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 | 0.002 | 1.443 | 0.000 | 0.000 | 0.000 | 0.000 |
| Population | 0.005 | 3.420 | 21.917 | 8.369 | 0.000 | 0.000 |
| Block | 0.006 | 4.083 | 17.310 | 6.610 | 0.082 | 0.146 |
| Residual | 0.142 | 91.053 | 222.646 | 85.020 | 56.035 | 99.854 |

|  | **Flowering start** | | **Follicles** | | **Date of first follicle** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 6.681 | 9.564 | 0.000 | 0.000 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Block | 4.824 | 6.905 | 3.955 | 7.117 | 2.752 | 5.186 |
| Residual | 58.358 | 83.531 | 51.618 | 92.883 | 50.314 | 94.814 |

|  | **Inflorescences** | |
| --- | --- | --- |
| Group | Variance | PVE |
| Family | 0.000 | 0.000 |
| Population | 1.023 | 7.409 |
| Block | 0.000 | 0.000 |
| Residual | 12.789 | 92.591 |

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 | 0.002 | 1.439 | 3.917 | 1.507 | 0.000 | 0.000 |
| Population | 0.006 | 3.593 | 16.862 | 6.489 | 0.000 | 0.000 |
| Block | 0.006 | 4.077 | 17.130 | 6.592 | 0.069 | 0.123 |
| Residual | 0.142 | 90.891 | 221.955 | 85.412 | 56.357 | 99.877 |

|  | **Flowering start** | | **Follicles** | | **Date of first follicle** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 7.092 | 10.098 | 0.000 | 0.000 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 0.415 | 0.743 | 0.000 | 0.000 |
| Block | 4.805 | 6.842 | 3.942 | 7.055 | 3.112 | 5.811 |
| Residual | 58.337 | 83.060 | 51.518 | 92.202 | 50.447 | 94.189 |

|  | **Inflorescences** | |
| --- | --- | --- |
| Group | Variance | PVE |
| Family | 0.000 | 0.000 |
| Population | 1.135 | 8.156 |
| Block | 0.000 | 0.000 |
| Residual | 12.783 | 91.844 |

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 | 0.002 | 1.453 | 2.159 | 0.838 | 0.000 | 0.000 |
| Population | 0.006 | 3.569 | 16.081 | 6.237 | 0.000 | 0.000 |
| Block | 0.006 | 4.084 | 16.848 | 6.535 | 0.086 | 0.152 |
| Residual | 0.142 | 90.893 | 222.734 | 86.391 | 56.347 | 99.848 |

|  | **Flowering start** | | **Follicles** | | **Date of first follicle** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 6.982 | 9.954 | 0.000 | 0.000 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 0.453 | 0.813 | 0.000 | 0.000 |
| Block | 4.812 | 6.861 | 3.886 | 6.974 | 2.803 | 5.237 |
| Residual | 58.350 | 83.185 | 51.389 | 92.213 | 50.710 | 94.763 |

|  | **Inflorescences** | |
| --- | --- | --- |
| Group | Variance | PVE |
| Family | 0.000 | 0.000 |
| Population | 1.091 | 7.853 |
| Block | 0.000 | 0.000 |
| Residual | 12.807 | 92.147 |