

GREEN SUPER RICE (GSR): FACING THE CHALLENGES OF CLIMATE CHANGE TOWARDS FOOD SECURITY & POVERTY ALLEVIATION

In the Philippines, rice production has dramatically improved since the "Green Revolution" era with the development of high yielding varieties that are greatly responsive to agricultural inputs. However, these new varieties are noted to be vulnerable to unfavorable conditions or stresses, abiotic as well as biotic, compared with traditional varieties thereby increasing the risk of yield and production losses under these conditions.

To address these challenges, national and international programs implementers such as the International Rice Research Institute (IRRI), Food and Agriculture Organization (FAO), Philippine Rice Research Institute (PhilRice), University of the Philippines-Los Baños (UPLB) and the Department of Agriculture have collaborated in the Green Super Rice (GSR) project.

This project aimed to evaluate the yield performance and determine sensory characteristics of raw-milled and cooked of various GSR lines along with the farmers variety through the conduct of researcher-managed trials in drought-prone/rainfed, saline, flood-prone/submerged and zinc-deficient conditions, and farmer-managed trials under irrigated condition.

Methodology

RESEARCHER-MANAGED TRIALS

- conducted on 2014WS in four project locations with eight GSR lines and one Farmer's Variety tested under various conditions

- GSR-IR1-1-Y4-Y1
- GSR-IR1-5-S8-D3-SU1
- GSR-IR1-5-S14-S2
- GSR-IR1-8-S6-53-Y2
- GSR-IR1-11
- GSR-IR1-12-D10-S1-D1 (GSR 12A)
- GSR-IR1-12
- NSIC Rc160 (Farmer's Variety)

FARMER-MANAGED TRIALS

- conducted on 2014-15DS in four project locations with three GSR lines and one Farmer's Variety tested under irrigated condition.

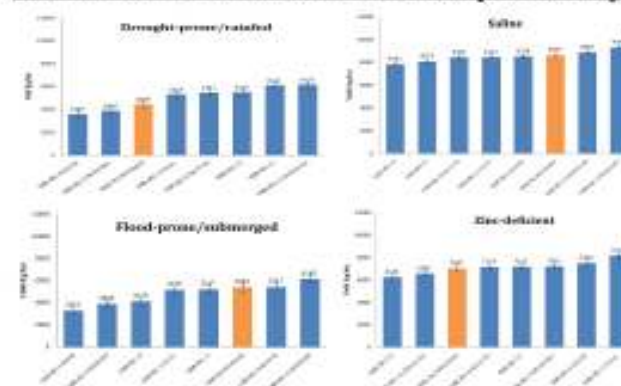
- GSR-IR1-1-Y4-Y1
- GSR-IR1-8-S6-53-Y2
- GSR-IR1-12-D10-S1-D1 (GSR 12A)
- NSIC Rc160 (Farmer's Variety)

PROJECT LOCATIONS



Significant Results

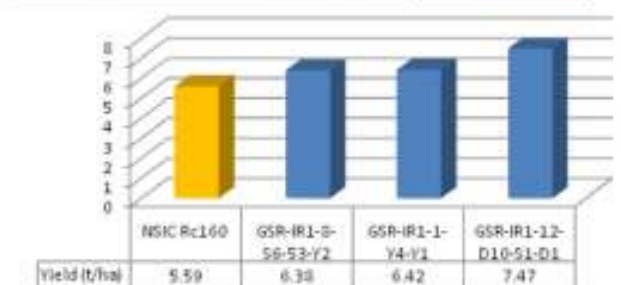
RESEARCHER-MANAGED TRIALS (2014 WS)



TOP YIELDERS across locations

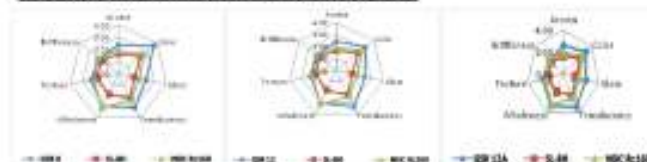
- (particularly under the indicated conditions)
- GSR-IR1-1-Y4-Y1 - drought/rainfed
 - GSR-IR1-8-S6-53-Y2 - drought/rainfed; flood-prone/submerged; zinc-deficient
 - GSR-IR1-12-D10-S1-D1 (GSR 12A) - drought/rainfed; submerged; saline

FARMER-MANAGED TRIALS (2014-15 DS)



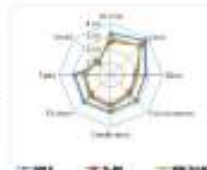
The highest yielder, GSR-IR1-12-D10-S1-D1 (GSR 12A), has a yield advantage of 1.88 t/ha over the Farmer's variety which is equivalent to an additional farmer's income of roughly Php 37,600 per hectare per cropping season.

SENSORY CHARACTERISTICS



For raw-milled rice, all the GSR lines were more aromatic, glossy, whitish and translucent as compared to NSIC Rc160. GSR 8, GSR 12 and GSR 12A stood out in terms of these sensory attributes.

For cooked rice, all GSR lines, except GSR 8, were rated similarly as SL-8H and NSIC Rc160. GSR 8 was proved to be better than either SL-8H and NSIC Rc160 in terms of aroma, color, gloss, cohesiveness, tenderness, texture and taste.



MC Villanueva, KB Bergonio, JM Villareal
Department of Agriculture - Regional Field Office 1
San Fernando City, La Union