

Abstract

Nine rice cultivars were evaluated under screenhouse conditions for resistance to *Rice yellow mottle virus* (RYMV) and possible seed transmission. Completely randomised design with three replications was used. In Experiment 1, the seedlings were inoculated with the virus at two weeks after planting. In Experiment 2, the seeds collected from Experiment 1 were dried for four weeks before planting. For each genotype, the seeds from healthy plants were planted as a control. Disease incidence and severity (scales 1–9), yield and yield components were recorded. Statistical analyses included Area Under the Disease Progress Curve (AUDPC) and independent *t* test. The cultivars FARO 37, FARO 52 and Gigante were highly resistant, whereas WAB189-B38HB was resistant. Paddy yield was highest (3.6 g) in FARO 37. There were no symptoms of virus disease in all the plants originating from the seeds of RYMV-infected plants. The differences between the seeds from infected and healthy plants for all the measured traits were not significant ($p > 0.05$). The number of days to seedling emergence was uniform (5.5 days) in all the cultivars. Plant height, number of tillers per plant, number of days to heading and paddy yield from the seeds of virus-infected plants varied from 54.8 to 68.4 cm, 17 to 21, 85.3 to 96 days and 2.7 to 4 g, respectively. Conversely, a range of 54.9–68.7 cm, 17–22, 83–95 days and 2.8–4.1 g was found in the seeds of healthy plants. Selection and cultivation of high-yielding, resistant and healthy seeds would enhance food security.

Keywords: AUDPC; genetic resistance; rice; Rice yellow mottle virus; yield