Appendix S2

Table S1: Selection gradient analyses for three traits, flowering phenology, flower number, and shoot height, of the plant *G. pneumonanthe* in 2010 (N = 2000 plants in 20 populations) and 2011 (N = 1598 plants in 16 populations), using the mean flower developmental stage (rather than the stage of the most advanced flower) as the estimate of phenology. Results are from linear models including: A) only linear effects, B) linear, quadratic and interaction effects. All models included effects of population × trait interactions. Fitness was estimated by the number of intact fruits. Traits were standardized and fitness relativized within populations before analyses.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source of variation | |  | 2010 |  |  | 2011 |
| df | F |  | df | F |
| A) Linear terms | |  |  |  |  |  |
|  | Phenology (early flowering) | 1 | 2.24 |  | 1 | 0.81 |
|  | Flower number | 1 | 16.23\*\*\* |  | 1 | 10.13\*\* |
|  | Shoot height | 1 | 0.22 |  | 1 | 2.54 |
|  | Population × Phenology | 19 | 3.10\*\*\* |  | 15 | 1.63\* |
|  | Population × Flower number | 19 | 4.78\*\*\* |  | 15 | 2.56\*\*\* |
|  | Population × Shoot height | 19 | 1.12 |  | 15 | 2.63\*\* |
|  |  |  |  |  |  |  |
| B) Non-linear terms | |  |  |  |  |  |
|  | Phenology 2 | 1 | 0.28 |  | 1 | 0.00 |
|  | Flower number 2 | 1 | 0.07 |  | 1 | 1.73 |
|  | Shoot height 2 | 1 | 1.31 |  | 1 | 0.01 |
|  | Pop. × Phenology 2 | 19 | 0.63 |  | 15 | 0.92 |
|  | Pop. × Flower number 2 | 19 | 1.81\* |  | 15 | 2.09 \*\* |
|  | Pop. × Shoot height 2 | 19 | 1.06 |  | 15 | 0.36 |
|  | Phenology × Flower number | 1 | 3.63 |  | 1 | 0.00 |
|  | Phenology × Shoot height | 1 | 0.78 |  | 1 | 0.30 |
|  | Flower number × Shoot height | 1 | 0.30 |  | 1 | 0.74 |
|  | Pop. × Phenology × Flower number | 19 | 2.38 \*\*\* |  | 15 | 2.41\*\* |
|  | Pop. × Phenology × Shoot height | 19 | 0.80 |  | 15 | 0.57 |
|  | Pop. × Flower number × Shoot height | 19 | 1.03 |  | 15 | 2.21 \*\* |

\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001