

The Effect of Thyme Oil Low-Density Polyethylene Impregnated Pellets in Polylactic Acid Sachets on Storage Quality of Ready-to-Eat Avocado

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ABSTRACT:

After earlier promising results for the control of anthracnose in avocado fruit by thyme vapours, our studies were extended to commercial use in tray packs. The effect of thyme oil low-density polyethylene impregnated pellets (TO-LDPE-P) in polylactic acid (PLA) sachets was investigated for the control of anthracnose and retention of dietary phytochemicals, fatty acid composition, D-mannoheptulose sugar and fruit quality in ready-to-eat avocado fruit. The 10% TO-LDPE-P significantly reduced the incidence severity of anthracnose and enabled the retention of dietary phytochemicals (p-coumaric, ferulic and caffeic acid, catechin and epicatechin), fatty acids, mannoheptulose, fruit firmness and taste compared to the currently used prochloraz[®] fungicide treatment. The results of this study strongly suggest the incorporation of 10% TO-LDPE-P in PLA sachets in commercial avocado tray packs as a natural option to improve fruit health, dietary phytochemicals, fatty acid composition and consumer satisfaction.