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 | 0.001 | 0.317 | 0.001 | 1.948 | 0.011 | 5.624 |
| Population | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Block | 0.002 | 0.941 | 0.001 | 1.486 | 0.007 | 3.683 |
| Residual | 0.246 | 98.741 | 0.034 | 96.566 | 0.180 | 90.693 |

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 | 1.937 | 0.011 | 5.637 |
| Population | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Block | 0.002 | 0.932 | 0.001 | 1.474 | 0.007 | 3.707 |
| Residual | 0.246 | 99.068 | 0.034 | 96.589 | 0.180 | 90.655 |

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 | 0.001 | 0.331 | 0.001 | 1.894 | 0.011 | 5.751 |
| Population | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Block | 0.002 | 0.913 | 0.001 | 1.441 | 0.007 | 3.688 |
| Residual | 0.246 | 98.756 | 0.034 | 96.666 | 0.180 | 90.561 |