

**ENHANCEMENT OF SPROUTING ENERGY WITH WATER
TREATMENT AND IDENTIFICATION OF FUNGAL
ASSOCIATION IN SEEDS OF CHILLI (*Capsicum annum* L.)
CULTIVAR PC-1**



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ABSTRACT

Chilli pepper (*Capsicum annum* L.) is one of the most important cash crops grown in Sri Lanka. It has become an essential ingredient in Sri Lankan meals. Batticaloa district farmers prefer PC-1 variety due to high yield and adaptability. At present seed viability, seed vigour and seed health are the main limitations with planting chilli seeds without pre-treatment. This experiment was carried out to study the effect of water treatment on sprouting energy of seeds and seedborne pathogens harboured in chilli seeds.

Five different treatments in terms of seeds soaked in water were tested to assess the germination percentage, seedling vigour, uniformity of germination and control of seedborne pathogens. Also seedborne pathogens were identified in the chilli seeds.

Five seed lots soaked in water and oven dried at 105°C for 9 hours once (T1), twice (T2), thrice (T3), four times (T4) and the unsoaked seeds as control (T5) were used as treatments in this experiment and each treatment was replicated four times. The seeds were planted in the pots containing sterilized soil, which were arranged in Complete Randomized Design in the protected structure. Five seeds from each treatment were placed on the agar plates, replicated four times to identify the seedborne pathogens under aseptic conditions. Weekly observations were taken in both field and laboratory conditions. Data were collected and analyzed with Statistical Analysis Software by using Analysis of Variance and Tukey grouping.

From the results, seeds soaked in water once (T1) and twice (T2) followed by drying showed better performance than the other treatments including the control with respect to emergence of seedlings, uniformity of seedlings, fresh and dry weight and vigourousness of seedlings. The seedborne pathogens were identified in all the

treatments. *Aspergillus niger*, *Alternaria alternate*, *Colletotrichum capsici* and a fungus similar to *Thanatephorus cucumeris* were identified as seedborne fungi in chilli seeds. No correlation between fungal association with seeds and germination was noticed.

Based on the experimental results, it could be concluded that seeds soaked once and twice for a period of 24hrs and drying are better in performance in seed germination, seedling vigour and growth and development of seedlings due to the effect of enhancement of sprouting energy by means of soaking of the seeds.

Key words: Seed germination, seed pathogen, seedling vigour, sprouting energy, water treatment