

### The GLIMMIX Procedure

| Model Information         |                          |
|---------------------------|--------------------------|
| Data Set                  | WORK.PLANTCOVERAGE_YEAR2 |
| Response Variable         | Total_Bees               |
| Response Distribution     | Poisson                  |
| Link Function             | Log                      |
| Variance Function         | Default                  |
| Variance Matrix           | Not blocked              |
| Estimation Technique      | Residual PL              |
| Degrees of Freedom Method | Satterthwaite            |

| Class Level Information |        |  |
|-------------------------|--------|--|
| Class                   | Levels | Values   |
| Sampling_Day            | 5      | 1 2 3 4 5  |
| Site                    | 10     | Bowman Cretsinger Elkader Kalenberg McClellan NealSmith Peckumn Plunkett Sheller Sloan   |
| A                       | 50     | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 |

|                             |    |
|-----------------------------|----|
| Number of Observations Read | 50 |
| Number of Observations Used | 50 |

| Dimensions             |    |
|------------------------|----|
| G-side Cov. Parameters | 2  |
| Columns in X           | 12 |
| Columns in Z           | 60 |
| Subjects (Blocks in V) | 1  |
| Max Obs per Subject    | 50 |

| Optimization Information   |                   |
|----------------------------|-------------------|
| Optimization Technique     | Dual Quasi-Newton |
| Parameters in Optimization | 2                 |
| Lower Boundaries           | 2                 |
| Upper Boundaries           | 0                 |
| Fixed Effects              | Profiled          |
| Starting From              | Data              |

## The GLIMMIX Procedure

| Iteration History |          |               |                    |            |              |
|-------------------|----------|---------------|--------------------|------------|--------------|
| Iteration         | Restarts | Subiterations | Objective Function | Change     | Max Gradient |
| 0                 | 0        | 4             | 144.76887246       | 0.07611039 | 0.000014     |
| 1                 | 0        | 3             | 145.25702041       | 0.00454054 | 6.942E-6     |
| 2                 | 0        | 3             | 145.28515119       | 0.00014368 | 0.000051     |
| 3                 | 0        | 1             | 145.28543725       | 0.00000263 | 5.91E-6      |
| 4                 | 0        | 0             | 145.28544096       | 0.00000000 | 5.039E-6     |

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

| Fit Statistics               |        |
|------------------------------|--------|
| -2 Res Log Pseudo-Likelihood | 145.29 |
| Generalized Chi-Square       | 41.19  |
| Gener. Chi-Square / DF       | 1.03   |

| Covariance Parameter Estimates |          |                |
|--------------------------------|----------|----------------|
| Cov Parm                       | Estimate | Standard Error |
| Site                           | 0.2573   | 0.1836         |
| A                              | 0.5041   | 0.1403         |

| Solutions for Fixed Effects |              |          |                |       |         |         |
|-----------------------------|--------------|----------|----------------|-------|---------|---------|
| Effect                      | Sampling_Day | Estimate | Standard Error | DF    | t Value | Pr >  t |
| Intercept                   |              | 3.0029   | 0.4016         | 37.51 | 7.48    | <.0001  |
| Average_Coverage            |              | 0.02408  | 0.01654        | 35.28 | 1.46    | 0.1544  |
| Sampling_Day                | 1            | -0.4526  | 0.4683         | 36.07 | -0.97   | 0.3403  |
| Sampling_Day                | 2            | 0.6054   | 0.4542         | 33.23 | 1.33    | 0.1916  |
| Sampling_Day                | 3            | 0.3012   | 0.4819         | 32.6  | 0.62    | 0.5364  |
| Sampling_Day                | 4            | 0.5523   | 0.5273         | 31.77 | 1.05    | 0.3028  |
| Sampling_Day                | 5            | 0        | .              | .     | .       | .       |
| Average_C*Sampling_D        | 1            | 0.1662   | 0.08074        | 35.73 | 2.06    | 0.0468  |
| Average_C*Sampling_D        | 2            | 0.02718  | 0.06767        | 33.87 | 0.40    | 0.6905  |
| Average_C*Sampling_D        | 3            | -0.01208 | 0.02280        | 32.4  | -0.53   | 0.5997  |
| Average_C*Sampling_D        | 4            | -0.02216 | 0.02271        | 30.81 | -0.98   | 0.3368  |
| Average_C*Sampling_D        | 5            | 0        | .              | .     | .       | .       |

## The GLIMMIX Procedure

| Type III Tests of Fixed Effects |        |        |         |        |
|---------------------------------|--------|--------|---------|--------|
| Effect                          | Num DF | Den DF | F Value | Pr > F |
| Average_Coverage                | 1      | 33.68  | 4.89    | 0.0339 |
| Sampling_Day                    | 4      | 32.98  | 2.15    | 0.0961 |
| Average_C*Sampling_D            | 4      | 31.58  | 1.59    | 0.2010 |

| Sampling_Day Least Squares Means |          |                |       |         |         |       |        |        |
|----------------------------------|----------|----------------|-------|---------|---------|-------|--------|--------|
| Sampling_Day                     | Estimate | Standard Error | DF    | t Value | Pr >  t | Alpha | Lower  | Upper  |
| 1                                | 4.5602   | 0.7350         | 35.28 | 6.20    | <.0001  | 0.05  | 3.0685 | 6.0519 |
| 2                                | 4.1496   | 0.6261         | 34.75 | 6.63    | <.0001  | 0.05  | 2.8783 | 5.4210 |
| 3                                | 3.4308   | 0.2872         | 27.56 | 11.95   | <.0001  | 0.05  | 2.8421 | 4.0194 |
| 4                                | 3.5755   | 0.3197         | 30.89 | 11.18   | <.0001  | 0.05  | 2.9234 | 4.2277 |
| 5                                | 3.2572   | 0.3041         | 30.64 | 10.71   | <.0001  | 0.05  | 2.6367 | 3.8777 |

## Conditional Studentized Residuals

