Isolation and selection of bacteria and yeasts antagonistic to preharvest infection of avocado by *Colletotrichum gloeosporioides*

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Abstract
Bacteria and yeasts were isolated from leaves, flowers and fruit of avocado trees that had not been sprayed with pesticides for several years. Of the 1050 microorganisms isolated, 37% inhibited mycelial growth of Colletotrichum gloeosporioides on potato dextrose agar. Many of these organisms also significantly reduced spore germination of the fungus on cellophane overlaying weak sugars agar and a greater proportion of yeasts than bacteria were more effective. Some bacteria and yeasts also reduced spore germination of the pathogen on avocado leaf disks. The predominant group of suppressive bacteria was Bacillus spp., and the antagonistic yeasts included Aureobasidium spp. and a variety of pink and white colony types. Antibiotic resistant isolates of Bacillus, carbendazim resistant isolates of two yeasts and an Aureobasidium sp. were sprayed on avocado leaves and survived for at least 2 months on the phylloplane. On the basis of performance in these tests, isolates with biocontrol and colonization potential were selected and tested for their capacity to provide disease control on fruit. In repeated tests, several bacteria and yeasts consistently reduced lesion development and lesion size on detached avocado fruit when applied prior to inoculating fruit with the pathogen.

Keywords: biological control; *Colletotrichum gloeosporioides*; avocado; bacteria; yeasts; anthracnose

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