



Genetic Stocks-Oryza (GSOR) Collection 2010 Update



Rice Genetic Stocks Collection

The USDA Genetic Stocks – *Oryza* (GSOR) Collection at DBNRRC serves as distribution center for genetic mutants and molecularly characterized genetic resources that are important to the rice research community. These genetic stocks have been created using specialized techniques such as induced mutation and cross-breeding. The GSOR program is responsible for storing, maintaining, documenting, and distributing (free of charge) these materials to the scientific community for use in genetic and genomic research. Ultimately these materials will aid in the understanding of the genetic control of traits that can be used to enhance the development of new cultivars that meet the needs of the U.S. rice industry.

Growth of GSOR Collection

Year Received	TYPE OF ENTRY	NUMBER OF LINES
2003	Individual mutants	19
2004	Individual mutant	1
2005	Katy/Zhe 733 Mapping population	355
	Nipponbare	1
2006	Cocodrie/MCR01-0277 Mapping population	327
	Individual mutants	8
2007	Kinoshita Mutant Collection	192
	Jodon Mutant Collection	38
	California Mutant Collection	12
	Early/Katy Mapping Population	240
2008	USDA Core Collection	1794
	Katy Deletion (Putative) Mutants	22842
2009	Nipponbare TILLING Mutants	6397
	Cybonnet x C101A51 Mapping population*	183
	RiceCAP Association Mapping population*	462
	RiceCAP MY1 Mapping population	219
	RiceCAP MY2 Mapping population	300
2010	RiceCAP SB5 Mapping population	574
	OryzaSNP Set	20
*Not yet publicly available.		Grand Total Lines 33984

Types of Entries Within the GSOR Collection

Collections within the GSOR are unique sets of material that have been described/donated by an individual researcher.

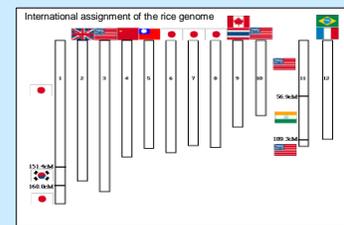
A deletion is defined as a fragment of DNA that was deleted from the rice genome. A **deletion mutant** is a rice line that carries this altered genome. These are useful to study the function of DNA sequences by evaluating how traits are impacted when a gene is “knocked-out” or deleted.

Individual mutants are lines that have been purposely mutated using chemicals and have novel characteristics such as male sterile (used to make hybrids), lesion mimic (used to study disease response), early flowering, double dwarf, colored hulls, and giant embryo.

Mapping populations are used to study the genetic variation which occurs as a result of recombination of genes from two differing parental lines. The mapping populations in the collection are segregating for agronomic traits, disease resistance, maturity, yield, milling quality, and cooking quality.

TILLING (Targeting Induced Local Lesions In Genomes) is a reverse genetics technique that uses traditional chemical mutagenesis to create libraries of individual rice plants can be evaluated using high throughput screens for the discovery of mutations. (Source: http://tilling.ucdavis.edu/index.php/Main_Page)

The graphic at the right shows the assignment of the 12 chromosomes of rice to 10 different nations that participated in the International Rice Genome Sequencing Project. In 2005, this international consortium produced the complete genetic sequence of the Japanese cultivar, *Nipponbare*. This sequence information will serve as the baseline for comparison with other rice varieties to identify genes that control economically important traits. GSOR serves as an international distributor of the exact source of Nipponbare that was sequenced for use in genomic research.



Distribution Activity

To date, just over 13,000 genetic stocks have been distributed to U.S. and international researchers.

Data Collection - Barcoding software and handheld data collection devices have been implemented to streamline data collection, inventory, and distribution activities.



Thank you for visiting the website for the Genetic Stocks - Oryza (GSOR) Collection. Total available accessions are now 33,339. This website was created to share information about the GSOR collection and related items of interest. Please use the links below or to the left to navigate through the site.

About the GSOR and its Mission

- GSOR News
- Donate Seed
- Collection Catalog (New printable version available)
- Field Projects - OryzaSNP 2010 Project
- New!** - Germination procedures for wild *Oryza* species and hard-to-grow rice germplasm
- Photo Archive
- Request Seed
- Related Websites

Website:

www.ars.usda.gov/spa/dbnrcc/gsor
Resources available on the website include a collection catalog, photos from current field projects and germination procedures for hard-to-grow rice germplasm.

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