

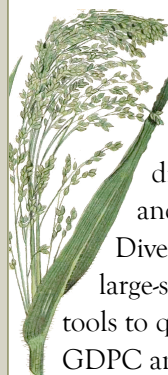
Venn diagram showing unique and shared gene families between and among the three sequenced grasses (maize, rice, and sorghum) and the dicot, *Arabidopsis* (Schnable et al. 2009, Science 326: 1112–1115).

#### Germplasm

Gramene's new germplasm database is targeted at plant breeders. It attempts to summarize all of Gramene's information in the context of known stocks. In its initial release, it focuses on rice, only, but it will be expanded in the future.

#### Diversity

The Gramene Genetic Diversity module integrates genotype, phenotype, and germplasm data from several plant species, with an emphasis on 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 and TASSEL.

#### 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:

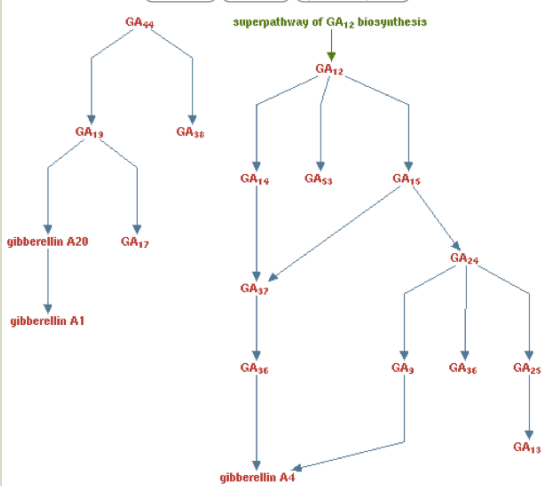
[gramene@gramene.org](mailto:gramene@gramene.org)

#### RSS:

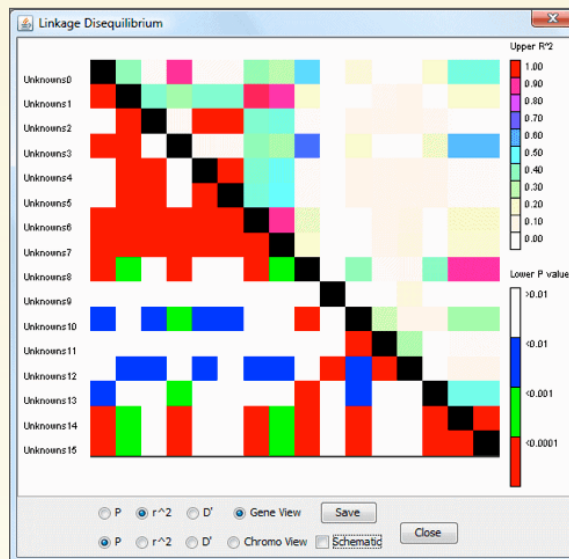
<http://news.gramene.org/>



# ***Zea mays* mays** Pathway: superpathway of gibberellin biosynthesis



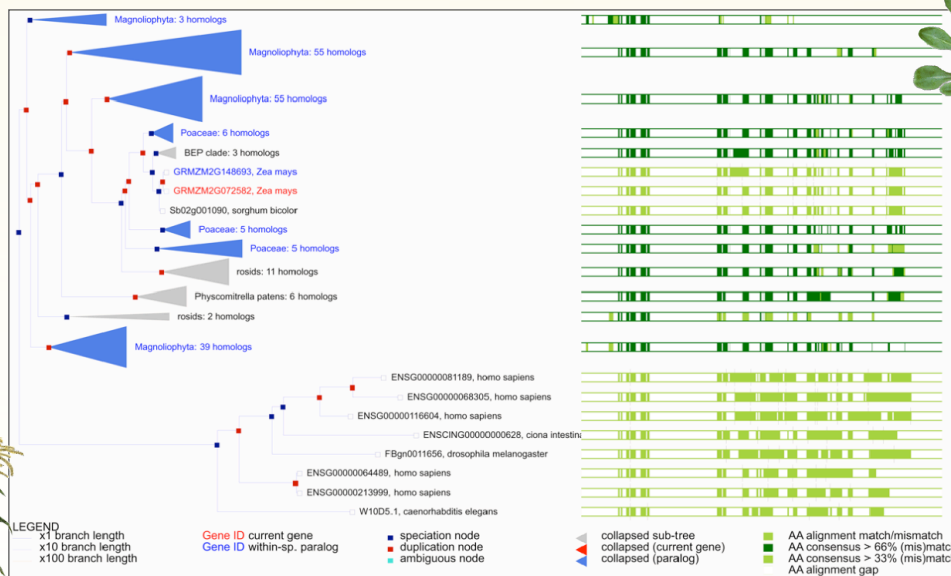
Gramene has biological pathways for 13 species. Build 32 added databases for *Zea mays* and *Brachypodium distachyon*.



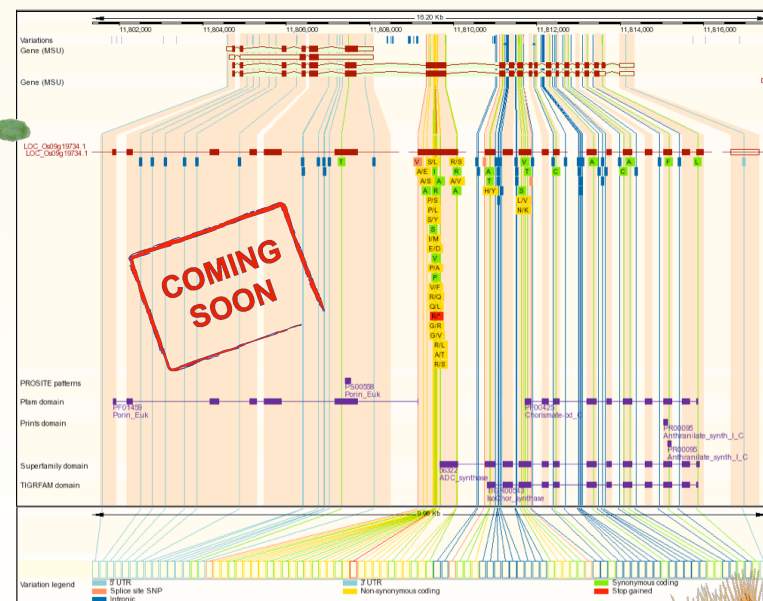
The Tassel program can be used to analyze Gramene's diversity data, generate LD plots, run MLM/GLM analyses, and more.



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



Phylogenetic tree for *Zea mays* gene *mad3*, a MADS-box protein, showing conservation throughout the eukaryotic lineage.



SNP diversity in the context of functional domains.