

OPTIMIZING RATE AND APPLICATION TIME OF SEED TREATING CHEMICALS AGAINST RAPIDLY DETERIORATING RICE SEED UNDER STORAGE CONDITION

Md. Shahidul Islam*

Executive Summary

A laboratory experiment was conducted at the department of Agronomy, SAU, Dhaka with rapidly deteriorating rice seed (BRRI dhan 75) and thirteen seed treatments with two seed treating chemicals ascorbic acid and red chilli powder. These two seed treating chemicals were selected from their superior performance against aspirin, bleaching powder shown in a previous experiment. The thirteen treatments were: T₀ = no seed treatment, T₁ = ascorbic acid @ 500 mg/kg seed at storage, T₂ = ascorbic acid @ 500 mg/kg seed at 6 months after storage, T₃ = ascorbic acid @ 500 mg/kg seed both at storage and 6 months after storage, T₄ = ascorbic acid @ 750 mg/kg seed at storage, T₅ = ascorbic acid @ 750 mg/kg seed at 6 months after storage, T₆ = ascorbic acid @ 750 mg/kg seed both at storage and 6 months after, T₇ = red chilli powder @ 2 g/kg seed at storage, T₈ = red chilli powder @ 2 g/kg seed at 6 months after storage, T₉ = red chilli powder @ 2 g/kg seed both at storage and 6 months after, T₁₀ = red chilli powder @ 3 g/kg seed at storage, T₁₁ = red chilli powder @ 3 g/kg seed at 6 months after storage, T₁₂ = red chilli powder @ 3 g/kg seed both at storage and 6 months after storage was arranged in a completely randomized block design with four replications. Fifty- two containers of each were filled with 250 g BRRI dhan 75 rice seeds. Seeds of each container were treated with seed treating chemicals as per treatment. Seed quality attributes viz., germination percentage (%), viability (%), germination speed index, seedling vigor index, seedling dry weight, root length of seedling and shoot length of seedling were recorded at storage, at 3 months after storage, 5 months after storage, 7 months after storage and 9 months after storage. Results indicated that up to 5 months after storage increased germination percentage (respectively max. 90% in T₇, 92% T₉), viability (respectively max. 97.9% both in T₆ and T₇, 97.9% in T₃, T₄, T₇, T₈), germination speed index, seedling vigor index, seedling dry weight, root length of seedling and shoot length of seedling and thereafter decreased 7 months after storage (germination max. 84% in T₁₀, viability max. 96.2% in T₅ which is similar to T₀). But at 9 months after storage, these parameters reduced drastically under control condition, whereas all the seed treating chemicals increased these parameters compared to control. Ascorbic acid @ 500 mg/kg of seed both at storage and 6 months after storage and red chilli powder @ 3 g/kg of seed at storage are most suitable for long term storage of BRRI dhan 75 rice seed although these seeds deteriorated fast under control condition.

*Professor., Dept. of Agronomy, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh