



# বাংলাদেশ ধান গবেষণা ইনস্টিটিউট

Bangladesh Rice Research Institute, Gazipur

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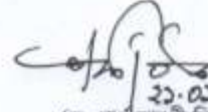
পত্র নং জি-৯৯/০৯/১১১৫

তারিখঃ ২১.০১.২০১৪

বিষয়ঃ জনসাধারণের অধিকতর অবগতি ও মতামত গ্রহণের অভিপ্রায়ে গোশ্চেন রাইস এর নিয়ন্ত্রিত-মাঠ-পরীক্ষা সম্পর্কিত 'পাবলিক ইনফরমেশন শীট' ওয়েব সাইটে প্রকাশ প্রসঙ্গে।

উপর্যুক্ত বিষয়ের আলোকে গোশ্চেন রাইস এর নিয়ন্ত্রিত-মাঠ-পরীক্ষা সম্পর্কে জনসাধারণের অধিকতর অবগতি ও মতামত গ্রহণের জন্য বাংলা ও ইংরেজী ভাষায় প্রণীত উক্ত পরীক্ষা সংশ্লিষ্ট 'পাবলিক ইনফরমেশন শীট' বাংলাদেশ ধান গবেষণা ইনস্টিটিউটের ওয়েব সাইটে প্রকাশ করার জন্য মহাপরিচালক মহোদয়ের অনুমোদনক্রমে অনুরোধ করা হলো।

০২। সংশ্লিষ্ট সকলকে আগামী ৩০ দিনের মধ্যে বর্ণিত পরীক্ষা সম্পর্কে মতামত দেয়ার জন্য অনুরোধ করা হলো। মতামত প্রেরণের ই-মেইল এড্রেসঃ [psbiswasbrri@yahoo.com](mailto:psbiswasbrri@yahoo.com)

  
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(ড. পার্ব সারখী বিশ্বাস)

প্রধান বৈজ্ঞানিক কর্মকর্তা

উদ্ভিদ প্রজনন বিভাগ

এবং

প্রধান গবেষক,

গোশ্চেন রাইস প্রকল্প

বাংলাদেশ ধান গবেষণা ইনস্টিটিউট

১। প্রধান

কৃষি পরিসংখ্যান বিভাগ, ত্রি

সদয় অবগতির জন্য অনুলিপিঃ

- ১। প্রধান, উদ্ভিদ প্রজনন বিভাগ, ত্রি।
- ২। মহাপরিচালক মহোদয়ের একান্ত সচিব, ত্রি
- ৩। পরিচালক গবেষণা মহোদয়ের ব্যক্তিগত সহকারী, ত্রি।
- ৪। সংশ্লিষ্ট নথি।

## **PUBLIC INFORMATION SHEET FOR FIELD TRIAL**

(To be accomplished by the Applicant in a language/dialect known to the community where the field testing is to be conducted and notarized)

### **PROPOSAL FOR THE FIELD TRIAL OF Golden Rice 2 - Event R Introgression lines of BRRRI dhan29**

**1. Applicant's Name, Address, Telephone Number, Facsimile Number, E-Mail Address (Please contact this address for more information)**

Bangladesh Rice Research Institute (BRRRI)  
Gazipur-1701, Bangladesh  
Phone No.: +88 02 9257401-5 Fax No.: +88 02 9261110  
Email: [dg@brrri.gov.bd](mailto:dg@brrri.gov.bd); [brrihq@yahoo.com](mailto:brrihq@yahoo.com)

**2. Name of Principal Investigator**

Dr. Partha S. Biswas, PSO, Bangladesh Rice Research Institute, Gazipur-1701

**3. Name of Responsible Officer/Authorized Representative**

Dr. Jiban Krishna Biswas, Director General (In Charge), BRRRI

**4. Description of the Regulated Article for Field Testing (mention the crop, transformation event, new trait conferred, name of the gene transferred, method of transformation, and advantages of the trait conferred)**

Golden Rice is a new type of rice that contains beta carotene, a source of vitamin A; rice available today provides almost no beta carotene. It was developed through genetic engineering with genes- phytoene synthase (Psy) from corn and phytoene desaturase (CrtI) from a food-grade micro-organism which together synthesize beta carotene in rice endosperm. A third gene, called phospho-mannose isomerase (PMI), was used as selectable marker gene. Initial molecular studies have shown that these three genes have no allergenic potential. Field testing is proposed for Golden Rice 2 event R (GR2-R) into the background of BRRRI dhan29, most popular rice variety in the boro season. Since rice is widely grown and consumed in the country, Golden Rice could be an additional means to improve vitamin A status of consumers.

**5. Purpose (s) of the Field Trial (state the objectives of the proposed project)**

To evaluate the agronomic and product performance under Bangladesh field conditions of advanced introgressed breeding lines of GR2-R into BRRRI dhan29 background.

To conduct the necessary field evaluations for the environmental biosafety assessment of event GR2-R.

**6. Potential Benefits and Risks of the Regulated Article Relative to the Non-Modified Host Organism**

a) *Potential Benefits (describe how the new trait will benefit farming, the farmer, the farming environment, and society as a whole)*

Many people in the Bangladesh do not get enough vitamin A or beta carotene from the food they eat, contributing to the serious public health problem of vitamin A deficiency. Vitamin A deficiency impairs the immune system, which increases the risk of death from certain common infections among young children. It is also the leading cause of blindness among children. Vitamin A deficiency also particularly affects women who are pregnant or nursing as their nutrient needs increase. Among pregnant women, vitamin A deficiency can cause night blindness and may increase the risk of maternal mortality.

Because rice is widely produced and consumed, Golden Rice has the potential to reach many people, including those who do not have reliable access to or cannot afford other sources of vitamin A. Initial study showed that daily consumption of a very modest amount of Golden Rice could supply a significant amount of vitamin A. Golden Rice is intended to be used in combination with existing approaches to overcome vitamin A deficiency, including eating foods that are naturally high in vitamin A or beta carotene, eating foods fortified with vitamin A, taking vitamin A supplements, and optimal breastfeeding practices.

Golden Rice varieties will be developed with the same high yield, pest resistance and grain and eating qualities as non-Golden Rice varieties. Golden Rice can be planted, harvested, threshed, stored, and milled like any other rice.

b) *Potential Risks (summarize human health and environmental assessments done and studies implemented indicating potential effects on human health and the environment)*

We do not anticipate any risk to human health in this study. The beta carotene in Golden rice is the same as the beta carotene that is found and consumed in many nutritious foods and supplements. The genes that have been inserted into Golden Rice are not related to any known allergens or toxins.

Rice is essentially self-pollinating, so the chance of cross-pollination between Golden Rice and other varieties is very small.

**7. Brief Summary of the Effects of the Regulated Article on the Target Organism, If It is a Pest Protected Plant (add any information known on its effects on non-target organism)**

Golden Rice is a potential tool to reduce vitamin A deficiency in countries where rice is widely produced and consumed. It is intended to be produced and consumed by Bangladeshi people, including those who do not have reliable access to or cannot afford other sources of vitamin A. Daily consumption of a very modest amount of Golden Rice could supply a significant amount of vitamin A. Golden Rice is intended to be used in combination with existing approaches to overcome vitamin A deficiency, including eating foods that are naturally high in vitamin A or beta carotene, eating foods fortified with vitamin A, taking vitamin A supplements, and optimal breastfeeding practices.

However, Golden Rice is not pest protected transgenic plant rather it has nutritional benefits. Since initial studies with the genes used in developing golden rice did not find any allergenic potential, we do not anticipated any adverse effect on other animals.

## **8. Location and Size of the Proposed Field Testing Site**

Size: ~900 square meters

BARI CFT site, Bangladesh Agricultural Research Institute, Gazipur

## **9. Duration of the Field Testing**

One season (Boro 2013-14): December 2013 – June 2014

## **10. Precautionary measures for regulated article during trial period**

- A fencing has been installed around the trial inside the CFT site
- Any rice variety will not be grown around 200 feet of the experimental site
- Three rows of cognate variety (BBRI dhan29) around the experimental plots and 5 rows corn plants will be grown around the experimental area to avoid pollen flow
- A double drainage system improvised with PVC pipe capped with spider net will be used to avoid outflow of seeds and vegetative parts with water from drainage channel. The drained water will be allowed deposit in a pit inside experimental site
- Security persons will be deployed at the site to guard the trial
- The plots will covered with net to keep way the stray birds
- Movement of any materials will be done in compliance of all relevant biosafety and phytosanitary requirements of Bangladesh.
- Access to the experimental site will be limited within the authorized people. A logbook will be maintained to record the entry of personnel.
- All the crop residues, vegetative parts or excess seeds will be burn down and/or buried in a pit at the experimental area.
- Above all, security people will be deployed at all times to guard out-filtration of seeds or any vegetative parts from the trial site through any illegal means

## **11. Method of Disposal of Regulated Article after Field Testing**

After harvest, all stubbles will be ploughed under, burying all plant debris. The test site will be kept fallow at least 45 days and be monitored for the survival of rice plants; the site will be tilled or hand-weeded as frequently as needed during the fallow period to remove any rice plants.

## **12. Government Agencies Consulted Before Field Testing**

Local Government and district administration (Mayor, Gazipur City Corporation; Deputy Commissioner and Superintendent of Police of Gazipur District and Councilor, Ward No. 27 of Gazipur City Corporation;) have been informed officially

For Additional Information on the proposed field testing, please contact:

Dr. Jibon Krisna Biswas

Director General  
Bangladesh Rice Research Institute  
Gazipur-1701  
Cell Phone:  
Email: dg@brrri.gov.bd

The public is hereby invited to submit their comments on the proposed field testing, within thirty (30) days from the date of posting, to: [psbiswasbrrri@yahoo.com](mailto:psbiswasbrrri@yahoo.com)