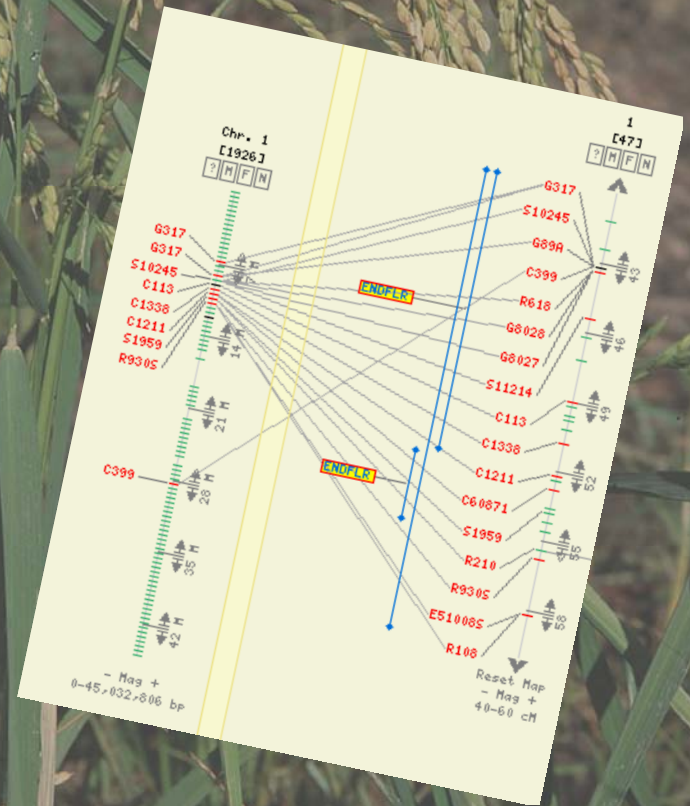
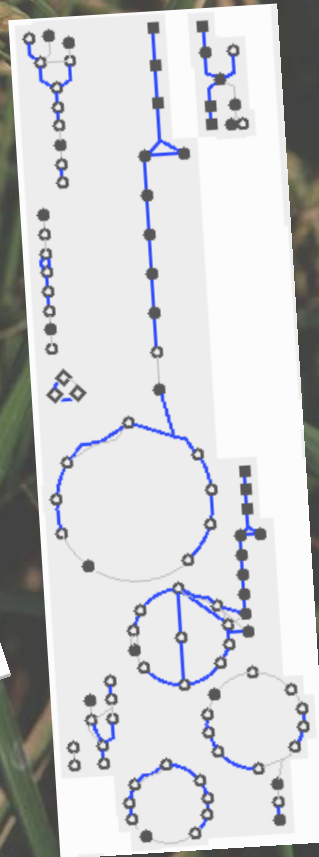


Tutorial for:

GRAMENE WEBSITE NAVIGATION



Correspondences	No correspondences.
Clone	(GA)15
Repeat Motif	GAGTCGACGAGCGGCAGA
Forward Primer	CTGCGAGCGACGGTAACA
Reverse Primer	E5
Anneal Temperature	55
Expected PCR Product Size	112



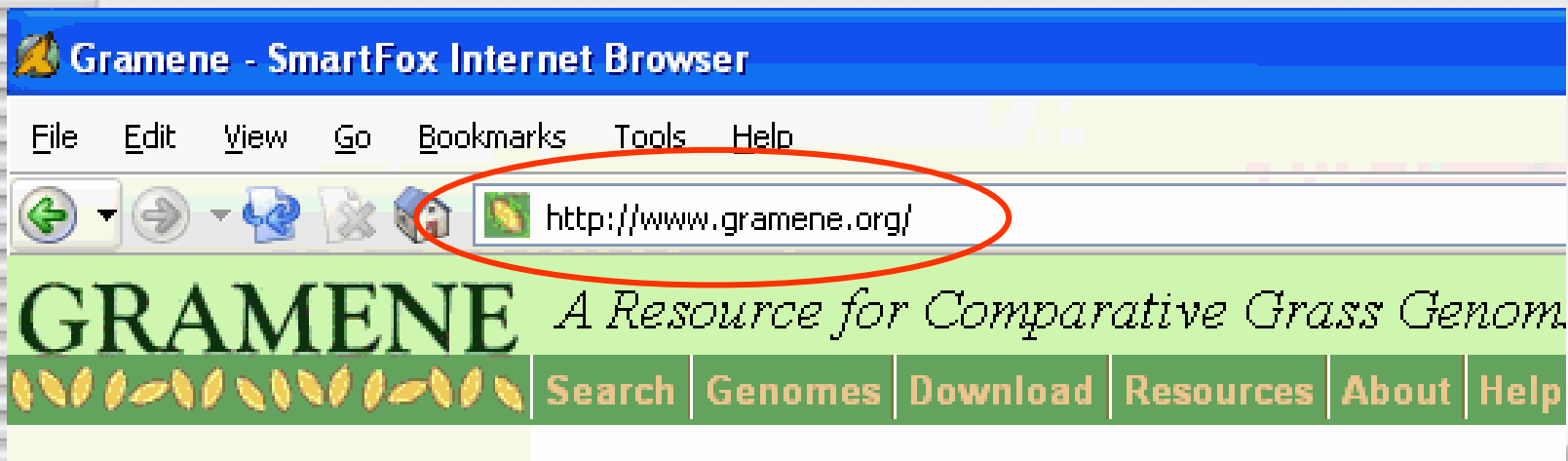
Accessing Gramene

To access Gramene, open your internet browser (such as Netscape, IE, or Safari).

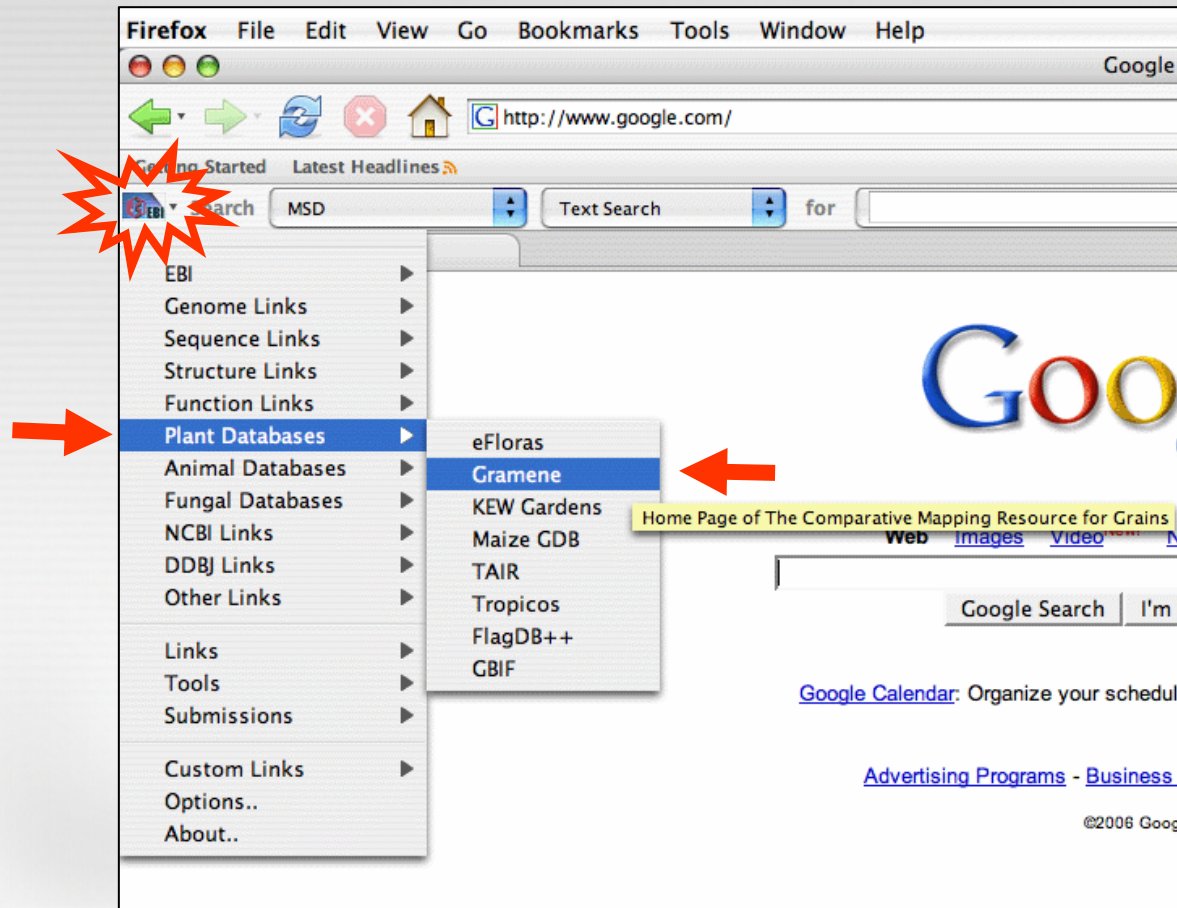
(If some website features don't work correctly, try using a different browser. We recommend a Mozilla based browser.)

Option 1 -

- In the address bar type "www.gramene.org" and press "Enter" to open the **Gramene Home Page**.



Option 2: Access Gramene on Mozilla via Biobar



Home Page Navigation

www.gramene.org

*(If some website features don't work correctly,
try using a different browser)*

Date and Release # of current
version of database. (Only on
home page)

The screenshot shows the GRAMENE website home page. The header features the GRAMENE logo, the tagline "A Resource for Comparative Grass Genomics", and the version information "v23 (November 2006)". A navigation bar contains links for Search, Genomes, Species, Download, Resources, About, Help, and Feedback. The main content area is divided into three columns: Quick Search, Quick Start, and Features/News. The Quick Search column includes a search box and a link to the Home page. The Quick Start column lists GENOMES, PROTEINS, and MAPS sections. The Features/News column includes a link to the Feedback page. Three blue callout boxes provide additional instructions: one points to the GRAMENE logo, another points to the Feedback link, and a third points to the Feedback link again.

GRAMENE A Resource for Comparative Grass Genomics v23 (November 2006)

[Search](#) [Genomes](#) [Species](#) [Download](#) [Resources](#) [About](#) [Help](#) [Feedback](#)

Quick Search

All Available

Search a single module plus Diversity, Part available

Click on Gramene Logo to return to the Home page

Quick Start

GENOMES: Browse sequenced genomes for [Rice](#), [Maize](#) & [Arabidopsis](#); Look for [rice/maize](#) [GrameneMart](#); Search for sequences using [GO](#) [Ontology](#).

PROTEINS: Search by [PFam](#) [GO](#) [Slim](#).

MAPS: Browse genetic or physical maps for [Rice](#), [Maize](#), [Wheat](#), [Barley](#), [Oats](#), [Sorghum](#), and other grasses, or use the Comparative Map Viewer ([CMap](#)) to compare maps of different types and species.

Features/News

Gramene Release 23

[Feedback](#)

Select "feedback" from any page to reference that page and open a communication box. Use for asking questions or giving feedback.

Have Questions...?

- Gramene now has **tutorials** for every module, also

Visit with us at

Quick search –
general search of
multiple modules plus
website pages

Home Page

GRAMENE *A Resource for Comparative Grass Genomics* v23 (November 2006)

Search Genomes Species Download Resources About Help Feedback

Quick Search

All Available
Search

Search a single module or all available modules plus online documentation. Diversity, Pathways, BLAST and Mart not available in this search.

Have Questions...?

- Gramene now has **tutorials** for every module, also recommended for experienced users.
- Ask questions through **Feedback** or **Email**.
- See **FAQ** for questions and answers.

Gramene Tip:

Gramene's source of gene predictions is the **TIGR** database.

- Browse All**

Quick Start

- GENOMES:** Browse sequenced genomes for [Rice](#), [Maize](#) & [Arabidopsis](#); Look for [rice/maize synteny](#); Narrow your search with [GrameneMart](#); Search for sequence alignment with [BLAST](#); search by [Gene Ontology](#).
- PROTEINS:** Search by [Pfam](#) or [ProSite](#) or Browse by Gene Ontology using [GO Slim](#).
- MAPS:** Browse genetic or physical maps for [Rice](#), [Maize](#), [Wheat](#), [Barley](#), [Oats](#), [Sorghum](#), and other grasses, or use the Comparative Map Viewer ([CMap](#)) to compare maps of different types and species.
- MARKERS:** Search for Probes (Primers, Overlapping Probes, etc.), and FPContigs, etc.), and Sequence Repeat Ids including [Rice \(Oryza\)](#).
- TRAITS:** Search the [Genes](#) or [QTL](#) database for important phenotype-related loci such as [Rice Genes](#), [Rice QTL](#), [Maize QTL](#). Don't forget to explore traits in [Ontologies](#).

Search for SNP and SSR allelic variation in [wheat](#) germplasms.

NEW: Search for ALL the rice pathways

Featured News

- NEW** Gramene Release 23 [release notes](#).
- NEW** [MaizeSequence.org](#) now available!
- NEW** [Gramene November Newsletter](#)
- [Rice News Worldwide](#) from IRRI

Visit with us at

- [Data Warehouse](#)
- [Tech Notes in Bioinformatics](#), December 4-6,
- [Plant and Animal Genome X Conference](#), January 13-17, 2007 ([the Workshop](#))

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Gramene Help and Tips
give advice on using the
site. Click "All Tips" for
more pointers.

Quick Start helps get
you directly to where
you want to go fast.

News about the
current release and
the grass genomic
community is listed
here, along with a
Gramene Calendar.

Non-home Page Navigation

This heading is on all pages except for the home page.

Title identifies the page being viewed.

Quick search, optionally select a specific database to search, enter a term to search for, and click on “search.”



Click logo to return to **Home** page

Dropdown **Navigation** Bar
(see next slides)

Easily accessible “**Feedback**” button on every page.

Searches

GRAMENE *A Resource for Comparative Grass Genomics* v23 (November 2006)

[Search](#) [Genomes](#) [Species](#) [Download](#) [Resources](#) [About](#) [Help](#) [Feedback](#)

Quick Search

All Available

Search a single module or all available modules plus online documentation.
[Diversity](#), [Pathways](#), [BLAST](#) and [Mart](#) not available in this search.

Have Questions...?

- Gramene now has **tutorials** for every module, also recommended for experienced users.
- Ask questions through [Feedback](#).

Genomes-Ensembl
Maps-CMap
Markers
QTL
Diversity
Genes
Proteins
Pathways
Ontologies
Literature
Sequences-BLAST
All-GrameneMart

Quick Start

sequenced ne
for sequ
PFam or P
or physical maps for [Rice](#), [Maize](#), [Wheat](#),
, and other grasses, or use the Comparative
compare maps of different types and species.

Featured News

Gramene Release 23
se notes.
[MaizeSequence.org](#)
available!
[Gramene November](#)
letter
[News Worldwide](#) from
December

Visit with us at

[Facebook](#)

Note that you are in the QTL module

GRAMENE *QTL* Find anything [Feedback](#)

[Search](#) [Genomes](#) [Download](#) [Resources](#) [About](#) [Help](#)

[QTL Home](#) | [Simple Search](#) | [Power Search](#) | [Help](#) | [Tutorial](#) | [FAQ](#)

Gramene QTL Database

QTL Quick Search:

Each module has its own **module-specific navigation bar** below the main Gramene navigation bar.

Module specific searches will search ONLY that module

Genomes

Click Logo to return to the Home page

Select **Genomes** to access the genome browser.

The screenshot shows the GRAMENE Genome Browser interface. The top navigation bar includes links for Search, Genomes, Species, Download, Resources, About, and Help. A dropdown menu for 'Genomes' is open, showing options for Rice, Maize, and Arabidopsis. A callout points to the 'Genomes' link in the navigation bar. Another callout points to the 'Rice' and 'Maize' options in the dropdown menu. A third callout points to the 'Oryza sativa' and 'Zea mays' genome entries. A fourth callout points to the 'Rice Synteny Vs Maize FPC Map' section. The left sidebar contains links for Genomes Home, Genomes Help, and Switch Species. The bottom of the page features a date and a link to Genomes Tutorials.

GRAMENE Genome_browser

Search Genomes Species Download Resources About Help Feedback

Find in Genomes

Browser Links

- Genomes Home
- Genomes Help
- Switch Species

Genomes

- Rice
- Maize
- Arabidopsis

Oryza sativa (rice) [TIGR 4]

Zea mays (maize) [Agarose Oct04]

Rice Synteny Vs Maize FPC Map

Rice Chr 1 vs. Maize Go

Example Features

- Gene: d11
- Transcript: Q6ZDE3
- Contig: AP003727

Rice/Maize synteny views are available from either the rice or the maize genome pages.

Select a genome to view.

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See [Genomes Tutorials](#)

Species

GRAMENE Species

Find anything Search

[Search](#) [Genomes](#) [Species](#) [Download](#) [Resources](#) [About](#) [Help](#) [Feedback](#)

[Species](#) | [Rice](#) | [Maize](#) | [Wheat](#) | [Barley](#) | [Oat](#) | [Rice \(Oryza\)](#) | [Maize \(Zea\)](#) | [Wheat \(Triticum\)](#) | [Barley \(Hordeum\)](#) | [Oats \(Avena\)](#) | [Foxtail Millet \(Setaria\)](#) | [Pearl Millet \(Pennisetum\)](#) | [Rye \(Secale\)](#) | [Sorghum \(Sorghum\)](#) | [Rye](#) | [Sorghum](#) | [Wild Rice](#)

Cereal Pages: [Introduction](#) | [Cereal Statistics](#)

Select a **Species** from the menu or the footer.

Select to change specie.

Each species page provides information in many categories

GRAMENE Oryza

[Search](#) [Genomes](#) [Species](#) [Download](#) [Resources](#) [About](#) [Help](#) [Feedback](#)

[Species](#) | [Rice](#) | [Maize](#) | [Wheat](#) | [Barley](#) | [Oats](#) | [Foxtail Millet](#) | [Pearl Millet](#)

Oryza Maps and Statistics

Oryza Species Page: [Introduction](#) | [Facts](#) | [Anatomy](#) | [Taxonomy](#) | [Agronomic Statistics](#) | [Research](#) | [Educational Links](#) | [Nutrition](#) | [Recipes](#) | [News](#) | [Germplasm Resources](#) | [Gramene Statistics](#) | [Gramene Queries](#)

Figure 1^a

Rice Production 2005 (MT)

China 177,254,000

India 100,000,000

USA 10,000,000

Philippines 10,000,000

Thailand 10,000,000

Figure 2^a

2005 Rice Production

<1,000 Metric Tonnes	1,000,000 - 9,999,999 Mt
1,000 - 99,999 Mt	10,000,000 - 49,999,999 Mt
100,000 - 999,999 Mt	50,000,000 - 100,000,000 Mt
	Over 100,000,000 Mt



Downloads

The screenshot shows the GRAMENE website's 'Download' section. The header includes the GRAMENE logo, a 'Download' link, and a search bar. The 'Download' menu is open, showing a list of resources. A blue callout box points to the 'Download' menu with the text: 'Download data or software to install Gramene on your own machine.'

GRAMENE *Download* Find anything Search

[Search](#) [Genomes](#) [Species](#) [Download](#) [Resources](#) [About](#) [Help](#) [Feedback](#)

[Download Index](#)
[FTP Site](#)

[FPC Physical Map \(AGI\)](#)
[Genetic Maps](#)
[In Silico Data](#)
[Microsatellites](#)
[Databases as tab-separated-value files](#)
[MySQL database dumps \(insert statements\)](#)
[Protein Data](#)
[RiceGenes Database \(Archived Copy, October 2000\)](#)
[Blast Databases](#)
[Software](#)
[Script to search for simple sequence repeats in FASTA-formatted DNA sequences --by S.Cartinhour](#)
[Gramene Web Site and supporting code. \(live version\)](#)
[Gramene Web & supporting software by anonymous CVS.](#)

Resources

Definitions of terms, abbreviations and acronyms used. Links to other on-line glossaries

Provides **links** to other websites of interest

Submit a gene or ontology term to the database

Links page of **genetic newsletters** for cereals

Cereal Genome Sequencing Efforts
Cereal Genomic Databases
Functional Genomics
Genomic Research and Education
Tools for Nucleotide and Protein Sequence Analyses

Complete Rice (*Oryza sp.*) Sequences

- [IRGSP sequences](#)
- [TIGR pseudomolecule](#)

Cereal Genome Sequencing Efforts

Rice

- [International Rice Genome Sequencing Project \(IRGSP\)](#) - The International Rice Genome Sequencing Project (IRGSP), a consortium of publicly funded laboratories, was established in 1997 to obtain a high quality, map-based sequence of the rice genome using the cultivar Nipponbare of *Oryza sativa* ssp. *japonica*. It is currently comprised of ten members: Japan, the United States of America, China, Taiwan, Korea, India, Thailand, France, Brazil, and the United Kingdom. The IRGSP adopts the clone-by-clone shotgun sequencing strategy so that each sequenced clone can be associated with a specific position on the genetic map and adheres to the policy of immediate release of the sequence data to the public domain. In December 2004, the IRGSP completed the sequencing of the rice genome. The high-quality and map-based sequence of the entire genome is now available in public databases.

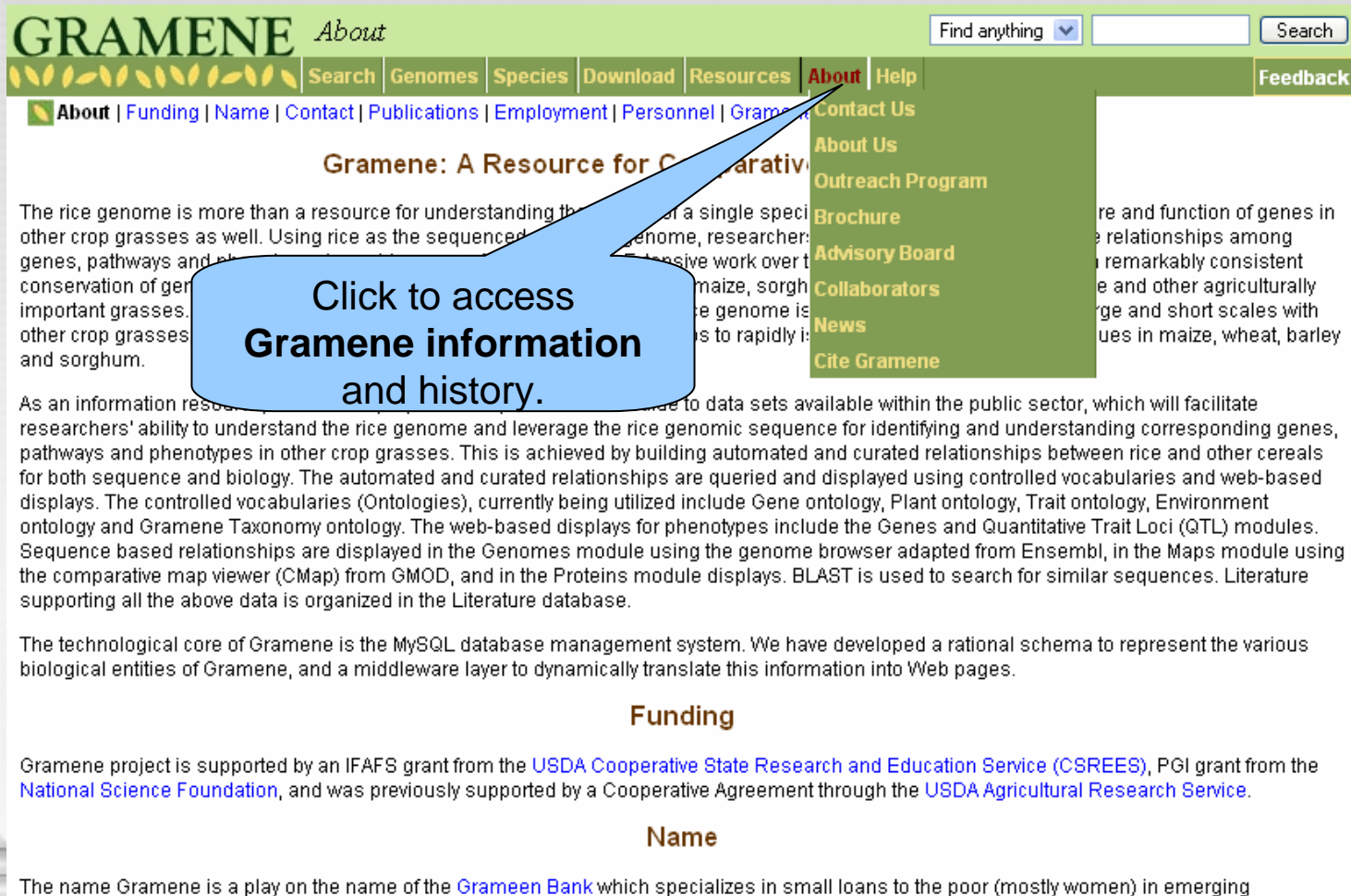
IRGSP Members:

- [Rice Genome Program \(RGP\)](#). Japan RGP is a joint project of the National Institute of Agrobiological Sciences (NIAS)

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About



The screenshot shows the GRAMENE website interface. At the top, there is a green header with the 'GRAMENE' logo and the word 'About' in a script font. To the right of the logo is a search bar with the placeholder text 'Find anything' and a 'Search' button. Below the header is a navigation menu with links: Search, Genomes, Species, Download, Resources, About, and Help. The 'About' link is highlighted with a blue callout box that contains the text 'Click to access Gramene information and history.' Below the navigation menu, there is a section titled 'Gramene: A Resource for Comparative Genomics'. This section contains two paragraphs of text. The first paragraph discusses the rice genome and its use in understanding other crop grasses. The second paragraph describes the information resources available on the website. Below the text, there is a section titled 'Funding' which mentions support from the USDA Cooperative State Research and Education Service (CSREES), PGI grant from the National Science Foundation, and a Cooperative Agreement through the USDA Agricultural Research Service. At the bottom, there is a section titled 'Name' which explains that the name Gramene is a play on the name of the Grameen Bank.

GRAMENE *About*

Find anything

[Search](#) [Genomes](#) [Species](#) [Download](#) [Resources](#) [About](#) [Help](#) [Feedback](#)

[About](#) | [Funding](#) | [Name](#) | [Contact](#) | [Publications](#) | [Employment](#) | [Personnel](#) | [Gramene](#)

Gramene: A Resource for Comparative Genomics

The rice genome is more than a resource for understanding the genome of a single species. It is a resource for understanding the genome of other crop grasses as well. Using rice as the sequenced genome, researchers are identifying genes, pathways and other biological features that are conserved across the grasses. The conservation of genes and pathways among important grasses, such as rice, maize, sorghum, and other crop grasses, is being used to rapidly identify genes and pathways in other crop grasses.

As an information resource, Gramene provides access to data sets available within the public sector, which will facilitate researchers' ability to understand the rice genome and leverage the rice genomic sequence for identifying and understanding corresponding genes, pathways and phenotypes in other crop grasses. This is achieved by building automated and curated relationships between rice and other cereals for both sequence and biology. The automated and curated relationships are queried and displayed using controlled vocabularies and web-based displays. The controlled vocabularies (Ontologies), currently being utilized include Gene ontology, Plant ontology, Trait ontology, Environment ontology and Gramene Taxonomy ontology. The web-based displays for phenotypes include the Genes and Quantitative Trait Loci (QTL) modules. Sequence based relationships are displayed in the Genomes module using the genome browser adapted from Ensembl, in the Maps module using the comparative map viewer (CMap) from GMOD, and in the Proteins module displays. BLAST is used to search for similar sequences. Literature supporting all the above data is organized in the Literature database.

The technological core of Gramene is the MySQL database management system. We have developed a rational schema to represent the various biological entities of Gramene, and a middleware layer to dynamically translate this information into Web pages.

Funding

Gramene project is supported by an IFARS grant from the [USDA Cooperative State Research and Education Service \(CSREES\)](#), PGI grant from the [National Science Foundation](#), and was previously supported by a Cooperative Agreement through the [USDA Agricultural Research Service](#).

Name

The name Gramene is a play on the name of the [Grameen Bank](#) which specializes in small loans to the poor (mostly women) in emerging

Help

The screenshot shows the GRAMENE Documentation page. The header includes the GRAMENE logo, a navigation bar with links like Search, Genomes, Species, Download, Resources, About, Help, and Feedback, and a search box. The main content area is divided into sections: Web Site Help, Glossary, Rice Gene Nomenclature, External Use, Exercises, and a sidebar with links like Site Map, Help Documents, Release Notes, Tutorials, FAQs, Workshop Exercises, Mailing Lists, Rice Gene Nomenclature, and Ask Us. Four blue callout boxes highlight specific features: 'Gramene help docs and documentation' points to the Help menu; 'Searchable Frequently Asked Questions about Gramene, curation, and database modules.' points to the FAQs section; 'Link to info on Rice gene nomenclature' points to the Rice Gene Nomenclature section; and 'E-Lists for discussion and for announcements' points to the Mailing Lists section.

GRAMENE Documentation

Find anything Search

Search Genomes Species Download Resources About **Help** Feedback

Gramene help docs and documentation

- **Web Site Help**
information about the module, and how to conduct a search, as well as discuss search results and offer term definitions.
 - Genomes
 - BLAST
 - Maps
- **Glossary**
- **Rice Gene Nomenclature**
 - Standard Open
 - Document
- **External Use**
 - Linking
 - Installing Gramene
- **Exercises**
Exercises answer biological questions often using multiple modules.
 - **RiceCAP 2006 Workshop** (6/06) Conducting searches, QTL and markers. Introduction to

Searchable Frequently Asked Questions about Gramene, curation, and database modules.

Link to info on Rice gene nomenclature

E-Lists for discussion and for announcements

Site Map
Help Documents
Release Notes
Tutorials
FAQs
Workshop Exercises
Mailing Lists
Rice Gene Nomenclature
Ask Us

Select your preferred format:
a. Gramene
PowerPoint
Adobe PDF

Footer

Click “Species” or
seed images to link to
species pages

Collaborators and **funding sources**
are linked along the bottom



[Home](#)

[Site Map](#)

[About](#)

[Cite
Gramene](#)

Provides an **overview** of
everything on the site

Gramene **purpose**,
history and **people**

Information about
citing Gramene

Last modified: Thu Aug 17 18:56:28 2006

Contact Gramene

The screenshot shows the GRAMENE website header with the title "GRAMENE A Resource for Comparative Grass Genomics" and version "v23 (November 2006)". A navigation bar includes links for Search, Genomes, Species, Download, Resources, About, Help, and Feedback. A "Quick Search" box is on the left. A blue callout bubble points to the "Contact Us" link in the "About" menu, containing the text "Get contact info". Another blue callout bubble points to the "Feedback" link in the top navigation bar, containing the text "Use the feedback button, located at the top of every page, to provide **feedback** or to ask **questions** about Gramene."

GRAMENE *A Resource for Comparative Grass Genomics* v23 (November 2006)

Search Genomes Species Download Resources About Help Feedback

Quick Search

All Available

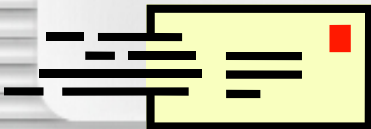
Search a single module or all available modules plus online documentation. Diversity, Pathways, BLAST and Mart not available in this search.

Have Questions...?

Get contact info

Use the feedback button, located at the top of every page, to provide **feedback or to ask **questions** about Gramene.**

or



Email Gramene at gramene@gramene.org