

Venn diagram showing unique and shared gene families between and among the three sequenced grasses (maize, rice, and sorghum) and the dicot, Arabidopsis. (Schnable, Ware, et al., Science, 20 November 2009, 326: 1112-1115)

### Germplasm

Gramene's germplasm database summarizes our known stocks for A. thaliana, Tripsacum, Z. mays, and several species from Oryza. Germplasm are linked to their experiments in the diversity module as well as associated markers and libraries.

# Diversity

The Gramene Genetic Diversity module integrates genotype, phenotype, and germplasm data from rice, maize and *Arabidopsis*. The Diversity module aims to facilitate study of genetic variation within and between populations of plants, and, to

help illuminate how genetic diversity
relates to observable traits and
evolutionary patterns. Gramene Diversity
houses a growing number of large-scale
SNP chip datasets, and offers tools to
query and analyze data, such as GDPC,
TASSEL, and our SNP Query tool that allows
mining for variation by genomic region and
associated genes, QTL, traits, and ontologies.

#### **Proteins**

Gramene's protein database provides collective information on 265K Swissprot-Trembl protein entries from family Poaceae and are annotated by the Gene Ontology (GO) terms for molecular function, biological process, and cellular components.

#### Genes

The genes database includes descriptions of genes and alleles associated with morphological, developmental and agronomically important phenotypes, variants of physiological characters, biochemical functions and isozymes.

#### Markers, Sequences and Maps

Gramene holds 49M plant sequences and genetic markers from GenBank and various projects and important mapping studies in crop research. We add or update our database every release and work closely with plant researchers to publish new data in many useful formats.

#### Web Services

- DAS for sequence alignments
- Diversity data via TASSEL and GDPC
- Public MySQL server

## Funding

Current work is being supported by the NSF Plant Genome Research Resource grant award #0703908...





# GRAMENE

An Internet resource for comparative plant genomics that offers genome browsers, genes, proteins, QTL, genetic diversity data, biological pathways, ontologies, and genetic markers and sequences in addition to BLAST, BioMart and FTP interfaces to a wealth of plant data.

# Web:

http://www.gramene.org/

Email:

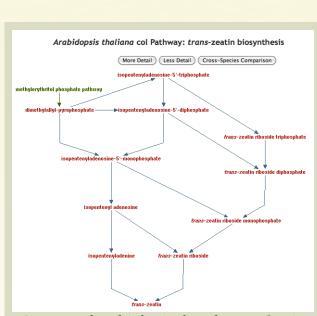
gramene@gramene.org

RSS:

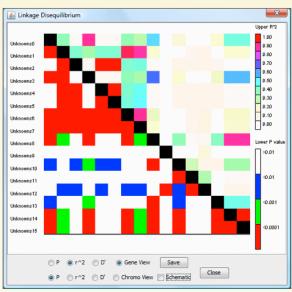
http://news.gramene.org/







Gramene has biological pathways for 13 species. Build 32 added databases for *Zea mays* and *Brachypodium distachyon*.



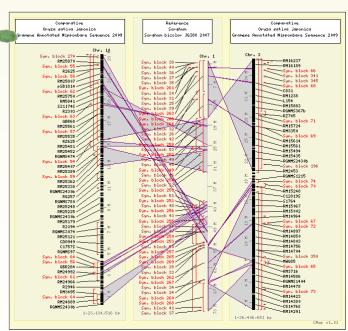
The Tassel program can be used to analyze Gramene's diversity data, generate LD plots, run MLM/GLM analyses, and more.



The new multi-species view shows alignments in the context of gene annotations across multiple species.



Phylogenetic tree for Arabidopsis gene PNT1, a Glycosyltransferase, showing conservation throughout the eukaryotic lineage.



At Gramene you can compare over 200 maps from 29 plant species.