

The SAS System

| Obs | Year | Tier | treatment | dmg_now | tot_nuts | phero_conc | insecticide | pctNOW |
|-----|------|------|-----------|---------|----------|------------|-------------|--------------|
| 1 | 2013 | 3 | 50%C | 10 | 5124 | half | Yes | 0.1951600312 |
| 2 | 2013 | 4 | 50%MD | 20 | 5560 | half | No | 0.3597122302 |
| 3 | 2013 | 5 | 100%C | 11 | 4854 | whole | Yes | 0.2266172229 |
| 4 | 2013 | 6 | 100%MD | 22 | 5025 | whole | No | 0.4378109453 |
| 5 | 2013 | 7 | 100%C | 21 | 3233 | whole | Yes | 0.6495515002 |
| 6 | 2013 | 8 | 100%MD | 14 | 3250 | whole | No | 0.4307692308 |

The SAS System

The GLIMMIX Procedure

| Model Information | |
|-----------------------------|---------------|
| Data Set | WORK.Y12_3YR |
| 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 | 2 | 2013 2014 |
| Tier | 10 | 1 2 3 4 5 6 7 8 9 10 |
| phero_conc | 2 | half whole |
| insecticide | 2 | No Yes |

| | |
|-----------------------------|-------|
| Number of Observations Read | 16 |
| Number of Observations Used | 16 |
| Number of Events | 766 |
| Number of Trials | 71894 |

| Dimensions | |
|------------------------|----|
| G-side Cov. Parameters | 3 |
| Columns in X | 9 |
| Columns in Z | 28 |
| Subjects (Blocks in V) | 1 |
| Max Obs per Subject | 16 |

| 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 | 5 | 36.131742894 | 0.03897659 | 0.000037 |
| 1 | 0 | 3 | 36.153125131 | 0.00088860 | 0.000026 |
| 2 | 0 | 1 | 36.153399686 | 0.00000567 | 4.248E-6 |
| 3 | 0 | 0 | 36.153400652 | 0.00000000 | 4.592E-6 |

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

| Fit Statistics | |
|-------------------------------------|-------|
| -2 Res Log Pseudo-Likelihood | 36.15 |
| Generalized Chi-Square | 12.28 |
| Gener. Chi-Square / DF | 1.02 |

| Covariance Parameter Estimates | | |
|---------------------------------------|-----------------|-----------------------|
| Cov Parm | Estimate | Standard Error |
| Year | 1.0345 | 1.5716 |
| Tier | 0.3306 | 0.7524 |
| Year*Tier | 0.2419 | 0.5499 |

| Type III Tests of Fixed Effects | | | | |
|--|---------------|---------------|----------------|------------------|
| Effect | Num DF | Den DF | F Value | Pr > F |
| phero_conc | 1 | 6.234 | 0.16 | 0.7004 |
| insecticide | 1 | 1 | 1.83 | 0.4053 |
| phero_con*insecticid | 1 | 1.188 | 0.11 | 0.7887 |