	9.749	12.985	9.563
X 34k	13.647	11.781	8.467	5.968	9.250	9.558

Moyennes et ecarts relatifs :

X ... = 17.875

X 1.. = 14.956 (-16.33) X 2.. = 18.942 (5.97) X 3.. = 19.726 (10.36)

X .1. = 25.511 (42.72) X .2. = 27.225 (52.31) X .3. = 10.833 (-39.40) X .4. = 7.931 (-55.63)

X ..1 = 18.032 (0.88) X ..2 = 15.507 (-13.25) X ..3 = 16.515 (-7.61) X ..4 = 17.722 (-0.86)
X ..5 = 20.174 (12.86) X ..6 = 19.299 (7.97)

X 11. = 24.283 (35.85) X 12. = 19.993 (11.85) X 13. = 10.215 (-42.85) X 14. = 5.334 (-70.16)
X 21. = 25.339 (41.76) X 22. = 30.092 (68.35) X 23. = 11.655 (-34.80) X 24. = 8.681 (-51.43)
X 31. = 26.910 (50.55) X 32. = 31.589 (76.72) X 33. = 10.628 (-40.54) X 34. = 9.779 (-45.29)

Variances et coefficients de variations

Se1 = 38.213 Se2 = 28.995 Se3 = 27.187
cv1 = 34.583 cv2 = 30.124 cv3 = 29.170

SA = 314.003 SD = 3530.308 SB = 71.136

Tests F :

Fa = 8.217 ++ Fd = 121.756+++ Fad = 3.129 +

Test de BARTLETT :

Ki2 = 0.451
on accepte l'hyppothese de l'egalite des variances residuelles Se = 29.685 cv = 30.481

F'a = 10.578+++ F'd = 118.927+++ F'ad = 2.866 +

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : PPTF Unite : cg/plt

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	3.780	2.664	4.051	3.509	4.005	3.761
X 12k	2.853	2.704	3.000	1.192	4.475	4.142
X 13k	1.421	0.520	0.721	1.668	0.645	1.388
X 14k	0.599	0.275	0.455	0.409	1.258	0.661
X 21k	3.318	3.077	3.679	4.940	4.491	4.243
X 22k	3.038	2.610	3.926	5.084	4.014	4.849
X 23k	1.165	1.937	0.971	2.550	1.074	1.761
X 24k	0.810	0.688	1.611	0.866	2.403	1.257
X 31k	4.968	3.148	3.159	4.142	4.491	4.488
X 32k	3.936	3.629	4.067	3.440	5.536	4.428
X 33k	1.701	0.599	1.292	1.581	1.707	1.428
X 34k	1.762	1.317	1.210	0.899	1.400	1.723

Moyennes et ecarts relatifs :

X ... = 2.508

X 1.. = 2.090 (-16.67) X 2.. = 2.682 (6.93) X 3.. = 2.752 (9.74)

X .1. = 3.884 (54.87) X .2. = 3.718 (48.25) X .3. = 1.340 (-46.55) X .4. = 1.089 (-56.57)

X ..1 = 2.446 (-2.47) X ..2 = 1.931 (-23.02) X ..3 = 2.345 (-6.49) X ..4 = 2.524 (0.62)
X ..5 = 2.958 (17.96) X ..6 = 2.844 (13.40)

X 11. = 3.628 (44.67) X 12. = 3.061 (22.06) X 13. = 1.061 (-57.71) X 14. = 0.610 (-75.69)
X 21. = 3.958 (57.82) X 22. = 3.920 (56.32) X 23. = 1.576 (-37.15) X 24. = 1.273 (-49.26)
X 31. = 4.066 (62.13) X 32. = 4.173 (66.38) X 33. = 1.385 (-44.79) X 34. = 1.385 (-44.77)

Variances et coefficients de variations

Se1 = 0.976 Se2 = 0.926 Se3 = 0.556
cv1 = 39.401 cv2 = 38.377 cv3 = 29.718

SA = 6.351 SD = 80.814 SB = 3.262

Tests F :

Fa = 6.504 + Fd = 87.239+++ Fad = 0.762

Test de BARTLETT :

Ki2 = 1.895
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.733 cv = 34.142

F'a = 8.662+++ F'd = 110.223+++ F'ad = 0.578

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : PKTF Unite : cg/plt

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	33.000	25.961	32.193	39.257	38.381	36.250
X 12k	25.462	26.541	36.167	12.780	41.717	38.661
X 13k	18.191	9.260	10.925	18.934	9.880	15.209
X 14k	7.261	4.323	5.781	3.444	11.487	7.933
X 21k	35.064	33.570	33.960	39.000	37.979	49.071
X 22k	34.372	39.005	37.468	65.055	49.060	50.557
X 23k	13.902	24.207	14.052	19.727	14.767	16.417
X 24k	7.857	8.472	14.298	9.690	15.720	9.711
X 31k	47.196	26.035	28.840	44.573	37.516	40.601
X 32k	52.939	41.373	40.504	33.652	54.150	44.526
X 33k	19.610	9.373	15.742	14.835	19.032	14.662
X 34k	18.588	17.775	11.081	8.665	12.625	12.508

Moyennes et ecarts relatifs :

X ... = 25.672

X 1.. = 21.208 (-17.39) X 2.. = 28.041 (9.23) X 3.. = 27.767 (8.16)

X .1. = 36.580 (42.49) X .2. = 40.222 (56.67) X .3. = 15.485 (-39.68) X .4. = 10.401 (-59.48)

X ..1 = 26.120 (1.75) X ..2 = 22.158 (-13.69) X ..3 = 23.418 (-8.78) X ..4 = 25.801 (0.50)
X ..5 = 28.526 (11.12) X ..6 = 28.009 (9.10)

X 11. = 34.174 (33.12) X 12. = 30.221 (17.72) X 13. = 13.733 (-46.50) X 14. = 6.705 (-73.88)
X 21. = 38.107 (48.44) X 22. = 45.919 (78.87) X 23. = 17.179 (-33.08) X 24. = 10.958 (-57.32)
X 31. = 37.460 (45.92) X 32. = 44.524 (73.43) X 33. = 15.542 (-39.46) X 34. = 13.540 (-47.26)

Variances et coefficients de variations

Se1 = 109.872 Se2 = 70.963 Se3 = 76.107
cv1 = 40.830 cv2 = 32.814 cv3 = 33.982

SA = 718.206 SD = 8011.936 SB = 150.028

Tests F :

Fa = 6.537 + Fd = 112.902+++ Fad = 1.838

Test de BARTLETT :

Ki2 = 0.678
on accepte l'hyppothese de l'egalite des variances residuelles Se = 80.844 cv = 35.024

F'a = 8.884+++ F'd = 99.104+++ F'ad = 1.730

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : PCATF Unite : cg/plt

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	0.660	0.542	0.548	0.728	0.801	0.740
X 12k	0.571	0.624	0.655	0.338	1.062	0.855
X 13k	0.832	0.540	0.568	0.970	0.645	0.895
X 14k	0.522	0.451	0.369	0.392	0.979	0.678
X 21k	0.572	0.559	0.566	0.650	0.727	0.881
X 22k	0.823	1.087	0.998	1.502	1.338	1.257
X 23k	0.650	1.221	0.639	0.906	0.671	0.746
X 24k	0.729	0.724	0.967	0.912	1.216	0.983
X 31k	0.828	0.694	0.585	0.911	0.660	0.690
X 32k	1.279	1.048	1.162	1.001	1.711	1.312
X 33k	0.900	0.599	0.748	0.685	0.928	0.765
X 34k	1.140	1.247	0.864	0.752	1.200	0.991

Moyennes et ecarts relatifs :

X ... = 0.833

X 1.. = 0.665 (-20.18) X 2.. = 0.888 (6.64) X 3.. = 0.946 (13.54)

X .1. = 0.686 (-17.70) X .2. = 1.035 (24.18) X .3. = 0.773 (-7.26) X .4. = 0.840 (0.79)

X ..1 = 0.792 (-4.92) X ..2 = 0.778 (-6.61) X ..3 = 0.722 (-13.30) X ..4 = 0.812 (-2.51)
X ..5 = 0.995 (19.40) X ..6 = 0.899 (7.95)

X 11. =	0.670 (-19.62)	X 12. =	0.684 (-17.91)	X 13. =	0.742 (-11.00)	X 14. =	0.565 (-32.18)
X 21. =	0.659 (-20.89)	X 22. =	1.168 (40.15)	X 23. =	0.806 (-3.31)	X 24. =	0.922 (10.62)
X 31. =	0.728 (-12.60)	X 32. =	1.252 (50.30)	X 33. =	0.771 (-7.48)	X 34. =	1.032 (23.92)

Variances et coefficients de variations

Se1 =	0.073	Se2 =	0.067	Se3 =	0.055
cv1 =	32.447	cv2 =	31.173	cv3 =	28.242
SA =	1.057	SD =	0.793	SB =	0.230

Tests F :

Fa = 14.465 ++ Fd = 11.749+++ Fad = 4.914 ++

Test de BARTLETT :

Ki2 = 0.371
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.062 cv = 29.858

F'a = 17.082+++ F'd = 12.806+++ F'ad = 4.396 ++

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : PMGTF Unite : cg/plt

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	3.660	2.754	3.394	4.038	4.138	3.391
X 12k	2.414	2.704	3.000	1.395	4.779	3.748
X 13k	2.460	1.820	1.879	2.949	1.768	2.715
X 14k	1.458	1.122	0.910	0.926	2.097	1.559
X 21k	3.260	2.965	2.943	3.445	3.435	3.922
X 22k	3.355	4.567	4.326	6.586	5.174	4.939
X 23k	2.032	3.157	2.121	2.684	2.202	2.209
X 24k	1.559	1.659	2.285	2.075	2.374	1.988
X 31k	5.060	2.934	3.159	4.640	3.501	3.591
X 32k	5.806	5.081	4.980	4.003	6.643	4.674
X 33k	2.635	1.798	2.584	2.003	2.782	1.708
X 34k	2.038	2.252	1.663	1.357	2.350	1.841

Moyennes et ecarts relatifs :

X ... = 2.993

X 1.. = 2.545 (-14.94)	X 2.. = 3.136 (4.81)	X 3.. = 3.295 (10.13)	
X .1. = 3.568 (19.26)	X .2. = 4.343 (45.15)	X .3. = 2.306 (-22.93)	X .4. = 1.751 (-41.48)
X ..1 = 2.978 (-0.46)	X ..2 = 2.735 (-8.61)	X ..3 = 2.770 (-7.41)	X ..4 = 3.008 (0.55)
X ..5 = 3.437 (14.87)	X ..6 = 3.024 (1.06)		
X 11. = 3.563 (19.07)	X 12. = 3.007 (0.49)	X 13. = 2.265 (-24.29)	X 14. = 1.345 (-55.03)
X 21. = 3.328 (11.25)	X 22. = 4.825 (61.25)	X 23. = 2.401 (-19.76)	X 24. = 1.990 (-33.49)
X 31. = 3.814 (27.47)	X 32. = 5.198 (73.72)	X 33. = 2.252 (-24.75)	X 34. = 1.917 (-35.93)

Variances et coefficients de variations

Se1 = 1.260	Se2 = 0.866	Se3 = 0.749
cv1 = 37.514	cv2 = 31.101	cv3 = 28.932
SA = 7.498	SD = 50.025	SB = 1.511

Tests F :

Fa = 5.952 + Fd = 57.769+++ Fad = 5.016 ++

Test de BARTLETT :

Ki2 = 1.064
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.874 Cv = 31.245

F'a = 8.580+++ F'd = 57.238+++ F'ad = 4.301 ++

Influence de quatre doses de CaO de trois amendements calciques differents
sur une culture de mais sur vertisol hypermagnesien

Analyse de variance

Date : 6 avril 1984 Parametre : PH* Unite : .

	Bloc 1	Bloc 2	Bloc 3	Bloc 4	Bloc 5	Bloc 6
X 11k	5.890	6.230	6.320	5.960	6.130	6.130
X 12k	7.030	6.780	6.620	6.840	6.920	6.700
X 13k	7.810	7.610	7.620	7.400	7.740	7.690
X 14k	7.920	8.210	8.180	7.840	8.100	7.810
X 21k	6.220	6.270	6.200	6.150	6.310	6.130
X 22k	6.640	6.900	6.800	6.780	6.870	6.540
X 23k	7.770	7.510	7.290	7.700	7.330	7.410
X 24k	7.830	7.510	7.980	8.040	7.790	7.540
X 31k	6.100	6.010	6.040	6.350	5.940	6.050
X 32k	7.000	6.500	6.660	6.730	6.690	6.570
X 33k	7.900	7.350	7.460	7.840	7.470	7.210
X 34k	7.860	8.000	7.920	7.600	7.930	7.670

* mesuré directement sur un échantillon de sol humide prélevé sur la terre des pots juste après la récolte.

Moyennes et ecarts relatifs :

X ... = 7.081

X 1.. = 7.145 (0.90)	X 2.. = 7.063 (-0.26)	X 3.. = 7.035 (-0.65)		
X .1. = 6.135 (-13.36)	X .2. = 6.754 (-4.62)	X .3. = 7.562 (6.79)	X .4. = 7.874 (11.20)	
X ..1 = 7.164 (1.17)	X ..2 = 7.073 (-0.11)	X ..3 = 7.091 (0.14)	X ..4 = 7.102 (0.30)	
X ..5 = 7.102 (0.29)	X ..6 = 6.954 (-1.79)			
X 11. = 6.110 (-13.71)	X 12. = 6.815 (-3.76)	X 13. = 7.645 (7.96)	X 14. = 8.010 (13.12)	
X 21. = 6.213 (-12.25)	X 22. = 6.755 (-4.61)	X 23. = 7.502 (5.94)	X 24. = 7.782 (9.89)	
X 31. = 6.082 (-14.11)	X 32. = 6.692 (-5.50)	X 33. = 7.538 (6.46)	X 34. = 7.830 (10.58)	

Variances et coefficients de variations

Se1 = 0.059	Se2 = 0.059	Se3 = 0.052
cv1 = 3.429	cv2 = 3.435	cv3 = 3.208
SA = 0.156	SD = 22.340	SB = 0.115

Tests F :

Fa = 2.646 Fd = 377.547+++ Fad = 1.211

Test de BARTLETT :

Ki2 = 0.122
on accepte l'hyppothese de l'egalite des variances residuelles Se = 0.055 cv = 3.312

F'a = 2.836 F'd = 406.141+++ F'ad = 1.136

4 - MATRICE DES COEFFICIENTS DE CORRELATION RESIDUELLE

(pour la signification des sigles, cf. l'annexe 1)

	PMGTF	V15-17	H20	V17-80	H22	V20-22	HF	H24	V22-24	IC-P1	IC-CA1	NF1	NR	NF2	IC-CA2	IC-P2	I-CHLO	PH	PMSTF
H6	0.46	0.34	0.52		0.43		0.29	0.38				0.27				0.26			0.42
TNTF																	0.24		-.23
H8	0.44	0.29	0.67		0.56		0.36	0.44		-.27	0.29	0.31			0.27				0.41
TPTF							-.24						0.29		0.34				
V6-8			0.42		0.37					-.25	0.29								
TKTF					0.28	0.38		0.35		-.36					0.27	-.33			
H10	0.43	0.32	0.66		0.54		0.35	0.44			0.28	0.24			0.29				0.38
TCATF	-.22		-.28	-.36	-.35	-.33	-.45	-.31				-.24							-.35
V8-10				-.24								-.28							
TMTTF			-.23	-.34	-.31	-.34	-.39	-.29											-.25
H13	0.51	0.39	0.77		0.65		0.39	0.57		-.35	0.41	0.33			0.30				0.48
PNTF		0.42	0.72	0.56	0.75	0.50	0.69	0.78				0.23		0.31					
V10-13	0.29	0.24	0.41		0.38			0.38		-.26	0.38	0.27							0.32
PPTF		0.33	0.51	0.36	0.56	0.43	0.40	0.58		-.31				0.38	0.43				
H15	0.61		0.88		0.77	0.24	0.53	0.69		-.36	0.37	0.31			0.33				0.61
PKTF		0.34	0.74	0.56	0.78	0.54	0.68	0.82			0.25			0.36					
V13-15	0.47		0.60	0.40	0.57	0.29	0.51	0.56	0.23										0.53
PCATF		0.39	0.67	0.52	0.68	0.42	0.63	0.72				0.28		0.40	0.26				
H17	0.66		0.91		0.78		0.55	0.71		-.37	0.32	0.36			0.34		0.22		0.64
PMGTF		0.47	0.76	0.52	0.74	0.40	0.63	0.77				0.28		0.40					
V15-17	0.47		0.52		0.39		0.33	0.37				0.31							0.40
H20	0.76	0.52			0.93		0.77	0.86	0.27	-.34	0.28	0.34			0.25				0.76
V17-20	0.52				0.71		0.76	0.69	0.29					0.26		-.29	-.23		0.56
H22	0.74	0.39	0.93	0.71			0.82	0.95		-.32	0.24	0.24		0.30	0.24				0.77
V20-22	0.40						0.57	0.72	0.36					0.47		-.37			0.48
HF	0.63	0.33	0.77	0.76	0.82	0.57		0.81											0.70
H24	0.77	0.37	0.86	0.69	0.95	0.72	0.81			-.27	0.30			0.36					0.80
V22-24			0.27	0.29		0.36													
IC-P1			-.34		-.32			-.27							-.38		-.22		
IC-CA1			0.28		0.24			0.30											0.23
NF1	0.28	0.31	0.34		0.24													0.25	0.26
NR															0.40				
NF2	0.40			0.26	0.30	0.47		0.36											0.36
IC-CA2			0.25		0.24					-.38			0.40						
IC-P2				-.29		-.37											0.50		
I-CHLO				-.23						-.22						0.50			
PH												0.25							
PMSTF		0.40	0.76	0.56	0.77	0.48	0.70	0.80			0.23	0.26		0.36					

	H6	TNTF	H8	TPTF	V6-8	TKTF	H10	TCATF	V8-10	TMGTF	H13	PNTF	V10-13	PPTF	H15	PKTF	V13-15	PCATF	H17
H6		-.25	0.78				0.80				0.69	0.38		0.32	0.63	0.38		0.33	0.65
TNTF	-.25		-.25	0.59		0.44			0.25		-.25								
H8	0.78	-.25					0.95				0.87	0.36		0.28	0.79	0.36		0.32	0.77
TPTF		0.59				0.47													
V6-8							0.52				0.53				0.48				0.43
TKTF		0.44		0.47						-.28				0.28			0.29	0.25	
H10	0.80		0.95		0.52						0.90	0.33			0.81	0.33		0.33	0.80
TCATF										0.69		-.37		-.25		-.34	-.24		
V8-10		0.25																	
TMGTF						-.28		0.69				-.28				-.27	-.24	-.27	
H13	0.69	-.25	0.87		0.53		0.90					0.40		0.31	0.92	0.45		0.42	0.92
PNTF	0.38		0.36				0.33	-.37		-.28	0.40		0.22		0.56		0.58		0.60
V10-13												0.22			0.44	0.33		0.26	0.45
PPTF	0.32		0.28			0.28		-.25			0.31				0.40		0.36		0.44
H15	0.63		0.79		0.48		0.81				0.92	0.56	0.44	0.40		0.61		0.52	0.97
PKTF	0.38		0.36				0.33	-.34		-.27	0.45		0.33		0.61		0.59		0.62
V13-15						0.29		-.24		-.24		0.58		0.36		0.59		0.44	0.53
PCATF	0.33		0.32			0.25	0.33			-.27	0.42		0.26		0.52		0.44		0.56
H17	0.65		0.77		0.43		0.80				0.92	0.60	0.45	0.44	0.97	0.62	0.53	0.56	
PMGTF	0.46		0.44				0.43	-.22			0.51		0.29		0.61		0.47		0.66
V15-17	0.34		0.29				0.32				0.39	0.42	0.24	0.33		0.34		0.39	
H20	0.52		0.67		0.42		0.66	-.28		-.23	0.77	0.72	0.41	0.51	0.88	0.74	0.60	0.67	0.91
V17-20								-.36	-.24	-.34		0.56		0.36		0.56	0.40	0.52	
H22	0.43		0.56		0.37	0.28	0.54	-.35		-.31	0.65	0.75	0.38	0.56	0.77	0.78	0.57	0.68	0.78
V20-22						0.38		-.33		-.34		0.50		0.43	0.24	0.54	0.29	0.42	
HF	0.29		0.36	-.24			0.35	-.45		-.39	0.39	0.69		0.40	0.53	0.68	0.51	0.63	0.55
H24	0.38		0.44			0.35	0.44	-.31		-.29	0.57	0.78	0.38	0.58	0.69	0.82	0.56	0.72	0.71
V22-24																	0.23		
IC-P1			-.27		-.25	-.36					-.35		-.26	-.31	-.36				-.37
IC-CA1			0.29		0.29		0.28				0.41		0.38		0.37	0.25			0.32
NF1	0.27		0.31				0.24	+.24	-.28		0.33	0.23	0.27		0.31			0.28	0.36
NR				0.29															
NF2												0.31		0.38		0.36		0.40	
IC-CA2			0.27	0.34		0.27	0.29				0.30			0.43	0.33			0.26	0.34
IC-P2	0.26					-.33													
I-CHLO		0.24																	0.22
PH																			
PMSTF	0.42	-.23	0.41				0.38	-.35		-.25	0.48		0.32		0.61		0.53		0.64