**Online Resources**

**Online Resource 1: Sampling locations**

Sampling locations for each species/population of three species tested in common gardens at the Mesic site, UC Riverside, CA and the Desert site, Blue Diamond, NV.

|  |  |  |
| --- | --- | --- |
| **Species / Populations** | **Sample** | **Location** |
| *Brassica tournefortii*Desert | Coachella Valley  | 33°41'19.77"N, 116° 6'46.45"W |
| Mojave National Preserve | 35° 9'28.59"N, 115°33'17.63"W |
| *Brassica tournefortii*Mesic | UC Riverside | 33°58'7.92"N, 117°19'23.34"W |
| Box Springs Mountain | 33°58'52.06"N, 117°17'22.87"W |
| *Brassica nigra* | Crystal Cove State Park | 33°34'25.13"N, 117°48'59.16"W |
| Corona | 33°46'15.27"N, 117°29'8.13"W |
| *Hirschfeldia incana* | Box Springs Mountain | 33°58'52.06"N, 117°17'22.87"W |
| Fallbrook | 33°22'35.56"N, 117°14'17.43"W |

**Online Resource 2: Seeding emergence.**

Rate of seedling emergence for four species/populations grown outdoors in Year 1 at the Mesic site, UC Riverside (log-rank chi-square = 45.4, DF = 3, P < 0.001), and the Desert site, Blue Diamond (log-rank chi-square = 3.0, DF = 3, P = 0.391), outdoors at UCR in Year 2 (log-rank chi-square = 1.75m DF = 3, P = 0.628), and in a greenhouse at UCR in Year 3 (log-rank chi-square = 46.6, DF = 3, P < 0.001). **Online Resource 4: Minimum temperatures.**

**Days from planting**

**Online Resource 3:** Daily maximum, minimum, and mean temperatures in °C. a) 2004-2005, outdoors at the Mesic Site, UC Riverside (UCR), CA; b) 2004-2005, outdoors at the Desert Site, Blue Diamond (BD), NV; c) 2005-2006, outdoors at UCR; d) 2006-2007, greenhouse at UCR.

Lowest daily temperatures in Year 1 at UC Riverside, CA and Blue Diamond, NV.





**\***Samples correspond with Online Resource 1.CV = Coachella Valley, MD = Mojave Desert (Mojave National Preserve), BS = Box Springs Mountain, UCR = UC Riverside, FB = Fallbrook, CC = Crystal Cove State Park, TF = Tom’s Farms (Corona).

**Online Resource 5: Tests between population samples.**

Tests between samples of populations in Year 1 at UC Riverside, CA (Mesic Site) and Blue Diamond, NV (Desert Site). Population abbreviations follow Fig. 1. Maximum height and leaf number are tested using a mixed model REML analysis with plants within pot (A and B) and block as random effects and sample as the fixed effect. Phenological stages are tested using the Kaplan-Meir method of survival analysis and the log-rank test. Significant differences are indicated in **bold** text.

 **Online Resource 6:** **Mixed-model parameters and tests.**

Parameters and significance tests for mixed-model REML analysis of silique number and fecundity of species/populations at two sites and two treatments in three experiments.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | No. Siliques | Fecundity |
|  |  | Adj. R2 | DF | F | P | Adj. R2 | DF | F | P |
| Year 1 | site | 0.84 | 1 | 107.01 | <0.001 | 0.59 | 1 | 28.12 | <0.001 |
| population | 3 | 53.14 | <0.001 | 3 | 6.19 | 0.005 |
| site\*population | 3 | 47.12 | <0.001 | 3 | 5.13 | 0.01 |
| Year 2 | treatment | 0.94 | 1 | 104.7 | <0.001 | 0.88 | 1 | 13.59 | <0.001 |
| biotype | 3 | 325.56 | <0.001 | 3 | 314.71 | <0.001 |
| tmt\*population | 3 | 71.99 | <0.001 | 3 | 19.56 | <0.001 |
| Year 3 | treatment | 0.93 | 1 | 385.95 | <0.001 | 0.79 | 1 | 209.91 | <0.001 |
| biotype | 3 | 81.43 | <0.001 | 3 | 6.42 | <0.001 |
| tmt\*population | 3 | 56.79 | <0.001 | 3 | 5.64 | 0.002 |

**Online Resource 7:** Volumetric water content (VWC, %) of soil water treatments. a) 2005-2006, sandy growth medium, pots placed outdoors; b) 2006-2007, peat and sand growth medium, pots placed in greenhouse. Points show VWC immediately prior to watering.

