B-17 Evaluation of media on the generation of nitrate reduction mutants in *Fusarium oxysporum* f.sp. *cubense*, the causal organism of Panama disease in banana

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Nitrate reduction mutants of nit-mutants (NRM) have been isolated in a variety of fungi. The medium has a significant importance for the frequency of NRM recovery. This study reports on the efficacy of commonly used media for selecting NRM of *Fusarium oxysporum* f.sp. *cubense* (FOC), an important pathogen which causes Panama disease in banana (*Musa* spp.).

15 strains of FOC isolated from the discoloured vascular tissue of wilted bananas in Sri Lanka, were used to generate NRM on 3 media (potato dextrose agar, potato sucrose agar and minimal medium). Each was amended with 1.5, 3.0 and 4.0%, $KClO_3$, and was designated as PDAC, PSAC and MMC respectively.

All tested strains yielded NRM when cultured on PDAC, PSAC and MMC. The mean frequencies of *nit*-mutants per colony on PSAC at 1.5 and 3.0% concentrations of chlorate were significantly higher ($p<0.05$) than their respective values on other media across all concentrations studied. PSAC with 3.0% concentration of chlorate was the most effective medium with the highest mean frequency. The lowest mean frequency was recorded at 4.0% concentration of chlorate across all media studied.

NRM of FOC can be readily recovered by selecting for chlorate resistance. In fungi, NRM are useful for testing vegetative compatibility between isolates, for studying regulation of nitrogen metabolism, and providing selectable markers for transformation. They are particularly valuable in imperfect fungi, such as FOC, in which sexual markers are not available.