Title Selection and screening antagonistic yeasts for controlling crown rot of banana cv. Hom Thong, caused by *Lasiodiplodia theobromae* (Pat.) Griffs & Maubl

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Abstract

Eleven yeast isolates were evaluated for their antagonistic properties both in *vitro* using potato dextrose broth (PDB) and on bananas for controlling the fungal pathogen, *Ladiodiplodia theobromae* (Pat.) Griffs & Maubl. And crown rot respectively. On PDB at 25°C for 12 h., an effective yeasts (10^8 spores/ml) were *Candida guilliermondii, Aureobasidium pullulans* and *Endomycopsis fibuligera* whereas application of culture filtrates and autoclaved yeast cells of these yeasts were ineffective in reducing the growth of this fungus. An application of a cell suspension (10^8 spores/ml) of the antogonist *E. fibuligera* on wounded bananas reduced germ tube growth of *L. theobromae* by 41.9%. Screening of 11 yeasts against crown rot, on bananas by applying both *L. theobromae* and yeast and then, incubating at 25°C for 7 d showed that *E. fibuligera* was the most effective, crown rot severity was 2.3%. Application of yeast suspensions prior 24 h to pathogen inoculation provided the lowest disease severity as compared with simultaneous application of yeasts and pathogen inoculation, and application of yeast after 24 h to pathogen inoculation. When bananas were treated with this yeast in combination with 150 ppm thiabendazole (TBZ) or dipped in hot water (50°C for 20 min) and then followed by this yeast, the disease was completely inhibited. The antagonist *E. fibuligera* could survive at all concentration of TBZ (50-450 ppm). Fruit treated with 150 ppm TBZ in combination with *E. fibuligera* or dipped in hot water and followed by yeast and then, kept under modified atmosphere (MA) for 15 days at 15ºC, yeast in 150 ppm TBZ showed the lowest disease severity at 8%, however no significant difference with yeast alone or dipped in hot water and followed by yeast.