

## Description of Additional Supplementary Files

### Supplementary Data 1

**Description:** Population-genetic library metadata, including library sequencing identifiers, public repository information and sequencing effort data for each of the re-sequenced genotypes used in the population genetic analysis.

### Supplementary Data 2

**Description:** Demographic modeling data. including effective population size ( $N_e$ ) and relative cross coalescence ( $cc$ ) along with the time interval and bootstrap confidence interval.

### Supplementary Data 3

**Description:** List of 1:1 orthologs, including the list of reciprocal best hit (RBH) orthologs, where the highest scoring HAL2-FIL2 protein blat hit matches the gene model of the FIL2-HAL2 protein blat hit. As a naming convention, these gene pairs are collapsed to their HAL2 gene identifier.

### Supplementary Data 4

**Description:** Categorization of orthogroups, including a list of genes, their assigned orthogroups and categorization of orthogroups following Table 1.

### Supplementary Data 5

**Description:** List of private gene models including a list of gene IDs that are private to either HAL2 or FIL2 annotations.

### Supplementary Data 6

**Description:** Summary of presence-absence variation. This file contains the list of genes that display presence-absence variation. Categories follow Table 1.

### Supplementary Data 7

**Description:** eQTL library metadata. This file contains library sequencing identifiers, public repository information and sequencing effort data for each of the total RNA-sequenced F2, F1 and parental libraries in our drought/recovery eQTL experiment.

### Supplementary Data 8

**Description:** eQTL statistical output. This file contains statistical output from the eQTL analysis, including effect direction, positional categorization and statistical support.

### Supplementary Data 9

**Description:** CDS variants by gene. This file contains the gene-by-gene summary output from SNPeff and gene-by-gene counts of total insertion/deletion (INDEL) polymorphism. We categorized both INDELS and SNPs into groups based on their predicted effect.

### Supplementary Data 10

**Description:** Transcription factor binding affinity. This file the gene-by-gene affinity of each of 35 transcription factors to the 2kb upstream region of each gene. For each TF, the affinity was scored by a discrete count.