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

|  | **Flowering success** | | **Flowers per Inflorescence** | | **Flowering time** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.008 | 5.200 | 0.000 | 0.000 | 0.000 | 0.000 |
| Population | 0.002 | 1.436 | 32.201 | 13.873 | 1.742 | 3.047 |
| Block | 0.006 | 3.864 | 18.638 | 8.030 | 0.981 | 1.716 |
| Residual | 0.144 | 89.499 | 181.265 | 78.097 | 54.430 | 95.237 |

|  | **Flowering start** | | **Follicles** | | **Date of first follicle** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 8.010 | 11.240 | 6.452 | 11.397 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 5.950 | 10.510 | 0.000 | 0.000 |
| Block | 4.676 | 6.561 | 5.447 | 9.622 | 6.452 | 11.656 |
| Residual | 58.579 | 82.199 | 38.762 | 68.471 | 48.904 | 88.344 |

|  | **Inflorescences** | |
| --- | --- | --- |
| Group | Variance | PVE |
| Family | 0.000 | 0.000 |
| Population | 1.581 | 11.376 |
| Block | 0.178 | 1.284 |
| Residual | 12.136 | 87.340 |

Table 2: Assess how much variance is explained by urbanization

Urbanization = Distance to the City Center

|  | **Flowering success** | | **Flowers per Inflorescence** | | **Flowering time** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.008 | 5.187 | 4.199 | 1.850 | 0.000 | 0.000 |
| Population | 0.003 | 2.045 | 27.045 | 11.915 | 0.439 | 0.769 |
| Block | 0.006 | 3.829 | 17.442 | 7.684 | 0.820 | 1.437 |
| Residual | 0.144 | 88.939 | 178.301 | 78.551 | 55.785 | 97.794 |

|  | **Flowering start** | | **Follicles** | | **Date of first follicle** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 9.201 | 12.682 | 7.071 | 11.954 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 8.535 | 14.430 | 0.000 | 0.000 |
| Block | 5.091 | 7.017 | 5.602 | 9.470 | 7.904 | 13.857 |
| Residual | 58.255 | 80.300 | 37.943 | 64.146 | 49.136 | 86.143 |

|  | **Inflorescences** | |
| --- | --- | --- |
| Group | Variance | PVE |
| Family | 0.000 | 0.000 |
| Population | 1.837 | 12.878 |
| Block | 0.191 | 1.336 |
| Residual | 12.234 | 85.786 |

Table 3: Assess how much variance is explained by urbanization

Urbanization = Urbanization Score

|  | **Flowering success** | | **Flowers per Inflorescence** | | **Flowering time** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.009 | 5.308 | 2.480 | 1.128 | 0.000 | 0.000 |
| Population | 0.002 | 1.459 | 21.526 | 9.792 | 0.000 | 0.000 |
| Block | 0.006 | 3.875 | 15.272 | 6.947 | 0.389 | 0.713 |
| Residual | 0.144 | 89.359 | 180.559 | 82.133 | 54.120 | 99.287 |

|  | **Flowering start** | | **Follicles** | | **Date of first follicle** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 7.672 | 10.791 | 6.195 | 11.434 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 3.123 | 5.764 | 0.000 | 0.000 |
| Block | 4.153 | 5.842 | 5.087 | 9.389 | 7.665 | 13.773 |
| Residual | 59.267 | 83.367 | 39.776 | 73.413 | 47.991 | 86.227 |

|  | **Inflorescences** | |
| --- | --- | --- |
| Group | Variance | PVE |
| Family | 0.000 | 0.000 |
| Population | 0.946 | 7.011 |
| Block | 0.031 | 0.233 |
| Residual | 12.517 | 92.756 |