

Relationship between seeding rate and first production year herbage yield of three varieties of alfalfa at Elora, Ontario, 1991

The GLIMMIX Procedure

Model Information	
Data Set	WORK.SEEDS
Response Variable	yield
Response Distribution	Gaussian
Link Function	Identity
Variance Function	Default
Variance Matrix	Not blocked
Estimation Technique	Restricted Maximum Likelihood
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
block	3	1 2 3
variety	3	Legend OAC Minto Vernal
rate	4	6 12 18 24

Number of Observations Read	36
Number of Observations Used	36

Dimensions	
G-side Cov. Parameters	1
R-side Cov. Parameters	1
Columns in X	9
Columns in Z	3
Subjects (Blocks in V)	1
Max Obs per Subject	36

Parameter Search		
CovP1	CovP2	Objective Function
0.2134	0.5427	119.88286988

Optimization Information	
Optimization Technique	None
Parameters	1
Lower Boundaries	1
Upper Boundaries	0

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Optimization Information	
Fixed Effects	Profiled
Residual Variance	Profiled
Starting From	Data

No optimization performed.

Fit Statistics	
-2 Res Log Likelihood	119.88
AIC (smaller is better)	123.88
AICC (smaller is better)	124.38
BIC (smaller is better)	122.08
CAIC (smaller is better)	124.08
HQIC (smaller is better)	120.26
Generalized Chi-Square	15.20
Gener. Chi-Square / DF	0.56

Covariance Parameter Estimates		
Cov Parm	Estimate	Standard Error
block	0.2214	0.2790
Residual	0.5630	0.1592

Solutions for Fixed Effects						
Effect	variety	Estimate	Standard Error	DF	t Value	Pr > t
variety	Legend	6.3583	1.2362	25	5.14	<.0001
variety	OAC Minto	7.0250	1.2362	25	5.68	<.0001
variety	Vernal	8.3917	1.2362	25	6.79	<.0001
x*variety	Legend	0.5169	0.1834	25	2.82	0.0093
x*variety	OAC Minto	0.4853	0.1834	25	2.65	0.0139
x*variety	Vernal	0.02250	0.1834	25	0.12	0.9033
x*x*variety	Legend	-0.01366	0.006017	25	-2.27	0.0321
x*x*variety	OAC Minto	-0.01505	0.006017	25	-2.50	0.0193
x*x*variety	Vernal	-0.00162	0.006017	25	-0.27	0.7899

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Type I Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
variety	3	25	367.17	<.0001
x*variety	3	25	4.26	0.0146
x*x*variety	3	25	3.83	0.0220

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The MEANS Procedure

variety	rate	N Obs	Variable	Label	N	Mean	Std Dev	Minimum	Maximum
Legend	6	3	yield pred	Linear Predictor	3	9.1333333	0.5507571	8.6000000	9.7000000
					3	8.9683333	0.4196304	8.5053421	9.3235989
	12	3	yield pred	Linear Predictor	3	10.1000000	0.5567764	9.6000000	10.7000000
					3	10.5950000	0.4196304	10.1320088	10.9502656
18	3	yield pred	Linear Predictor	3	11.7333333	0.3214550	11.5000000	12.1000000	
				3	11.2383333	0.4196304	10.7753421	11.5935989	
24	3	yield pred	Linear Predictor	3	10.7333333	1.4011900	9.3000000	12.1000000	
				3	10.8983333	0.4196304	10.4353421	11.2535989	
OAC Minto	6	3	yield pred	Linear Predictor	3	9.3000000	0.2645751	9.0000000	9.5000000
					3	9.3950000	0.4196304	8.9320088	9.7502656
	12	3	yield pred	Linear Predictor	3	10.9666667	1.1846237	9.6000000	11.7000000
					3	10.6816667	0.4196304	10.2186754	11.0369322
18	3	yield pred	Linear Predictor	3	10.6000000	1.4525839	9.2000000	12.1000000	
				3	10.8850000	0.4196304	10.4220088	11.2402656	
24	3	yield pred	Linear Predictor	3	10.1000000	0.2000000	9.9000000	10.3000000	
				3	10.0050000	0.4196304	9.5420088	10.3602656	
Vernal	6	3	yield pred	Linear Predictor	3	8.4666667	1.2662280	7.5000000	9.9000000
					3	8.4683333	0.4196304	8.0053421	8.8235989
	12	3	yield pred	Linear Predictor	3	8.4333333	0.8082904	7.5000000	8.9000000
					3	8.4283333	0.4196304	7.9653421	8.7835989
18	3	yield pred	Linear Predictor	3	8.2666667	0.7094599	7.5000000	8.9000000	
				3	8.2716667	0.4196304	7.8086754	8.6269322	
24	3	yield pred	Linear Predictor	3	8.0000000	0.1000000	7.9000000	8.1000000	
				3	7.9983333	0.4196304	7.5353421	8.3535989	

