B-04 Genetic instability of *Fusarium oxysporum* f. sp. *cubense*, the causal organism of Panama disease in banana

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Fusarium wilt of bananas (*Musa* spp.) or Panama disease, caused by *Fusarium oxysporum* f. sp. *cubense* (FOC), has been identified as one of the limiting factors in banana production in Sri Lanka.

Strains of FOC produce spontaneous, chlorate-resistant sectors on medium containing chlorate. The sector formation reflects its genetic instability. Frequency of sectoring is affected by environmental conditions, such as temperature, nutrient levels and selection pressures.

15 strains of FOC isolated from the discoloured vascular tissue of wilted bananas in Sri Lanka were examined for their ability to sector 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.

Sectors were readily recovered from all strains when cultured on PDAC, PSAC and MMC. Mean values of sectors per colony on PDAC and PSAC; each with 3.0% concentration of chlorate were significantly higher ($p<0.05$) than their values on other media across all concentrations studied. The highest mean value was recorded on PSAC at 3.0% concentration of chlorate. The best concentration for the highest mean value of sectors per colony was 3.0% across all media studied.

The instability on chlorate medium appears to be a general characteristic of strains of FOC. Genetic mechanisms which increase variability could enhance rapid adaptation of the pathogen population to host resistance, fungicides and extreme environmental changes. Reliance on mutation rather than sexual recombination is particularly important for organisms, such as FOC, that primarily depend on asexual reproduction.