**SUPPLEMENTAL MATERIAL**

**Supplemental figure 1:** Photograph of a representative block of plants growing in competition with winter canola.

**Supplemental table 1:** Statistical scores from power analysis indicating the minimum number of blocks needed for any given measure.

**Supplemental table 2:** Statistical analysis of variation of measured phenological traits among treatments for each experiment.

**Supplemental table 3:** RNAseq data showing gene annotation, expression values, and statistical analysis of gene expression differences for both experiments 1 and 2.

**Supplemental table 4:** Gene set enrichment data for all comparisons.