

**DETERMINATION OF THE OPTIMUM IRRADIATION TIME TO ELIMINATE  
SEED-BORNE DISEASES OF RICE (*Oryza sativa* L.)  
AND MAIZE (*Zea mays* L.).**

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Seed-borne diseases caused by microorganism are common in rice and maize and often contribute to poor stand establishment thus contributing to considerable yield losses.

The purpose of this study was to evaluate the effect of microwave irradiation for the control of seed-borne fungi in four varieties of paddy and maize cultivars, and to determine the effect of irradiation on seed qualities.

Experiment was consisted of four paddy varieties Bg 94 -1, Bg 352, Bg 403, Bg 450, and maize variety ruwan. Irradiation at 0, 5, 10, 15, 30, 45 and 60 second full strength microwave (820 W, 2450 MHz) and a fungicide treatment (Captan 50% WP) were used as seed treatments. Application of microwave treatment was done on seeds in opened and closed petri dishes. Each treatment had four replications. Immediately after given the microwave treatments seeds were subjected to germination, viability, vigour tests and blotter test to take diseases counts.

The results revealed that the disease percentages were decreasing with the increase of microwave exposure duration. Thus germination, viability and vigour were reduced. Specifically at 45 and 60 seconds all the seeds were non viable and showed no germination. Difference on openness and closeness of the petri dish did not affect much on seed borne diseases as well as on seed qualities.

For maize seeds 10 second and for paddy 05 second were the optimum microwave irradiation durations to eliminate seed-borne diseases without greatly affecting the seed qualities.

Keywords :- Seed-borne diseases; Microwave irradiation; Rice; Maize.