Question: Is there is much genetic variation within populations and families for natural selection to act on?

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|  | **Genetic variation within/among ALL** **populations** | | | |
| Population level | | Family level | |
| PVE | *p* | PVE | *p* |
| ***Growth traits*** | | | | |
| Height, before flowering | 1.404 | 0.207 | 9.45 | **<0.001** |
| Height, after flowering | 1.655 | 0.138 | 8.952 | **<0.001** |
| LDMC | 0.134 | 0.915 | 0 | 1 |
| Mortality\* | 7.667 | 0.786 | 21.344 | 0.883 |
| Ramets, before flowering\* | 5.303 | 0.342 | 16.432 | 0.288 |
| Ramets, after flowering\* | 2.08 | 0.16 | 8.04 | 0.122 |
| Relative growth rate | 0.265 | 0.632 | 0 | 1 |
| SLA | 0 | 1 | 0 | 1 |
| ***Herbivore community*** | | | | |
| *Danaus plexippus* abundance\* |  | 0.45 |  | 0.594 |
| *Labidomera clivicollis* abundance\* |  | 0.592 |  | 0.546 |
| *Liriomyza asclepiadis* abundance\* |  | 1 |  | 0.937 |
| ***Defense traits*** | | | | |
| Herbivory, before flowering: Binary\* | NA | **0.047** | NA | **0.047** |
| Herbivory, before flowering: Quantitative | 0.428 | 0.694 | 0.366 | 0.865 |
| Herbivory, after flowering: Binary\* | NA | 0.5 | 2.721 | 0.503 |
| Herbivory, after flowering: Quantitative | 0 | 1 | 1.42 | 0.352 |
| Latex exudation | 3.942 | **0.039** | 4.612 | 0.169 |
| Weevil damage: Binary\* | 1.39 | 0.468 | 8.203 | 0.442 |
| Weevil damage: Quantitative | 0.707 | 0.53 | 3.35 | 0.108 |
| ***Reproductive traits*** | | | | |
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*PVE = percent variance explained*

\*Variables were analyzed with generalized linear mixed models. PVE was calculated as: random effect variance/(random effect variance + residual variance) with the *get\_variance()* function from the *insight* R package. Remaining variables were analyzed with general linear mixed models and PVE was calculated as: random effect variance/(random effect variance + residual variance) with the *VarCorr()* function from the *lme4* R package.

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|  | **Genetic variation within/among ONLY URBAN populations and subtransects** | | | | |
| Population level | | Family level | | Transect level |
| PVE | *p* | PVE | *p* | *p* |
| ***Growth traits*** | | | | | |
| Height, before flowering | 0.967 | 0.448 | 9.721 | **<0.001** | 0.328 |
| Height, after flowering | 1.437 | 0.309 | 10.237 | **<0.001** | 0.36 |
| LDMC | 0 | 1 | 0.985 | 0.855 | 0.228 |
| Mortality\* | 7.748 | 0.321 | 23.916 | 0.091 | 0.881 |
| Ramets, before flowering\* | 6.993 | 0.102 | 18.649 | 0.113 | 0.228 |
| Ramets, after flowering\* | 2.082 | 0.102 | 8.63 | *0.089* | 0.477 |
| Relative growth rate | 0.719 | 0.306 | 0 | 1 | 0.319 |
| SLA | 1.109 | 0.548 | 0 | 1 | 0.115 |
| ***Herbivore community*** | | | | | |
| *Danaus plexippus* abundance\* |  | **0.038** |  | **0.016** | 0.943 |
| *Labidomera clivicollis* abundance\* |  | **0.002** |  | 1 | 0.308 |
| *Liriomyza asclepiadis* abundance\* |  | 0.846 |  | 1 | 0.708 |
| ***Defense traits*** | | | | | |
| Herbivory, before flowering: Binary\* | NA | 0.474 | NA | 0.706 | 0.621 |
| Herbivory, before flowering: Quantitative | 0 | 1 | 1.74 | 0.489 | 0.773 |
| Herbivory, after flowering: Binary\* | NA | 0.222 | NA | 0.394 | 0.45 |
| Herbivory, after flowering: Quantitative | 0 | 1 | 1.566 | 0.381 | *0.069* |
| Latex exudation | 3.261 | 0.165 | 6.95 | *0.09* | 0.822 |
| Weevil damage: Binary\* | 1.376 | 0.345 | 9.856 | 0.611 | 0.988 |
| Weevil damage: Quantitative | 0.843 | 0.53 | 2.673 | 0.295 | **0.028** |
| ***Reproductive traits*** | | | | | |
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