

PRE- STORAGE TREATMENT OF RICE SEED: A TECHNIQUE OF INCREASING RICE PRODUCTIVITY THROUGH MAINTAINING QUALITY AND REDUCING STORAGE COST OF RICE SEED

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Executive summary

In Bangladesh, farmers produce and preserve more than 80% of rice seed without having proper knowledge, thereby deteriorated rapidly. This is mostly caused by lipid peroxidation, protein and enzyme inactivation, and oxidative damage at high temperature and high moisture content. Chemicals like acetylsalicylic acid, ascorbic acid, common bleaching powder effectively can maintain seed vigor and viability reducing these chemical changes. Therefore, this project was aimed to develop an effective pre-storage seed treatment technique to maintain quality in storage and to increase cost effective rice production. To achieve these objectives a laboratory experiment was conducted at the department of Agronomy, SAU, Dhaka with two rice varieties (BR11 and BRR1 dhan87) and five seed treating chemicals (no pre-storage seed treatment, ascorbic acid @ 500 mg kg⁻¹ seed, common bleaching powder @ 2 g kg⁻¹ seed, red- chilli @ 2 g kg⁻¹ seed and aspirin @ 2 g kg⁻¹ seed) and was arranged in a completely randomized design with four replications. Eighty containers of which forty were filled with 250 g BR11 and rest with 250 g BRR1 dhan87 rice seeds. Seeds of each container were treated as per treatment. Seed quality attributes *viz.*, germination (%), viability (%), germination speed index, seedling vigor index, seedling dry weight, mean root length of seedling, mean shoot length of seedling, mean total length of seedling and relative values of these parameters were recorded at storage, 8 months after storage and 9 months after storage. Results indicated that up to 8 months after storage, germination, viability, relative germination and relative viability were statistically similar to that at storage both in BR11 and BRR1 dhan87. But at 9 months after storage these parameters reduced drastically in BR11, whereas were statistically similar to that at 8 months after storage in BRR1 dhan87. Ascorbic acid and red chilli improved these parameters at 9 months after storage remarkably in BR11, whereas in BRR1 dhan87 effects were negligible. Data on all other parameters recorded supported the above mentioned results.

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