

A study of three major postharvest fungal pathogens responsible for anthracnose and crown rot on 'Embul' banana and the effect of preharvest gibberellic acid sprays and bagging

Anthracnose (*Colletotrichum musae*), and crown rot [*C. musae*, *Botrydiplodia theobromae*, (= *Lasiodiplodia theobromae*) *Fusarium sp.* and other fungi] are major postharvest diseases of 'Embul' banana. The influence of growth of the 3 major pathogens, on each other and the effect of two preharvest treatments on disease incidence were monitored.

The pathogens from typical lesions were isolated (potato dextrose agar or oat meal agar). Combinations of two per plate (n=12) were inoculated to the two media and colony diameters were measured 8 hourly. Banana bunches were subject to preharvest treatments; spraying gibberellic acid (GA)-100 ppm, bagging (brown paper:gauge-0.11 mm and colourless polythene cape:gauge 0.06 mm), combination of spraying GA and bagging (4 trials, approx. 120 fruits per trial). After harvest disease occurrence (percent lesion lengths-anthracnose/crown rot of average fruit length) on hands were assessed daily. Peel colour was assessed visually. Ethylene production was monitored on the last replicate of harvested banana bunches by gas chromatography.

On both media, *B. theobromae* showed faster growth (p=0.05). *Fusarium sp.* grew faster than *C. musae* on day 1, but *vice versa* on day 2 (p=0.05). After colonies touched, *B. theobromae* grew over *C. musae* colonies. Crown rot was delayed in all treatments (p=0.13). Anthracnose severity was not reduced. GA slightly reduced anthracnose. Data generated on ethylene analysis to date, indicated an earlier climacteric rise in both combination and bagging treatments than control, corresponded to peel colour ranks. *B. theobromae*, a pathogen associated with crown rot, grew faster *in vitro*. Bagging, GA and combination, caused a reduction in crown rot initiation, but anthracnose was not reduced. Bagging appeared to promote ethylene production. Investigations are underway on direct effect of GA on the pathogens.