

## ABSTRACT

Rice (*Oryza sativa* L.) is a staple food crop whose production is often constrained by seedborne fungal pathogens that reduce seed viability, seedling vigor, and yield. This study aimed to detect, identify, and determine the pathogenicity of seedborne fungi associated with several rice varieties. Seed health testing was conducted using the blotter test method with two treatments, namely with and without seed surface sterilization. Observations were made on fungal growth, morphological characteristics, and their pathogenic effects on seed germination and seedling development. The results showed that rice seeds were infected by multiple seedborne fungi originating from both field and storage conditions. Eight fungal taxa were identified: *Aspergillus niger*, *Aspergillus flavus*, *Penicillium* sp. 1, *Penicillium* sp. 2, *Rhizopus* sp., *Fusarium* sp., *Curvularia* sp., and an unidentified isolate (Isolate A). Pathogenicity tests revealed varying levels of infection ranging from 0% to 100%, with some fungi causing seed decay, necrosis of seedlings, growth inhibition, and even seedling death. Germination percentage was slightly higher in sterilized seeds (91.11%) compared to non-sterilized seeds (90.11%), while the infection rate was lower in sterilized seeds (5.67%) than in non-sterilized seeds (12.78%). These findings highlight that seedborne fungi pose significant threats to rice production by impairing seed quality and seedling establishment. The presence of pathogenic fungi emphasizes the importance of seed health testing and management strategies to prevent the spread of fungal diseases through seeds.

**Keywords:** *Aspergillus*, pathogenicity, *Penicillium*, seed-borne diseases, seed health testing.