

THE 1st MULTI-ENVIRONMENT TESTING FOR IRRIGATED LOWLAND RICE - STAGE 2 DRY SEASON (MET2-IR, 2012 DS)

Introduction

IRRI breeding programs generate fixed and stable lines each season that are identified from pedigree nurseries as well as observational and replicated yield trials. Eventually, elite lines are advanced to multi-environment testing (MET) conducted via breeding networks. These networks, however, presently have limited geographical coverage and face challenges in terms of germplasm movement. Moreover, the materials tested through these networks are generally in the advanced stage of varietal development. An exhaustive MET system for early generation breeding products is so far lacking at IRRI and in the global rice breeding community. For this reason, a new MET system is being established at IRRI beginning in 2011 under the Global Rice Science Partnership (GRiSP), to be piloted for irrigated lowland rice.

Goal

- To establish a systematic, sequential, multistage, and multi-environment testing (MET) system for elite breeding lines, managed through one entity, in order to improve overall breeding efficiency.

Objectives

- To identify elite breeding lines with high and stable yields and wide adaptation across a target population of environments that can be the future mega-varieties;
- To be able to select superior breeding materials adapted to one or more specific environment(s) and agro-ecologies;
- To develop and deploy varieties and breeding products to specific market segments;
- To exploit genotype, environment, and genotype x environment (G X E) interaction contributions to varietal performance in releasing breeding products to one or more target environments;
- To generate earlier feedback to breeders on trait performance and identify trait packages needed for molecular breeding;
- To improve partnerships with public, NGO, and private sectors who may have roles to play at certain testing/variety development stages. .

Trial Composition

The MET2-IR trial is the second stage of testing for irrigated breeding lines from IRRI and collaborating NARES institution selected promising lines from MET Stage 1 for irrigated breeding lines under the overall MET concept. For 2012 dry season, the trial will consist of 140 test entries and 5 checks. The test entries will mostly include breeding lines developed by the various breeding programs (both hybrid and inbred) of IRRI and PhilRice. The designation, source and other information of each entry are provided in Table 1.

The check varieties and their corresponding entry numbers are as follows:

Designation	Classification	MET No.	Entry No.		
			Border	Module 1	Module 2
PSB Rc10	Very early	MT4901	901	96	36
PSB Rc82	Early	MT4902	902	97	37
NSIC RC222	Medium	MT4903	903	98	38
PSB Rc18	Late	MT4904	904	99	39
IR 83199H(MESTIZO 21)	Late (Hybrid)	MT5211	905	100	40

Criteria for Selection of Entries

To fill the 140 entries needed for MET Stage 2, the following criteria are the basis for selection of entries from each module:

1. Very Early/Early Maturing Group (95 entries and 5 checks)
 - a. Top 10% of good performing entries across all locations (45)
 - b. Top 10 entries at 5 locations (50)

2. Medium/Late Maturing Group (35 entries and 5 checks)
 - a. Top 5% of good performing entries across all locations (10)
 - b. Top 5 entries at 5 locations (25)

Flow of Materials Across Seasons

The table below shows the flow of retaining, replacing and removing seeds across seasons from 2012 to 2016:

MET 2	2012		2013		2014		2015		2016	
Classification of Seeds	DS	WS	DS	WS	DS	WS	DS	WS	DS	WS
New	140		70	70	70	70	70	70	70	70
Retained		140	70	70	70	70	70	70	70	70
Dropped			55	55	55	55	55	55	55	55
Promoted to MET3			15	15	15	15	15	15	15	15

The Experimental Site

An experimental field uniform in soil texture, depth, and fertility should be chosen for the MET2-IR trial. It should not have been used previously for fertilizer experiments. It should also have adequate irrigation and drainage facilities. The area covers 0.5 hectare of land per site. It is suggested that the same area be utilized for the MET every season.

Experimental Design

The trial will be conducted using a **Row-Column Design with two replications**. This design is used to consider possible field variation. There are two modules, based on the flowering time of entries - Module 1 for very early/early flowering and, Module 2 for medium/late flowering, as follows:

Flowering	Classification
90 and below	Very early/Early
Above 90	Medium/Late

For each replicate, module 1 has 30 rows and 4 columns while module 2 has 15 rows and 4 columns.

***This fieldbook contains the plot randomization, field plan and data sheets for the MET2-IR 2012 for dry season.**

For each module, the test entries are randomly assigned plot numbers. Within each module, the 2 replicates have different randomizations. All five checks are randomly assigned in a replicate and are included within each column (checks are systematically arranged on every 6th row to help on PACP scoring). Different trial sets have different randomization of entries. The plot randomization of entries is given in Tables 2 and 3. There are 120 plots for Module 1 while Module 2, has 60 plots. The seed packets are arranged and numbered according to plot numbers.

The field layout in Figure 1 is provided for your reference. Please do not modify the design or the layout.

Prepare the field thoroughly at least one month before transplanting following the locally recommended standards. Lay out rows in beds before seeding. The experimental field should be properly labeled. The plot size for each entry is $10 \text{ m}^2 = 2.0 \text{ m} \times 5.0 \text{ m}$ (10 rows with 20 cm distance between rows).

There should be no vacant rows between plots (entries). Number the plots consecutively from left to right in all replications. Place the stakes bearing the plot number at the first left-most row of each plot. Label all plots before distributing the seedlings for transplanting.

Apply molluscicide two times, i.e. once at four days before and another immediately after transplanting.

Nursery Establishment and Management

Initially all seeds are placed in an oven for breaking dormancy at 50°C for 5 days. A total of 100 grams of seeds for each entry are seeded, which should allow the planting of 2 replications each with 2 m width (10 rows) x 5.0 m length (25 hills). The seeds could be seeded in either wet or dry beds where they are grown for 21 days. The seedling beds are carefully kept free from insect and diseases and properly irrigated. After seeding, apply uniformly 1kg/100m² of Ammonium Sulfate (21-0-0 S) in the seedbed. If the seedlings show yellowing (N deficiency), apply another 1kg/100m² of Ammonium Sulfate (21-0-0 S) 10-12 days after seeding (DAS).

Prior to pulling, prepare tags to mark seedlings to be transported from seedbed to the field. After 21 days of sowing, each seedling of the entries are pulled out from the seedling beds, bundled, and tied with a G.I. wire marked with pot labels bearing the plot numbers. Distribute seedlings in the field corresponding to the lay-out. Check the entries and the plots for any possible mistake(s) before transplanting the seedlings. Alternatively, apply zinc sulfate in the nursery seedbed, or dip seedlings in 2-4 % zinc oxide suspension before transplanting. (If zinc sulfate is to be applied in the soil as basal, dipping is no longer necessary.)

The seedlings are transplanted into the field in 2-3 seedlings per hill following a spacing of 20 cm x 20cm. Keep some seedlings at the end of the plot near the plot label to replant missing hills.

Shallow water depth should be maintained starting from about 3 days after transplanting that is gradually increased to 3-5 cm until the hard dough stage. Replant missing hills within 7 days after transplanting to obtain a uniform plant population. Care should be taken to uniformly distribute fertilizers and plant protection chemicals.

The recommended fertilizer rates (kg/ha) for different test sites in the Philippines during the 2012 dry season are:

- Recommended at IRRI

Season	Stage	N ¹	P ²	K ³	Zn ⁴
DRY	Total	160	30	40	5
	Basal	60	30	40	5
	Mid Tiller	40	-	-	-
	Panicle Initiation	60	-	-	-
WET	Total	90	15	20	5
	Basal	30	15	20	5
	Mid Tiller	30	-	-	-
	Panicle Initiation	30	-	-	-

- For PhilRice – Nueva Ecija and Isabela

Season	Stage	N ¹	P ²	K ³	Zn ⁴
DRY	Total	150	60	60	5
	Basal	60	60	60	5
	Mid Tiller	40	-	-	-
	Panicle Initiation	50	-	-	-
WET	Total	90	60	60	5
	Basal	60	60	60	5
	Mid Tiller	15	-	-	-
	Panicle Initiation	15	-	-	-

- For PhilRice – Agusan

Season	Stage	N ¹	P ²	K ³	Zn ⁴
DRY	Total	60	40	70	5
	Basal	30	40	70	5
	Mid Tiller	15	-	-	-
	Panicle Initiation	15	-	-	-
WET	Total	60	40	70	5
	Basal	30	40	70	5
	Mid Tiller	15	-	-	-
	Panicle Initiation	15	-	-	-

- For DA – Bohol

Season	Stage	N ¹	P ²	K ³	Zn ⁴
DRY	Total	91	24	14	-
	Basal	22	24	14	-
	Mid Tiller	34.5	-	-	-
	Panicle Initiation	34.5	-	-	-
WET	Total	91	24	14	-
	Basal	22	24	14	-
	Mid Tiller	34.5	-	-	-
	Panicle Initiation	34.5	-	-	-

¹ In the form urea

² As P₂O₅ from triple superphosphate or solophos

³ K₂ from KCl

⁴ As ZnSO₄

For weed control, a pre-emergence herbicide (Sofit EC if available) and molluscicide may be applied uniformly in the experimental field immediately after transplanting following the recommended rate. Maintain a shallow water depth of 2-5 cm for at least 2 weeks after herbicide application. Subsequent hand weeding may be done if needed.

For disease and insect control, the experimental field should be well protected. Choose the appropriate cultural, chemical, and biological control to effectively manage insects and diseases. If available, carbofuran may be applied at around 15 DAT and at PI. Do prophylactic application of Benlate at PI and follow up spray 2 weeks later for sheath blight. Roguing should be done to remove off-type plants. Rogue the field repeatedly up to the hard dough stage or for as long as off-types can be identified. These off-type plants should be cut at the base.

At harvest, collect all the plants in a plot except the border rows, one on each side of the plot and two border rows, one on both ends of all the plots (The total number of plants harvested from a plot is 8 rows x 23 plants). The harvest from each plot is placed in clean cloth bags. Put the labels, bearing the entry number and plot number inside the bag. A vogue thresher is used to thresh the samples. Clean the thresher well after every sample. Put the label inside the bag after threshing. All threshed samples are dried in a batch dryer at 45°C for 4-5 days. In removing half and empty grains, clean the seed blower before processing each sample to avoid seed mixtures. Transfer clean seeds into labeled paper bags bearing the MET name, MET entry number, plot number, year, and season.

Data Collection

The general reference for data collection is the Standard Evaluation System for Rice (SES, 1996). The following agronomic data are collected:

Trait

Explanation

VG: Vegetative Vigor. Note: Several factors may interact, influencing seedling vigor (e.g. tillering ability, plant height, etc.) Use this scale for evaluating genetic material and varieties under stress and non-stress conditions.

1	Extra vigorous (very fast growing; plants at 5-leaf stag have 2 or more tillers in majority of population)
3	Vigorous (fast growing; plants at 4-5 leaf stage have 1-2 tillers in majority of population)
5	Normal (plants at 4-leaf stage)
7	Weak (plants somewhat stunted; 3-4 leaves; thin population; no tiller formation)
9	Very weak (stunted growth; yellowing of leaves)

ZN:

Zinc Deficiency

1	Growth and tillering nearly normal, healthy
2	Growth and tillering nearly normal, basal leaves slightly discolored
3	Stunting slight, tillering decreased, some basal leaves brown or yellow
5	Growth and tillering severely retarded, about half of all leaves brown or yellow
7	Growth and tillering ceases, most leaves brown or yellow
9	Almost all plants dead or dying

FLW (DAS): Days to flowering. Number of days from seeding to 50 % flowering. 50% of the main tillers of the whole population (in a plot) are flowering.

MAT: Days to maturity. Number of days from seeding to grain ripening (85% of grains on panicle of the whole plot are mature, i.e. color is yellow).

HT (cm): Plant height. Average of five samplings measured in centimeters from soil surface to the tip of the tallest panicle (awns excluded) and can be measured when 80% are mature. (i.e. HT1=height for sample 1, so on)

TILLER: Tiller Number. Average of five samplings taken from inner hills by counting the number of productive tillers (the same samples used in measuring plant height). (i.e. TILLER1=number of tillers for sample 1, so on)
Note: 2-3 seedlings per hill.

LDG: Lodging incidence. Percent of plants that lodged with at least 45 degree angle.

PACP: Phenotypic acceptability
Scale

1	Excellent = very good plant type, dense medium slender grains, no grain discoloration, without awns, no symptoms of diseases or deficiencies, medium to high tillering, comparable or better than the best check.
3	Good = good plant type, medium to high tillering, no symptoms of diseases and deficiencies, no grain discoloration, comparable to the check varieties
5	Fair = moderate tolerance to diseases and deficiencies, acceptable plant type, medium tillering and good grains.
7	Poor = poor plant type, awns, discolored grains, low tiller number, showing disease and deficiency problem
9	Unacceptable = very poor plant type, all plants have diseases and showing symptoms of deficiencies.

YLD: Plot yield (g) adjusted to 14% moisture content (excluding borders)
Adjusted yield = (plot yield/no. of harvested hills)*standard harvested hills*MF
Where MF= (100-MC at harvest)/86

NO_PLANTS: Number of plants harvested. Standard number of hills to harvest = 184.

MC: Moisture Content. In Percent. Weigh the samples and test the moisture content for yield data calculation. Note: Upon weighing, measure also MC.

Grain quality characteristics will be measured to selected entries:

AMY: Amylose content of grain. In percent

GELTEMP: Gelatinization Temperature

GELCON: Gelatinization Consistency after milling.

Scale	(mm)	Gel consistency type
1	80-100	Soft
3	61-80	Soft
5	41-60	Medium
7	36-40	Hard
9	Less than 35	Hard

GRL: Grain length in mm. Distance from the base of the lowermost sterile lemma to the tip (apiculus) of the fertile lemma or palea. In the case of awned varieties, the grain is measured to a point comparable to the tip of the apiculus.

GRS: Grain shape. After harvesting, cleaning and dehulling.

Scale	Shape	Ratio
1	Slender	Over 3.0
3	Medium	2.1 to 3.0
5	Bold	1.1 to 2.0
9	Round	Less than 1.1

CHK: Chalkiness of endosperm. Percent in Kernel Area. Evaluate a representative milled sample for the degree (extent) of chalkiness that will best describe the sample with respect to: a. white belly; b. white center; and c. white back.

Scale

0	None
1	Small (less than 10%)
5	Medium (11% to 20%)
9	Large (more than 20%)

Data are to be recorded in electronic field books. Protocol on data gathering will be provided later.

Data Reporting

Data can be reported to the INGER Coordinator -- electronic copy (sent as e-mail attachment) or hard copy (via courier).

An excel file for data recording corresponds to a trial-year-set number combination. A set number refers to a specific testing site. Examples of excel files are:

- a. MET2-IR 2012/Set No. 6- _____ (PHILRICE Nueva Ecija, Philippines)

The data sheet names and data to be entered in each sheet are summarized below:

Excel file sheet name	Data to be entered
LOCATION and EXPT-DESC (experiment-description)	Test site data, names of cooperators and data about agronomic practices
WEATHER-OBS (weather-observation)	Monthly weather data
PEST-OBS (pest-observation)	Pest type, pest name and degree of pressure
EXPT-OBS (experiment-observation)	Entry data (plant height, days to heading, etc.)

In excel data sheets, only rows and columns important to cooperators are shown. Hidden rows and columns are for INGER use only. For example, in sheet LOCATION and EXP-DESC, rows 2-3 and columns c-t are hidden while in sheet WEATHER-OBS, rows 1-13, 19, 33-34 and columns h-i are all hidden.

Please fill-out the excel data sheet and send to IRRI as an email attachment to: n.singson@cgiar.org or a.galang@cgiar.org or a.tabanao@irri.org .

You may send printed data sheets of this field book to:

INGER Coordinator
Plant Breeding, Genetics and Biochemistry Division
International Rice Research Institute (IRRI)
DAPO Box 7777
Metro Manila, Philippines

Table 1. Particulars of entries in the 1st MET Stage 2 - Irrigated Lowland Rice Dry Season (2012)

MET No.	Module No.	Entry No.	GID	Fixed Name	Origin	Group/Scientist
MT4004	1	1	3077132	HHZ 8-SAL 6-SAL 3-Y2	IRRI	Green Super Rice/ J. Ali
MT4008	1	2	3056013	HHZ 1-Y4-Y1	IRRI	Green Super Rice/ J. Ali
MT4017	1	3	3077129	HHZ 8-SAL9-DT 2-Y1	IRRI	Green Super Rice/ J. Ali
MT4018	1	4	3077122	HHZ 12-Y 4-DT 1-Y 1	IRRI	Green Super Rice/ J. Ali
MT4019	1	5	3077125	HHZ 12-DT 10-SAL 1-DT 1	IRRI	Green Super Rice/ J. Ali
MT4209	1	6	2866428	ZGY 1	IRRI	Green Super Rice/ J. Ali
MT4279	1	7	2866425	ZH 1	IRRI	Green Super Rice/ J. Ali
MT4280	1	8	2866427	TME 80518	IRRI	Green Super Rice/ J. Ali
MT4284	1	9	2731025	SAGC-02	IRRI	Green Super Rice/ J. Ali
MT4285	1	10	2731024	Hua 565	IRRI	Green Super Rice/ J. Ali
MT4026	1	11	2697389	IR 10N198	IRRI	Irrigated/P. Virk
MT4036	1	12	2321299	IR 08N195	IRRI	Irrigated/P. Virk
MT4038	1	13	3173098	IR 09A228	IRRI	Irrigated/P. Virk
MT4041	1	14	2433011	IR 09N532	IRRI	Irrigated/P. Virk
MT4049	1	15	2432999	IR 09N533	IRRI	Irrigated/P. Virk
MT4050	1	16	2451135	IR 09N538	IRRI	Irrigated/P. Virk
MT4053	1	17	2697651	IR 10M120	IRRI	Irrigated/P. Virk
MT4054	1	18	2697646	IR 10M122	IRRI	Irrigated/P. Virk
MT4055	1	19	2754550	IR 10A125	IRRI	Irrigated/P. Virk
MT4075	1	20	2628815	IR 09A178	IRRI	Irrigated/P. Virk
MT4087	1	21	2697649	IR 10M121	IRRI	Irrigated/P. Virk
MT4088	1	22	2697641	IR 10M123	IRRI	Irrigated/P. Virk
MT4105	1	23	2337933	IR 08A104	IRRI	Irrigated/P. Virk
MT4110	1	24	2337253	IR 08N158	IRRI	Irrigated/P. Virk
MT4133	1	25	2758426	IR 10A152	IRRI	Irrigated/P. Virk
MT4146	1	26	2336588	IR 08N184	IRRI	Irrigated/P. Virk
MT4148	1	27	1845909	IR 06N119	IRRI	Irrigated/P. Virk
MT4149	1	28	2451117	IR 09A235	IRRI	Irrigated/P. Virk
MT4150	1	29	2472088	IR 09A220	IRRI	Irrigated/P. Virk
MT4152	1	30	2433233	IR 09N495	IRRI	Irrigated/P. Virk
MT4154	1	31	1129071	IR 03A159	IRRI	Irrigated/P. Virk
MT4158	1	32	2451087	IR 09N500	IRRI	Irrigated/P. Virk
MT4161	1	33	2754452	IR 10N118	IRRI	Irrigated/P. Virk
MT4171	1	34	2697172	IR 10A110	IRRI	Irrigated/P. Virk
MT4179	1	35	1838072	IR 06M150	IRRI	Irrigated/P. Virk
MT4180	1	36	2451081	IR 09N502	IRRI	Irrigated/P. Virk
MT4188	1	37	1838100	IR 06M143	IRRI	Irrigated/P. Virk
MT4194	1	38	1838097	IR 06M144	IRRI	Irrigated/P. Virk
MT4195	1	39	1838118	IR 06M139	IRRI	Irrigated/P. Virk

Table 1. Particulars of entries in the 1st MET Stage 2 - Irrigated Lowland Rice Dry Season (2012)

MET No.	Module No.	Entry No.	GID	Fixed Name	Origin	Group/Scientist
MT4196	1	40	3173031	IR 09A136	IRRI	Irrigated/P. Virk
MT4201	1	41	2697934	IR 10M136	IRRI	Irrigated/P. Virk
MT4205	1	42	2696709	IR 10N269	IRRI	Irrigated/P. Virk
MT4206	1	43	2697238	IR 10A134	IRRI	Irrigated/P. Virk
MT4213	1	44	2222968	IR 07A234	IRRI	Irrigated/P. Virk
MT4217	1	45	2451079	IR 09N503	IRRI	Irrigated/P. Virk
MT4220	1	46	1838109	IR 06M141	IRRI	Irrigated/P. Virk
MT4232	1	47	1855724	IR 06N155	IRRI	Irrigated/P. Virk
MT4234	1	48	2348792	IR 08M119	IRRI	Irrigated/P. Virk
MT4237	1	49	2754601	IR 10N108	IRRI	Irrigated/P. Virk
MT4241	1	50	2754625	IR 10N186	IRRI	Irrigated/P. Virk
MT4243	1	51	2754861	IR 10A155	IRRI	Irrigated/P. Virk
MT4257	1	52	2548083	IR 09A152	IRRI	Irrigated/P. Virk
MT4268	1	53	2337730	IR 08N138	IRRI	Irrigated/P. Virk
MT4276	1	54	2697338	IR 10N237	IRRI	Irrigated/P. Virk
MT4289	1	55	2337749	IR 08N136	IRRI	Irrigated/P. Virk
MT4297	1	56	1402302	IR 05N412	IRRI	Irrigated/P. Virk
MT4299	1	57	2337754	IR 08N134	IRRI	Irrigated/P. Virk
MT4320	1	58	1960411	IR 06N211	IRRI	Irrigated/P. Virk
MT4324	1	59	2450869	IR 09N528	IRRI	Irrigated/P. Virk
MT4536	1	60	0	PR37160-8-5-1-1-1-1	Philippines	PhilRice
MT4538	1	61	0	PR37160-13-7-1-1-1-1	Philippines	PhilRice
MT4543	1	62	0	PR37990-3B-15-2	Philippines	PhilRice
MT4546	1	63	0	PR40083-1B-3-2	Philippines	PhilRice
MT4547	1	64	0	PR37275-7-30-8-1-1-2-2-2	Philippines	PhilRice
MT4553	1	65	0	PR37949-3B-3-5-1	Philippines	PhilRice
MT4554	1	66	0	PR37152-2-2-4-1-1-1	Philippines	PhilRice
MT4556	1	67	0	PR37934-3B-8-2-1	Philippines	PhilRice
MT4566	1	68	0	PR37246-2-3-2-1-1-2-2	Philippines	PhilRice
MT4567	1	69	0	PR37252-2-1-1-1-2-2	Philippines	PhilRice
MT4574	1	70	0	PR37951-3B-37-1	Philippines	PhilRice
MT4604	1	71	0	PR37275-7-14-5-1-2-2-1-2	Philippines	PhilRice
MT4226	1	72	2432629	IR 09N522	IRRI	Irrigated/P. Virk
MT4622	1	73	0	PR37951-3B-37-1-2	Philippines	PhilRice
MT4634	1	74	0	PR37942-3B-5-3-2	Philippines	PhilRice
MT4639	1	75	0	PR37139-3-1-3-1-2-1	Philippines	PhilRice
MT4640	1	76	0	PR37934-3B-23-2-1	Philippines	PhilRice
MT4641	1	77	0	PR37866-1B-1-4	Philippines	PhilRice
MT4648	1	78	0	PR37939-3B-1-2	Philippines	PhilRice

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MET No.	Module No.	Entry No.	GID	Fixed Name	Origin	Group/Scientist
MT4650	1	79	0	PR40078-B-12-2	Philippines	PhilRice
MT4706	1	80	0	PR37160-13-4-1-1-1-1	Philippines	PhilRice
MT4712	1	81	0	PR37273-5-16-5-2-1-2-1	Philippines	PhilRice
MT4720	1	82	0	PR35769-B-1-1-2-3-4	Philippines	PhilRice
MT4722	1	83	0	PR35769-B-37-3-1-2-1	Philippines	PhilRice
MT4737	1	84	0	PR35805-B-9-2-3-2-3	Philippines	PhilRice
MT4748	1	85	0	PR30245-10-414	Philippines	PhilRice
MT4756	1	86	0	PR34005-2B-7-1-3-1-2	Philippines	PhilRice
MT4779	1	87	0	PR38046-PB-10-9-4-2-1	Philippines	PhilRice
MT4809	1	88	0	PR37952-B-1-1-2	Philippines	PhilRice
MT4066	1	89	3128689	IR 10F388	IRRI	Submergence/B. Collard
MT4094	1	90	3128661	IR 10F360	IRRI	Submergence/B. Collard
MT4095	1	91	3128708	IR 10F407	IRRI	Submergence/B. Collard
MT4137	1	92	3128640	IR 10F339	IRRI	Submergence/B. Collard
MT4138	1	93	3128629	IR 10F328	IRRI	Submergence/B. Collard
MT4248	1	94	2847870	IR 09F436	IRRI	Submergence/B. Collard
MT4249	1	95	2349314	Ciherang	IRRI	Submergence/B. Collard
MT4901	1	96	76174	IRRI 104	IRRI	Submergence/B. Collard
MT4902	1	97	94801	IRRI 123	IRRI	Irrigated/P. Virk
MT4903	1	98	1253989	IRRI 154	IRRI	Irrigated/P. Virk
MT4904	1	99	82290	IRRI 105	IRRI	Irrigated/P. Virk
MT5211	1	100	1857191	IRRI 153	IRRI	Hybrid/F. Xie
MT4327	2	1	2020800	IR 06N233	IRRI	Irrigated/P. Virk
MT4353	2	2	2220463	IR 07A179	IRRI	Irrigated/P. Virk
MT4363	2	3	1401730	IR 05N419	IRRI	Irrigated/P. Virk
MT4377	2	4	2472354	IR 09N142	IRRI	Irrigated/P. Virk
MT4390	2	5	2754793	IR 10N251	IRRI	Irrigated/P. Virk
MT4398	2	6	1201260	IR 04A115	IRRI	Irrigated/P. Virk
MT4404	2	7	2020798	IR 06N234	IRRI	Irrigated/P. Virk
MT4406	2	8	1265273	IR 05N170	IRRI	Irrigated/P. Virk
MT4413	2	9	2697797	IR 10N230	IRRI	Irrigated/P. Virk
MT4414	2	10	2697810	IR 10N226	IRRI	Irrigated/P. Virk
MT4447	2	11	1264383	IR 04A409	IRRI	Irrigated/P. Virk
MT4471	2	12	2697813	IR 10N225	IRRI	Irrigated/P. Virk
MT4479	2	13	2525088	IR 09N272	IRRI	Irrigated/P. Virk
MT4488	2	14	2696855	IR 10N304	IRRI	Irrigated/P. Virk
MT4807	2	15	0	PR37285-17-31-12-1-1-2	Philippines	PhilRice
MT4817	2	16	0	PR37921-B-3-4-2-1-2	Philippines	PhilRice
MT4818	2	17	0	PR37704-2B-6-1-2-1-1	Philippines	PhilRice

Table 1. Particulars of entries in the 1st MET Stage 2 - Irrigated Lowland Rice Dry Season (2012)

MET No.	Module No.	Entry No.	GID	Fixed Name	Origin	Group/Scientist
MT4829	2	18	0	PR38012-3B-3-1	Philippines	PhilRice
MT4830	2	19	0	PR37921-B-3-2-2	Philippines	PhilRice
MT4833	2	20	0	PR36905-B-1-4-1-1	Philippines	PhilRice
MT4835	2	21	0	PR35251-2B-5-5-3-1-1	Philippines	PhilRice
MT4836	2	22	0	PR37286-18-15-6-1-1-2-2	Philippines	PhilRice
MT4841	2	23	0	PR37246-2-3-2-1-1-2-1	Philippines	PhilRice
MT4843	2	24	0	PR37952-B-4-1-3	Philippines	PhilRice
MT4867	2	25	0	PR35786-B-3-3-2-1-1	Philippines	PhilRice
MT4874	2	26	0	PR36831-31-1-1-1-1-1	Philippines	PhilRice
MT4879	2	27	0	PR37952-B-1-1-5	Philippines	PhilRice
MT4886	2	28	0	PR36933-B-1-36-1-1-1	Philippines	PhilRice
MT4889	2	29	0	PR34859-B-4-1-1-2-1(G)	Philippines	PhilRice
MT4896	2	30	0	PR37405-PB-4-9-5-3-7	Philippines	PhilRice
MT4444	2	31	3128704	IR 10F403	IRRI	Submergence/B. Collard
MT4457	2	32	3128637	IR 10F336	IRRI	Submergence/B. Collard
MT4489	2	33	3128591	IR 10F290	IRRI	Submergence/B. Collard
MT4494	2	34	3035282	IR 10F203	IRRI	Submergence/B. Collard
MT4509	2	35	3128655	IR 10F354	IRRI	Submergence/B. Collard
MT4901	2	36	76174	IRRI 104	IRRI	Submergence/B. Collard
MT4902	2	37	94801	IRRI 123	IRRI	Irrigated/P. Virk
MT4903	2	38	1253989	IRRI 154	IRRI	Irrigated/P. Virk
MT4904	2	39	82290	IRRI 105	IRRI	Irrigated/P. Virk
MT5211	2	40	1857191	IRRI 153	IRRI	Hybrid/F. Xie
MT4901	ch	901	76174	IRRI 104	IRRI	Submergence/B. Collard
MT4902	ch	902	94801	IRRI 123	IRRI	Irrigated/P. Virk
MT4903	ch	903	1253989	IRRI 154	IRRI	Irrigated/P. Virk
MT4904	ch	904	82290	IRRI 105	IRRI	Irrigated/P. Virk
MT5211	ch	905	1857191	IRRI 153	IRRI	Hybrid/F. Xie

Table 1. Particulars of entries in the 1st MET Stage 2 - Irrigated Lowland Rice Dry Season (2012)

MET No.	Module No.	Entry No.	GID	Fixed Name	Origin	Group/Scientist
MT4004	1	1	3077132	HHZ 8-SAL 6-SAL 3-Y2	IRRI	Green Super Rice/ J. Ali
MT4008	1	2	3056013	HHZ 1-Y4-Y1	IRRI	Green Super Rice/ J. Ali
MT4017	1	3	3077129	HHZ 8-SAL9-DT 2-Y1	IRRI	Green Super Rice/ J. Ali
MT4018	1	4	3077122	HHZ 12-Y 4-DT 1-Y 1	IRRI	Green Super Rice/ J. Ali
MT4019	1	5	3077125	HHZ 12-DT 10-SAL 1-DT 1	IRRI	Green Super Rice/ J. Ali
MT4209	1	6	2866428	ZGY 1	IRRI	Green Super Rice/ J. Ali
MT4279	1	7	2866425	ZH 1	IRRI	Green Super Rice/ J. Ali
MT4280	1	8	2866427	TME 80518	IRRI	Green Super Rice/ J. Ali
MT4284	1	9	2731025	SAGC-02	IRRI	Green Super Rice/ J. Ali
MT4285	1	10	2731024	Hua 565	IRRI	Green Super Rice/ J. Ali
MT4026	1	11	2697389	IR 10N198	IRRI	Irrigated/P. Virk
MT4036	1	12	2321299	IR 08N195	IRRI	Irrigated/P. Virk
MT4038	1	13	3173098	IR 09A228	IRRI	Irrigated/P. Virk
MT4041	1	14	2433011	IR 09N532	IRRI	Irrigated/P. Virk
MT4049	1	15	2432999	IR 09N533	IRRI	Irrigated/P. Virk
MT4050	1	16	2451135	IR 09N538	IRRI	Irrigated/P. Virk
MT4053	1	17	2697651	IR 10M120	IRRI	Irrigated/P. Virk
MT4054	1	18	2697646	IR 10M122	IRRI	Irrigated/P. Virk
MT4055	1	19	2754550	IR 10A125	IRRI	Irrigated/P. Virk
MT4075	1	20	2628815	IR 09A178	IRRI	Irrigated/P. Virk
MT4087	1	21	2697649	IR 10M121	IRRI	Irrigated/P. Virk
MT4088	1	22	2697641	IR 10M123	IRRI	Irrigated/P. Virk
MT4105	1	23	2337933	IR 08A104	IRRI	Irrigated/P. Virk
MT4110	1	24	2337253	IR 08N158	IRRI	Irrigated/P. Virk
MT4133	1	25	2758426	IR 10A152	IRRI	Irrigated/P. Virk
MT4146	1	26	2336588	IR 08N184	IRRI	Irrigated/P. Virk
MT4148	1	27	1845909	IR 06N119	IRRI	Irrigated/P. Virk
MT4149	1	28	2451117	IR 09A235	IRRI	Irrigated/P. Virk
MT4150	1	29	2472088	IR 09A220	IRRI	Irrigated/P. Virk
MT4152	1	30	2433233	IR 09N495	IRRI	Irrigated/P. Virk
MT4154	1	31	1129071	IR 03A159	IRRI	Irrigated/P. Virk
MT4158	1	32	2451087	IR 09N500	IRRI	Irrigated/P. Virk
MT4161	1	33	2754452	IR 10N118	IRRI	Irrigated/P. Virk
MT4171	1	34	2697172	IR 10A110	IRRI	Irrigated/P. Virk
MT4179	1	35	1838072	IR 06M150	IRRI	Irrigated/P. Virk
MT4180	1	36	2451081	IR 09N502	IRRI	Irrigated/P. Virk
MT4188	1	37	1838100	IR 06M143	IRRI	Irrigated/P. Virk
MT4194	1	38	1838097	IR 06M144	IRRI	Irrigated/P. Virk
MT4195	1	39	1838118	IR 06M139	IRRI	Irrigated/P. Virk

Table 1. Particulars of entries in the 1st MET Stage 2 - Irrigated Lowland Rice Dry Season (2012)

MET No.	Module No.	Entry No.	GID	Fixed Name	Origin	Group/Scientist
MT4196	1	40	3173031	IR 09A136	IRRI	Irrigated/P. Virk
MT4201	1	41	2697934	IR 10M136	IRRI	Irrigated/P. Virk
MT4205	1	42	2696709	IR 10N269	IRRI	Irrigated/P. Virk
MT4206	1	43	2697238	IR 10A134	IRRI	Irrigated/P. Virk
MT4213	1	44	2222968	IR 07A234	IRRI	Irrigated/P. Virk
MT4217	1	45	2451079	IR 09N503	IRRI	Irrigated/P. Virk
MT4220	1	46	1838109	IR 06M141	IRRI	Irrigated/P. Virk
MT4232	1	47	1855724	IR 06N155	IRRI	Irrigated/P. Virk
MT4234	1	48	2348792	IR 08M119	IRRI	Irrigated/P. Virk
MT4237	1	49	2754601	IR 10N108	IRRI	Irrigated/P. Virk
MT4241	1	50	2754625	IR 10N186	IRRI	Irrigated/P. Virk
MT4243	1	51	2754861	IR 10A155	IRRI	Irrigated/P. Virk
MT4257	1	52	2548083	IR 09A152	IRRI	Irrigated/P. Virk
MT4268	1	53	2337730	IR 08N138	IRRI	Irrigated/P. Virk
MT4276	1	54	2697338	IR 10N237	IRRI	Irrigated/P. Virk
MT4289	1	55	2337749	IR 08N136	IRRI	Irrigated/P. Virk
MT4297	1	56	1402302	IR 05N412	IRRI	Irrigated/P. Virk
MT4299	1	57	2337754	IR 08N134	IRRI	Irrigated/P. Virk
MT4320	1	58	1960411	IR 06N211	IRRI	Irrigated/P. Virk
MT4324	1	59	2450869	IR 09N528	IRRI	Irrigated/P. Virk
MT4536	1	60	0	PR37160-8-5-1-1-1-1	Philippines	PhilRice
MT4538	1	61	0	PR37160-13-7-1-1-1-1	Philippines	PhilRice
MT4543	1	62	0	PR37990-3B-15-2	Philippines	PhilRice
MT4546	1	63	0	PR40083-1B-3-2	Philippines	PhilRice
MT4547	1	64	0	PR37275-7-30-8-1-1-2-2-2	Philippines	PhilRice
MT4553	1	65	0	PR37949-3B-3-5-1	Philippines	PhilRice
MT4554	1	66	0	PR37152-2-2-4-1-1-1	Philippines	PhilRice
MT4556	1	67	0	PR37934-3B-8-2-1	Philippines	PhilRice
MT4566	1	68	0	PR37246-2-3-2-1-1-2-2	Philippines	PhilRice
MT4567	1	69	0	PR37252-2-1-1-1-2-2	Philippines	PhilRice
MT4574	1	70	0	PR37951-3B-37-1	Philippines	PhilRice
MT4604	1	71	0	PR37275-7-14-5-1-2-2-1-2	Philippines	PhilRice
MT4226	1	72	2432629	IR 09N522	IRRI	Irrigated/P. Virk
MT4622	1	73	0	PR37951-3B-37-1-2	Philippines	PhilRice
MT4634	1	74	0	PR37942-3B-5-3-2	Philippines	PhilRice
MT4639	1	75	0	PR37139-3-1-3-1-2-1	Philippines	PhilRice
MT4640	1	76	0	PR37934-3B-23-2-1	Philippines	PhilRice
MT4641	1	77	0	PR37866-1B-1-4	Philippines	PhilRice
MT4648	1	78	0	PR37939-3B-1-2	Philippines	PhilRice

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MET No.	Module No.	Entry No.	GID	Fixed Name	Origin	Group/Scientist
MT4650	1	79	0	PR40078-B-12-2	Philippines	PhilRice
MT4706	1	80	0	PR37160-13-4-1-1-1-1	Philippines	PhilRice
MT4712	1	81	0	PR37273-5-16-5-2-1-2-1	Philippines	PhilRice
MT4720	1	82	0	PR35769-B-1-1-2-3-4	Philippines	PhilRice
MT4722	1	83	0	PR35769-B-37-3-1-2-1	Philippines	PhilRice
MT4737	1	84	0	PR35805-B-9-2-3-2-3	Philippines	PhilRice
MT4748	1	85	0	PR30245-10-414	Philippines	PhilRice
MT4756	1	86	0	PR34005-2B-7-1-3-1-2	Philippines	PhilRice
MT4779	1	87	0	PR38046-PB-10-9-4-2-1	Philippines	PhilRice
MT4809	1	88	0	PR37952-B-1-1-2	Philippines	PhilRice
MT4066	1	89	3128689	IR 10F388	IRRI	Submergence/B. Collard
MT4094	1	90	3128661	IR 10F360	IRRI	Submergence/B. Collard
MT4095	1	91	3128708	IR 10F407	IRRI	Submergence/B. Collard
MT4137	1	92	3128640	IR 10F339	IRRI	Submergence/B. Collard
MT4138	1	93	3128629	IR 10F328	IRRI	Submergence/B. Collard
MT4248	1	94	2847870	IR 09F436	IRRI	Submergence/B. Collard
MT4249	1	95	2349314	Ciherang	IRRI	Submergence/B. Collard
MT4901	1	96	76174	IRRI 104	IRRI	Submergence/B. Collard
MT4902	1	97	94801	IRRI 123	IRRI	Irrigated/P. Virk
MT4903	1	98	1253989	IRRI 154	IRRI	Irrigated/P. Virk
MT4904	1	99	82290	IRRI 105	IRRI	Irrigated/P. Virk
MT5211	1	100	1857191	IRRI 153	IRRI	Hybrid/F. Xie
MT4327	2	1	2020800	IR 06N233	IRRI	Irrigated/P. Virk
MT4353	2	2	2220463	IR 07A179	IRRI	Irrigated/P. Virk
MT4363	2	3	1401730	IR 05N419	IRRI	Irrigated/P. Virk
MT4377	2	4	2472354	IR 09N142	IRRI	Irrigated/P. Virk
MT4390	2	5	2754793	IR 10N251	IRRI	Irrigated/P. Virk
MT4398	2	6	1201260	IR 04A115	IRRI	Irrigated/P. Virk
MT4404	2	7	2020798	IR 06N234	IRRI	Irrigated/P. Virk
MT4406	2	8	1265273	IR 05N170	IRRI	Irrigated/P. Virk
MT4413	2	9	2697797	IR 10N230	IRRI	Irrigated/P. Virk
MT4414	2	10	2697810	IR 10N226	IRRI	Irrigated/P. Virk
MT4447	2	11	1264383	IR 04A409	IRRI	Irrigated/P. Virk
MT4471	2	12	2697813	IR 10N225	IRRI	Irrigated/P. Virk
MT4479	2	13	2525088	IR 09N272	IRRI	Irrigated/P. Virk
MT4488	2	14	2696855	IR 10N304	IRRI	Irrigated/P. Virk
MT4807	2	15	0	PR37285-17-31-12-1-1-2	Philippines	PhilRice
MT4817	2	16	0	PR37921-B-3-4-2-1-2	Philippines	PhilRice
MT4818	2	17	0	PR37704-2B-6-1-2-1-1	Philippines	PhilRice

Table 1. Particulars of entries in the 1st MET Stage 2 - Irrigated Lowland Rice Dry Season (2012)

MET No.	Module No.	Entry No.	GID	Fixed Name	Origin	Group/Scientist
MT4829	2	18	0	PR38012-3B-3-1	Philippines	PhilRice
MT4830	2	19	0	PR37921-B-3-2-2	Philippines	PhilRice
MT4833	2	20	0	PR36905-B-1-4-1-1	Philippines	PhilRice
MT4835	2	21	0	PR35251-2B-5-5-3-1-1	Philippines	PhilRice
MT4836	2	22	0	PR37286-18-15-6-1-1-2-2	Philippines	PhilRice
MT4841	2	23	0	PR37246-2-3-2-1-1-2-1	Philippines	PhilRice
MT4843	2	24	0	PR37952-B-4-1-3	Philippines	PhilRice
MT4867	2	25	0	PR35786-B-3-3-2-1-1	Philippines	PhilRice
MT4874	2	26	0	PR36831-31-1-1-1-1-1	Philippines	PhilRice
MT4879	2	27	0	PR37952-B-1-1-5	Philippines	PhilRice
MT4886	2	28	0	PR36933-B-1-36-1-1-1	Philippines	PhilRice
MT4889	2	29	0	PR34859-B-4-1-1-2-1(G)	Philippines	PhilRice
MT4896	2	30	0	PR37405-PB-4-9-5-3-7	Philippines	PhilRice
MT4444	2	31	3128704	IR 10F403	IRRI	Submergence/B. Collard
MT4457	2	32	3128637	IR 10F336	IRRI	Submergence/B. Collard
MT4489	2	33	3128591	IR 10F290	IRRI	Submergence/B. Collard
MT4494	2	34	3035282	IR 10F203	IRRI	Submergence/B. Collard
MT4509	2	35	3128655	IR 10F354	IRRI	Submergence/B. Collard
MT4901	2	36	76174	IRRI 104	IRRI	Submergence/B. Collard
MT4902	2	37	94801	IRRI 123	IRRI	Irrigated/P. Virk
MT4903	2	38	1253989	IRRI 154	IRRI	Irrigated/P. Virk
MT4904	2	39	82290	IRRI 105	IRRI	Irrigated/P. Virk
MT5211	2	40	1857191	IRRI 153	IRRI	Hybrid/F. Xie
MT4901	ch	901	76174	IRRI 104	IRRI	Submergence/B. Collard
MT4902	ch	902	94801	IRRI 123	IRRI	Irrigated/P. Virk
MT4903	ch	903	1253989	IRRI 154	IRRI	Irrigated/P. Virk
MT4904	ch	904	82290	IRRI 105	IRRI	Irrigated/P. Virk
MT5211	ch	905	1857191	IRRI 153	IRRI	Hybrid/F. Xie