

The SAS System

Obs	Year	Tier	treatment	dmg_now	tot_nuts	disp_dens	insecticide	pctNOW
1	2008	1	2MD	77	6797	2	No	1.1328527291
2	2008	2	2CMD	10	6742	2	Yes	0.1483239395
3	2008	3	1MD	105	12228	1	No	0.8586849853
4	2008	4	1CMD	57	12331	1	Yes	0.4622496148
5	2008	5	1MD	303	5706	1	No	5.3101997897
6	2008	6	1CMD	170	8800	1	Yes	1.9318181818

The SAS System

The GLIMMIX Procedure

Model Information	
Data Set	WORK.Y08_4YR
Response Variable (Events)	dmg_now
Response Variable (Trials)	tot_nuts
Response Distribution	Binomial
Link Function	Logit
Variance Function	Default
Variance Matrix	Not blocked
Estimation Technique	Residual PL
Degrees of Freedom Method	Kenward-Roger
Fixed Effects SE Adjustment	Kenward-Roger

Class Level Information		
Class	Levels	Values
Year	4	2008 2009 2010 2011
Tier	10	1 2 3 4 5 6 7 8 9 10
disp_dens	2	1 2
insecticide	2	No Yes

Number of Observations Read	32
Number of Observations Used	32
Number of Events	1593
Number of Trials	178079

Dimensions	
G-side Cov. Parameters	3
Columns in X	9
Columns in Z	46
Subjects (Blocks in V)	1
Max Obs per Subject	32

Optimization Information	
Optimization Technique	Dual Quasi-Newton

Parameters in Optimization	3
Lower Boundaries	3
Upper Boundaries	0
Fixed Effects	Profiled
Starting From	Data

Iteration History					
Iteration	Restarts	Subiterations	Objective Function	Change	Max Gradient
0	0	4	73.953791553	0.02743427	6.157E-6
1	0	3	73.981286441	0.00048311	5.058E-6
2	0	2	73.98157464	0.00000288	8.487E-6
3	0	0	73.98157549	0.00000000	8.464E-6

Convergence criterion (PCONV=1.11022E-8) satisfied.

Fit Statistics	
-2 Res Log Pseudo-Likelihood	73.98
Generalized Chi-Square	27.73
Gener. Chi-Square / DF	0.99

Covariance Parameter Estimates		
Cov Parm	Estimate	Standard Error
Year	0.2084	0.2306
Tier	0.02522	0.1263
Year*Tier	0.4585	0.1918

Type III Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
disp_dens	1	13.76	3.33	0.0896
insecticide	1	13.75	11.34	0.0047
disp_dens*insecticid	1	24.59	0.42	0.5215