# Supporting Information


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### SI Methods

We constructed a phylogenetic tree of all our species using the program PHYLOMATIC (1) (Fig. S1). This program assembles a phylogeny using a backbone plant mega-tree based on a variety of sources primarily involving DNA studies. Because the resulting tree showed many polytomies at the family level, we resolved within-family relationships using the following recently published phylogenies: Asteraceae (2), Boraginaceae (3), Brassicaceae (4), Campanulaceae (5, 6), Caryophyllaceae (7), Convolvulaceae (8), Lamiaceae (9), Malvaceae (10), Onagraceae (11), Papaveraceae (12), Ranunculaceae (12), and Solanaceae (8). We adjusted the branch lengths for the resulting tree using the bladj function in PHYLOCOM (13), which calibrates unknown node ages by linear interpolation of ages from Wikström et al. (14).


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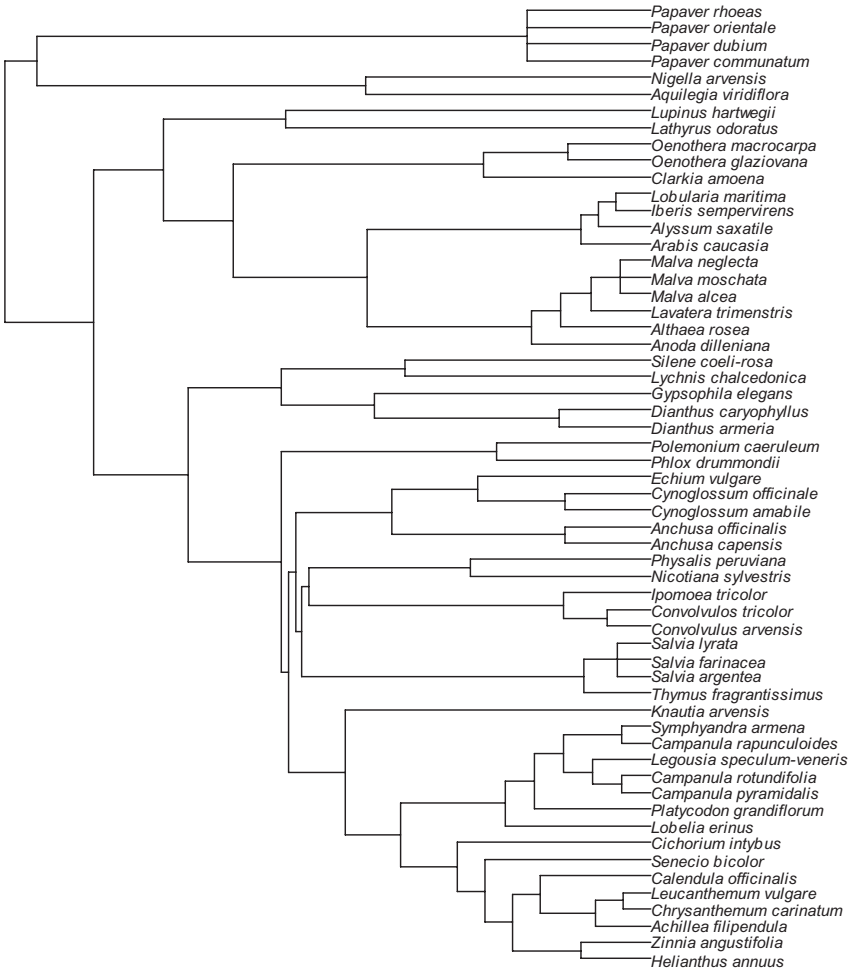


**Fig. S1.** Phylogenetic tree of the 58 plant species used in the three experiments.

**Table S1. Raw and phylogenetically corrected correlations between species traits, including the interaction with the factor "status" (wild or cultivated plant species), assessed with generalized least squares correlation models**

| | | | Raw correlations | | | | Phylogenetically corrected correlations | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Y variable | X variable | *n* | X variable | Status | Status × X variable | AIC | X variable | Status | Status × X variable | AIC |
| Induced resistance | Constitutive resistance | 58 | −0.110 ± 0.054** | −0.084 ± 0.040** | −0.249 ± 0.099** | −127.4 | −0.155 ± 0.062** | −0.102 ± 0.037*** | −0.288 ± 0.092*** | −86.4 |
| Relative growth rate | Constitutive resistance | 51 | −0.079 ± 0.043* | 0.077 ± 0.037** | 0.166 ± 0.086* | −131.5 | −0.053 ± 0.034 | 0.083 ± 0.025*** | 0.162 ± 0.055*** | −129.2 |
| Relative growth rate | Induced resistance | 51 | 0.073 ± 0.136 | 0.015 ± 0.018 | −0.030 ± 0.197 | −130.8 | −0.016 ± 0.111 | 0.020 ± 0.014 | −0.123 ± 0.133 | −127.3 |
| Competitive ability | Constitutive resistance | 53 | −0.285 ± 0.585 | 0.671 ± 0.458 | 1.285 ± 1.190 | 116.2 | −0.85 ± 0.533 | −0.149 ± 0.382 | −0.715 ± 0.834 | 130.8 |
| Competitive ability | Induced resistance | 53 | −0.923 ± 1.720 | 0.149 ± 0.232 | 1.452 ± 2.615 | 113.6 | 2.436 ± 1.367* | −0.045 ± 0.193 | 0.857 ± 1.796 | 122.7 |

Shown are coefficients ± SEs (SEM) and the value for the Akaike information criterion (AIC).
*$P < 0.1$; **$P < 0.05$; ***$P < 0.01$.

**Table S2. Raw and phylogenetically corrected correlations between species traits, separately for wild and cultivated plant species, assessed with generalized least squares correlation models**

| Y variable | X variable | Wild plants | | | Cultivated plants | | | Phylogenetic correction |
|---|---|---|---|---|---|---|---|---|
| | | *N* | X-variable | AIC | *n* | X-variable | AIC | |
| Induced resistance | Constitutive resistance | 18 | −0.358 ± 0.091*** | −31.1 | 40 | −0.109 ± 0.052** | −94.8 | No |
| Induced resistance | Constitutive resistance | 18 | −0.521 ± 0.095**** | −18.6 | 40 | −0.162 ± 0.049*** | −83.8 | Yes |
| Relative growth rate | Constitutive resistance | 13 | 0.113 ± 0.052* | −27.2 | 38 | −0.043 ± 0.040 | −92.7 | Yes |
| Relative growth rate | Induced resistance | 13 | −0.065 ± 0.082 | −24.5 | 38 | −0.076 ± 0.123 | −94.2 | Yes |
| Competitive ability | Constitutive resistance | 15 | −2.576 ± 1.028** | 45.2 | 38 | −0.416 ± 0.512 | 90.7 | Yes |
| Competitive ability | Induced resistance | 15 | 4.363 ± 1.248*** | 41.1 | 38 | 2.816 ± 1.438* | 85.6 | Yes |

Shown are coefficients ± SEs (SEM) and the value for the Akaike information criterion (AIC).
*$P < 0.1$; **$P < 0.05$; ***$P < 0.01$; ****$P < 0.001$.

**Table S3. List of the 18 wild plant species (W) and 40 cultivated ornamental garden plant species (C) used in our three experiments to assess different life-history traits**

| Family | Species name | Status | Resistance | Growth rate | Competitive ability |
|---|---|---|---|---|---|
| Asteraceae | *Achillea filipendulina* | C | + | + | + |
| | *Calendula officinalis* | C | + | + | + |
| | *Chrysanthemum carinatum* | C | + | | |
| | *Helianthus annuus* | C | + | + | + |
| | *Senecio bicolor* | C | + | + | + |
| | *Zinnia angustifolia* | C | + | + | + |
| | *Cichorium intybus* | W | + | + | + |
| | *Leucanthemum vulgare* | W | + | + | + |
| Boraginaceae | *Anchusa capensis* | C | + | + | + |
| | *Cynoglossum amabile* | C | + | + | + |
| | *Anchusa officinalis* | W | + | | + |
| | *Cynoglossum officinalis* | W | + | + | + |
| | *Echium vulgare* | W | + | + | + |
| Brassicaceae | *Alyssum saxatile* | C | + | + | |
| | *Arabis caucasia* | C | + | + | + |
| | *Iberis sempervirens* | C | + | + | + |
| | *Lobularia maritima* | C | + | + | + |
| Campanulaceae | *Campanula pyramidalis* | C | + | + | + |
| | *Lobelia erinus* | C | + | + | + |
| | *Platycodon grandiflorus* | C | + | + | + |
| | *Symphyandra armena* | C | + | + | + |
| | *Campanula rapunculus* | W | + | | |
| | *Campanula rotundifolia* | W | + | + | |
| | *Legousia speculum-veneris* | W | + | | |
| Caryophyllaceae | *Dianthus caryophyllus* | C | + | + | + |
| | *Gypsophila elegans* | C | + | + | + |
| | *Lychnis chalcedonica* | C | + | + | + |
| | *Silene coeli-rosa* | C | + | + | + |
| | *Dianthus armeria* | W | + | + | + |
| Convolvulaceae | *Convolvulos tricolor* | C | + | + | + |
| | *Ipomoea tricolor* | C | + | + | + |
| | *Convolvulus arvensis* | W | + | + | + |
| Dipsacaceae | *Knautia arvensis* | W | + | + | + |
| Fabaceae | *Lathyrus odoratus* | C | + | + | + |
| | *Lupinus hartwegii* | C | + | + | + |
| Lamiaceae | *Salvia argentea* | C | + | + | + |
| | *Salvia farinacea* | C | + | + | + |
| | *Salvia lyrata* | C | + | + | + |
| | *Thymus fragrantissimus* | C | + | + | + |
| Malvaceae | *Althaea rosea* | C | + | + | + |
| | *Anoda dilleniana* | C | + | + | + |
| | *Lavatera trimestris* | C | + | + | + |
| | *Malva alcea* | W | + | + | + |
| | *Malva moschata* | W | + | + | + |
| | *Malva neglecta* | W | + | + | + |
| Onagraceae | *Clarkia amoena* | C | + | + | + |
| | *Oenothera glazioviana* | C | + | + | + |
| | *Oenothera macrocarpa* | C | + | + | + |
| Papaveraceae | *Papaver communatum* | C | + | + | + |
| | *Papaver orientale* | C | + | | + |
| | *Papaver dubium* | W | + | | + |
| | *Papaver rhoeas* | W | + | | + |
| Polemoniaceae | *Phlox drummondii* | C | + | + | + |
| | *Polemonium caeruleum* | W | + | + | + |
| Ranunculaceae | *Aquilegia viridiflora* | C | + | + | + |
| | *Nigella arvensis* | W | + | + | + |
| Solanaceae | *Nicotiana sylvestris* | C | + | + | + |
| | *Physalis peruviana* | C | + | + | + |

**Table S4. Raw and phylogenetically corrected correlations between species traits assessed with generalized least squares correlation models**

| | | | Raw correlation | | Phylogenetically corrected correlation | |
|---|---|---|---|---|---|---|
| Y variable | X variable | *n* | Coefficient ± SEM | AIC | Coefficient ± SEM | AIC |
| Induced resistance | Constitutive resistance | 58 | −0.249 ± 0.058**** | −90.1 | −0.185 ± 0.047**** | −134.1 |
| Relative growth rate | Constitutive resistance | 51 | −0.0398 ± 0.0381 | −140.6 | −0.0063 ± 0.034 | −133.6 |
| Relative growth rate | Induced resistance | 51 | −0.0654 ± 0.096 | −141.7 | −0.1126 ± 0.0639* | −138.0 |
| Competitive ability | Constitutive resistance | 53 | −0.05 ± 0.49 | 115.2 | −0.972 ± 0.465** | 128.1 |
| Competitive ability | Induced resistance | 53 | −0.095 ± 1.27 | 113.3 | 2.93 ± 0.85*** | 120.3 |

Shown are regression coefficients ± SEs (SEM) and the value of the Akaike information criterion (AIC).
*$P < 0.1$; **$P < 0.05$; ***$P < 0.01$; ****$P < 0.001$.