

IRRI – Genetic Resources Information Management System (GRIMS)

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System Overview

- **Functionalities are based in International Rice Genebank Collection Information System (IRGCIS), except that:**
 - It uses ICIS schema (GMS, IMS and DMS).
 - It uses database backend independent API (Borland Delphi 2000).
 - New features/ functionalities are added and/or modified to adopt to changing (genebank) users requirements.
 - ICIS applications are called within the program (i.e. no need to launch the ICIS Launcher to open SetGen, for example).
- **Assists Genebank staffs to systematically perform their day-to-day activities and operations**
 - Performs germplasm associated operations inside the genebank and outside the field

System Features

- **Seed Acquisition**
 - maintaining and making available of detailed information about sample's origin and its main characteristics (passport data); processing of incoming sample; assigning of IRGC accession number; and determining the MLS status
- **Seed Characterization**
 - management of observed morphological and agronomic traits, as well as reactions to biotic and abiotic stresses, of accessions
- **Seed Multiplication**
 - periodically rejuvenating and increasing of the accessions by monitoring the seed stock and viability
- **Seed Management**
 - storing and maintaining the accessions in a cold store rooms and sending of backup duplicates to NCGRP and Svalbard
 - periodically monitoring of seed viability
- **System Administration**
 - Database manager's interface in managing the user interfaces (i.e. Grant and revoke access to specific interface)

ER Diagram

Germplasm information and generation history

GERMPLSM	
PK	<u>GID</u>
16	METHN
	GNPGS
12	GPID1
13	GPID2
14	GERMUID
15	LGID
11	GLOCN
	GDATE
	GREF
	GRPLCE
17	MGID

Germplasm names and passport data

NAMES	
PK	<u>NID</u>
	GID
	NTYPE
	NSTAT
	NUID
	NVAL
	NLOCN
	NDATE
	NREF

ATRIBUTS	
PK	<u>AID</u>
15	GID
13	ATYPE
14	AUID
	AVAL
12	ALOCN
	AREF
	ADATE

Inventory data

IMS_LOT	
PK,13	<u>LOTID</u>
16	USERID
	ETYPE
11	EID
12	LOCID
14	SCALEID
	STATUS
	COMMENTS
15	SOURCEID

IMS_TRANSACTION	
PK,15	<u>TRNID</u>
PK,11	<u>LOTID</u>
16	USERID
	TRNDATE
	TRNSTAT
	TRNQTY
	COMMENTS
	CMTDATA
	SOURCETYPE
14	SOURCEID
13	RECORDID
	PREVAMOUNT
12	PERSONID

LOCATION	
PK	<u>LOCID</u>
	LTYPE
	NLLP
	LNAME
	LABBR
14	SNL3ID
13	SNL2ID
12	SNL1ID
11	CNTRYID
	LRPLCE

UDFLDS	
PK	<u>FLDNC</u>
-	FTABLE
-	FTYPE
11	FCODE
-	FNAME
-	FFMT
-	FDESC
-	LFLDNO
12	FUID
-	FDATE
13	SCALEID

Characterization and evaluation data in DMS

Germplasm Creation Methods

- **Maintenance method**
- **Incoming sample, Accession**
 - Collected – samples collected from a collecting mission
 - Imported – samples that are donated to the genebank
- **Accession multiplication**
 - Cultivated rice species
 - Seed increase bulk SF (if direct source is known)
 - Seed increase bulk unknown source
 - Wild rice species
 - Seed increase undefined pollination [unknown]
- **Accession characterization**
 - No germplasm is created except for few rare cases and wild rice species.

Accession names

- Temporary accession #
- Accession #. Format: *IRGC nn* (i.e. IRGC 1)
- Cultivar name, derivative name, donor accession #, foreign accession #, collector's #, alternative cultivar name (other previous names)
 - Inherits the name assignment date (NDATE) and location (NLOCN) of its source
 - Otherwise, set these values to 0
- ***Accessions should not have a release name, cross name, unnamed cross, etc.***

Seed Acquisition

Acquisition Module Menu

Receipt and Registration | Seed Increase | Inclusion into the Collection | Reports | Exit | Help

- Enter Seed Batch Information
- Enter seed names using Soundex Algorithm
- Edit-Distance Algorithm
- ICIS Germplasm Search
- Entering Passport Information
- Enter Initial Seed Information

- Select Plant
- Edit/ Finalize
- Assign Plot
- Monitor Plant
- Query Samples

- Update Passport Info
- Enter Seed Processing Information
- Assign Accession Number
- Update Trayno/ Bulk/ NCGRP
- Update Master File
- Reidentify Species
- Designate Germplasm to FAO/ MLS

- Summary of Unregistered Seeds
- Summary of Registered Accessions
- Acknowledgement Letter
- Labels

- History of Passport Information Update
- Summary of Composition
- FAO/ MLS Designated Seeds

Seed Multiplication

Characterization

Seed Management

System Administration

[Re-login](#)

You are currently logged in as I_LOCAL@IRGC

Seed multiplication

Species All Species
Purpose Regular Multiplication

Type Accessions in long-term storage

Storage Type BASE

Seed Viability BASE

Disregard BASE & ACTIVE

i. Latest viability value < 85 %
OR
of Initial Viability

ii. Latest viability value < 80

Seed Stocks (alum packs + bulk)

Disregard seed stock

Total amount (in grams) <=

Seed Health

Positive for Nematodes

Croyear(s) Country of Origin Variety Group(s)

EXCLUDE accessions planted / with harvest during the following croyear(s):

Range #	From	To
1		
2		
3		
4		
5		

Format: YYYYXX (where XX=season indicator)

Process
Reset Criteria
Create seed list

[Re-login](#)

You are currently logged in as I_LOCAL@IRGC

Seed Characterization

Select Planting Material for Characterization (Initial Criteria)

Species:

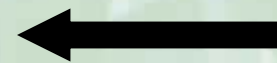
OLD REC:

Feature:

With no single description (for all stages)

With incomplete description

For re-characterization/verification



Specify criteria for characterization

Detailed criteria



Select Planting Material for Characterization

O. sativa (Old Accessions: No single description)

Cropyear, Population | Country, Topography | Cultural Type, Ecosystem | Biosystematics

EXCLUDE CROPYEAR(S): Format YYYYWS

Range #	From	To
1	2006WS	
2		
3		

SEED VIABILITY AND STOCK

Latest viability greater than or equal to %

Total amount in bulk greater than or equal to grams

POPULATIONS TO CONSIDER

A only ALL other except A ALL POPULATIONS

Seed Management

The screenshot shows a web-based application window titled "Seed Management Module Menu". The interface includes a menu bar with options: "Seed Management", "Query", "Seed Monitoring", "Label Printing", "Inventory", "Exit", and "Help". The "Label Printing" menu is expanded, showing sub-options: "Base/ Active Label Printing", "Seed Processing Label Printing", "Generic Label Printing", and "Query Labels Printed". On the left side, there are five main menu buttons: "Seed Acquisition", "Seed Multiplication", "Characterization", "Seed Management" (which is highlighted with a dotted border), and "System Administration". At the bottom left, there is a "Re-login" link and a status message: "You are currently logged in as I_LOCAL@IRGC".



IRGC Accessions in ICIS Applications

Search GMS

Search Name Attribute Cross

Search term:

Name Type:
 GID:

Names	Method	Location	Unique ID
CO27,IRGC 106000,MLI(D) 86-020,SEGO	CSE	T.T. CHANG GENETIC RESOURCES CENT	IRIS 6-38038
IRGC 106000:0000SS	MPU	T.T. CHANG GENETIC RESOURCES CENT	IRIS 112-406906
IRGC 106000:1989WS	MPU	T.T. CHANG GENETIC RESOURCES CENT	IRIS 112-424224
IRGC 106000:1996WS	MPC	T.T. CHANG GENETIC RESOURCES CENT	IRIS 112-406907
IRGC 106000:1997WS	MPU	T.T. CHANG GENETIC RESOURCES CENT	IRIS 112-512370

Tree: Germplasm Characteristics (GID: 316492)

SEGO

Preferred Name: Date Named: Name Location:

Germplasm Creation Method: Germ. Date: Germ. Location:

Alternative Names :		Attributes :	
Type	Name	Type	Value
ACCNO	IRGC 106000	COLL_DAT	11/DEC/1986
CVNAM	SEGO	SPP_CODE	Wild rice and related genera
COLNO	CO27	MISSION	202
DACCN	MLI(D) 86-020	SampStat	1
		TAXNO	Oryza barthii (A. Chev)
		COLL_SOU	OTHER
		USAGE	FOOD
		FUND	IBPGR
		LANG VAR	PEUHL
		REM_PLAN	PLANT HEIGHT UP TO 2M
		SOIL_TEX	SILT
		SOURCE_I	IBPGR 1986 MISSION - IBPGR REPORT 87/20 (ND-30-XIV, MOPTI; 1200,000)
		IPSTAT	FAO (14/09/1994)
		MLS DATE	14-SEP-1994
		STATUS_ACC	AV

Passport data

Germplasm names

Generation History: SEGO (316492)

Relatives Neighborhood Lists Stocks

Derivative Neighborhood Management Neighborhood

Steps Backward: Steps Forward:

MANAGEMENT NEIGHBORHOOD:

316492	SEGO
1770840	IRGC 106000:0000SS
1770841	IRGC 106000:1989WS
1794766	IRGC 106000:1996WS
1819125	IRGC 106000:1997WS

**Germplasms that are derived by maintenance method (i.e.seed increase)
 Name format: YYYYSS
 Where YYYY – year when the accession was rejuvenated/ multiplied
 SS - DS, WS, RS, SS**

List organization in SetGen

The screenshot shows the SetGen - List Manager for UNKNOWN application. The interface includes a menu bar (List, List Entry, Edit, GMS, Batch, Help), a toolbar with icons for list selection and editing, and a main window divided into several sections.

Left Panel (List Selector): A tree view showing the organization of lists under "SetGen Lists".

- SetGen Lists
 - GRC BARCODE LABEL
 - GRC INCOMING BATCHES
 - GRC INCOMING SOURCE GID
 - GRC INITIAL SEED INCREASE
 - GRC SEED CHARACTERIZATION
 - GRC SEED MANAGEMENT
 - GRC SEED REJUVENATION
 - GRC SEED REQUESTS
 - GRC SEED STOCKS
 - INGER NOMINATION LIST
 - INGER NURSERY
 - SEED HEALTH UNIT
 - B2007-002A
 - B2007-003 (SOURCE)
 - B2007-004 (SOURCE)
 - DIGNA
 - PASSPORT_FINAL
 - PASSPORT_S1
 - PASSPORT_S2
 - TEST

Right Panel (Browse Window): Contains fields for "No. of tagged entries" and "No. of entries", and a table with the following structure:

Tag	Designation	Cross	Entry Code	Source

Bottom Panel (Edit Window): Contains fields for "List Characteristics", "Name", "Type" (set to LST), "Date", "Title", "No. of tagged entries", "No. of entries", and a checkbox for "Entry Code Naming Conver". It also includes a table with the same structure as the Browse Window:

Tag	Designation	Cross	Entry Code	Source

GRC inventory data in InTrack

Inventory Tracker

File Inventory Security Utility Help

IRGCREQNO20060308 >>> Total Entries: 9 <<<

Tag	GID	Entry Code	Source	Desig	Group Name
x	1652983	1	2000DS	IRGC 12731:2000DS	NIPPON-BARE
x	1763337	2	1987WS	IRGC 100821:1987W	W0001 : O. RIDLEYI
x	1763387	3	1991WS	IRGC 100882:1991W	W0008 : O. AUSTRALIENSIS
x	1763443	4	1987WS	IRGC 100896:1987W	W0065 : O. OFFICINALIS
x	1763447	5	0001SS	IRGC 100897:0001S	W0106 : O. NIVARA

Inventory Filters

Location : ... Clear Locations

Inventory Units :

Germplasm Scope

Exact GID

Derivative Neighborhood

Management Neighborhood

Barcode Data

LotID : Weight :

Inventory Details >>> Total Entries: 24 <<<

Tag	GID	Desig	Lot ID	Lot Location	Lot Units	Amount	Initial Bal.	Rem
	1763913	IRGC 101141:1988W	336012	Active, Tray No.228	Aluminum packet (count)	4	4	INITI
	1763447	IRGC 100897:0001S	188066	Active, Tray No.227	Amount stored in active (bulk in grams)	3.029	3.029	INITI
	1769742	IRGC 105491:1988W	302201	Base Collection	Amount stored in base collection (grams)	2.149	2.149	INITI
	1763387	IRGC 100882:1991W	315158	Active, Tray No.227	Aluminum packet (count)	2	2	INITI
	1763337	IRGC 100821:1987W	315156	Active, Tray No.227	Aluminum packet (count)	2	2	INITI
	1763387	IRGC 100882:1991W	299660	Base Collection	Amount stored in base collection (grams)	1.45	1.45	INITI
	1763913	IRGC 101141:1988W	299793	Base Collection	Amount stored in base collection (grams)	1.31	1.31	INITI
	1769742	IRGC 105491:1988W	191663	Active, Tray No.234	Amount stored in active (bulk in grams)	1.2	1.2	INITI
	1763443	IRGC 100896:1987W	335854	Active, Tray No.227	Aluminum packet (count)	1	1	INITI
	1652983	IRGC 12731:2000DS	10704	Active, Tray No.779	Aluminum packet (count)	1	1	INITI

LOT details