



# THE UNIVERSITY OF BURDWAN

## WORKSHOP ON SOCIAL AWARENESS

PLANT PHYSIOLOGY PARADIGM FOR AUGMENTING CROP  
PRODUCTIVITY UNDER CLIMATE CHANGE IN POST GREEN  
REVOLUTION PERIOD.

PRESERVATION OPTIONS OF RICE SEEDS FOR BETTER  
MAINTAINING VIGOUR AND VIABILITY.

Under the guidance of

**Prof. Soumen Bhattacharjee**

**THE UNIVERSITY OF BURDWAN**

**Purba Bardhaman, West Bengal.**

**Presented by- Shreya Mukherjee**

**Class- M.Sc Semester III**

**Specialization in "Plant physiology and biochemistry".**

**Roll No.- BUR/BOT/2021/040**

**Reg No.- 201801024279 of 2018-19**

**Paper code- MSBO307**

# ACKNOWLEDGEMENT

- ❖ I would like to express my special thanks and gratitude to my respected Prof. Mr. Soumen Bhattacharjee for his valuable guidance and immense support in completing my project.
  
- ❖ I would also like to thank to the Panchayat Office employees and the field workers who joined with us and provided us with all the facilities that was required.
  
- ❖ Last but not the least, I would like to thank my parent and my classmates for helping me in completing my work.

# VENUE

Rayan 1 No. Gram Panchayat

PIN No.- 713104

Purba Burdwan, West Bengal



Date- 24<sup>th</sup> February, 2023



# TARGET AUDIENCE



Audience member including Panchayat Pradhan, other official stuffs and local farmers.

Rayan - 1 No. G.P. - Mithun Hall.

ଭୋକାପ୍ରଦାନକାରୀଙ୍କର ନାମ → କ୍ରମ(ନଂ) ରଖ

1) Goutam Mondal - Rayan - 24/2/2023

2) Sisir Mondal - "

3) Sudip Roy - Nari

4) Prasanta Mondal - " 24.2.2023

5) ବିନୟ କୁମାର ଦେବ - ବାଲ୍ୟା ୨୫.୨.୨୩

6) ବିନୟ କୁମାର ଦେବ - ବାଲ୍ୟା ୨୫.୨.୨୩

7) Arsh Kumar Dey - Rayan - G.P.

8) Arsh Kr. Mondal - Rayan - 1 G.P.

9) ବିନୟ କୁମାର ଦେବ - " 24/2/2023

10) Aloke Banerjee - " 24/2/2023

# PROCEDURE

- ❖ Firstly, we took an application form from our respected Prof. Mr. Soumen Bhattacharjee containing the students name and roll number.
- ❖ Then, we submitted it to Rayan 1. NO. Gram Panchayat Office for the appreciation of Panchayat Pradan.
- ❖ Panchayat Pradhan signed the application and date of the programme was fixed accordingly.
- ❖ Then we went to fulfill our curriculum on 24th February 2023. We met with the farmers and discussed our topics and lastly we provided them a handout presentation related to our discussion.

# AIMS AND OBJECTIVE

- ❖ The main objective of this SOCIAL AWARENESS CAMPAIGN which we've organized is to encourage local field workers to create favorable conditions for good crop growth involving soil management, seed germination, emergence of young plants, root growth, plant development, grain formation and harvest.
  
- ❖ And for seed preservation (especially rice) they should maintain some particular storage strategies for keeping it's viability and vigour intact.
  
- ❖ Sustained productivity of crops goes in hand with good management practices.



# INPUT

➤ **Introduction:-** Rice is a key food security crop in many countries including India. Despite the increasing demand for rice, yields have been low. Some of the factors contributing to low yields include pests and diseases, low quality seeds, water scarcity and lack of appropriate storage facilities. It is important to preserve the genetic integrity of seeds during storage to retain high seed quality. Factors that affect quality of seed during storage include drying temperature, moisture content, storage temperature, oxygen supply, pest and diseases, packaging material and duration of storage. The optimum moisture content for storing rice seed is between 12-14%. However, reduction in storage temperature and seed moisture content has been shown to increase seed storage time. Therefore to achieve acceptable levels of viability and vigour, proper packaging is crucial as inappropriate packaging material leads to deterioration in the quality of seed during storage.



- **Storage systems:**-Rice storage systems can be hermetic containers. through bag, bulk, or hermetic containers.
- **Bag storage:** Grain is stored in 40-80 kg bays from either jute or woven Plastic.
- **Bulk storage:** Grain stored in bulk at the farm or at commercial collection houses.
- **Hermetic storage:** Grain is stored in an airtight container so that moisture content of the stored grain will remain the same as when it was sealed. These storages can extend germination life of seeds, control insect grain pests and improve headrice recovery.



1. IRRI Superbag 2. Coocoon storage

➤ **Moisture content for Safe storage:**--The amount of moisture in the seed is probably the most important factor influencing its viability during Storage, moisture content is at the root of many problems in the storage. Moisture content is at the root of many problems in the storage- increased metabolic activity, high respiration, fungal attack, leading ultimately to the death of the seed. So, the moisture content should be prevented in a particular level. MC is the basis of one of Harrington's rules of thumb- " For every decrease of 1% seed moisture content, the life of the seed doubles". maintaining low moisture content is the best prevention for all moisture based Problems. For Rice maintaining  $MC < 13\%$  is regarded for the storage of seeds.  $MC > 13\%$  can exhibit increased respiration, heating and fungal invasion resulting in Poor seed viability & vigour.

➤ **Temp. & Relative humidity during storage:-** Successful seed storage depends primarily on the percentage of relative humidity and temperature in storage facility. [ Harrington's thumb rule sum of the % of RH in storage environment and storage temperature (In °F) is 100 (applicable at and temperature  $< 50^{\circ}\text{F}$ )] There is an intricate relationship between storage temperature and seed moisture content. The ideal condition for rice seed storage is usually the combination of low seed moisture content and low storage temperature.



Storage Period	Required MC for safe storage	Potential problems
Weeks to a few months	14% or less	Molds, discolouration, respiration loss, insect damage.
8-12 months	13% or less	Insect damage
Storage of farmer's seeds	12% or less	Loss of germination
<1 year	9% or less	Loss of germination



# The University of Burdwan

বিষয় :- ধান বীজের ভালো কার্যক্ষমতা ও জীবনীশক্তি বজায় রাখার  
জন্য সংরক্ষণ পদ্ধতি:-

উপস্থাপনায়:- শ্রেয়া মুখার্জী

রোল নং:- BUR/BOT/2021/040

রেজিস্ট্রেশন নং:- 201801024279 of 2018-19

ক্লাস:- Semester III

Paper- MSBO307

**আলোচ্য বিষয়:-** ধান হলো ভারতসহ অন্যান্য অনেক দেশের প্রধান খাদ্যশস্য। বর্তমানে

জনসংখ্যা বৃদ্ধির সাথে সাথে কৃষি জমির পরিমাণ ক্রমশ হ্রাস পাচ্ছে। এই ক্রমবর্ধমান চাহিদাকে  
মেটানোর জন্য আমাদের বৈজ্ঞানিক পদ্ধতিতে ধান বীজের মান, চাষ পদ্ধতি, ও সংরক্ষণকে আরো  
ভালো করতে হবে।