As far as we know, there isn't a solid way to calculate percent variance explained for variables with a non-Gaussian distribution. The way that we handled this was to refit our non-Gaussian models (generalized linear mixed models) to general linear mixed models, then extract PVE for the last year of data collection. These new PVEs will be estimates. This is not a perfect solution but it will help us approximate PVE for these variables.

Table 1: Test for variance among families and populations

|  | **Herbivory before flowering (binary)** | | **Herbivory after flowering (binary)** | | **Weevil damage (binary)** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.000 | 0.000 | 0.001 | 4.350 | 0.014 | 6.872 |
| Population | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Block | 0.002 | 0.671 | 0.000 | 0.767 | 0.006 | 2.980 |
| Residual | 0.245 | 99.329 | 0.032 | 94.883 | 0.179 | 90.148 |

Table 2: Assess how much variance is explained by urbanization

Urbanization = Distance to the City Center

|  | **Herbivory before flowering (binary)** | | **Herbivory after flowering (binary)** | | **Weevil damage (binary)** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.000 | 0.000 | 0.001 | 3.729 | 0.013 | 6.715 |
| Population | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Block | 0.002 | 0.652 | 0.000 | 0.962 | 0.005 | 2.729 |
| Residual | 0.245 | 99.348 | 0.032 | 95.308 | 0.179 | 90.555 |

Table 3: Assess how much variance is explained by urbanization

Urbanization = Urbanization Score

|  | **Herbivory before flowering (binary)** | | **Herbivory after flowering (binary)** | | **Weevil damage (binary)** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.000 | 0.000 | 0.001 | 3.809 | 0.013 | 6.614 |
| Population | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Block | 0.002 | 0.723 | 0.000 | 0.928 | 0.006 | 3.080 |
| Residual | 0.245 | 99.277 | 0.032 | 95.262 | 0.179 | 90.306 |