

Ginger and turmeric extracts: their effects on *Thielaviopsis paradoxa* infection of salak pondoh during storage

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Acta Horticulturae 1011: 319-324. 2013.

Abstract

The objectives of this study were to: (1) investigate the effect of red ginger and turmeric rhizome extracts on growth of *Thielaviopsis paradoxa*; (2) find the most effective coating formula to maintain quality of salak pondoh during storage. In the first experiment, the concentrations of red ginger and turmeric rhizome extracts used were 20, 30 and 40%. The fungus was grown on potato dextrose agar (PDA) containing each concentration of the extracts. PDA not containing red ginger and turmeric extract served as control. In the second experiment, three treatments consisting of waxing 10%, red ginger rhizome extract, and the combination of wax 10% and red ginger extract were used to examine their effect on fungal infection of salak pondoh during storage. The fruit quality examined every 3 days of storage consisted of moisture content, weight loss, firmness, soluble solid content (SSC), respiration rate and organoleptic test. Results indicated that red ginger and turmeric rhizome extracts inhibited growth of *T. paradoxa* starting at 30% concentration. Percentage growth inhibition of the fungus caused by red ginger and turmeric rhizome extracts at this concentration were 100 and 34%, respectively. Red ginger extract at 30% concentration was more effective than the turmeric rhizome extract. Use of 10% wax in combination with 30% red ginger extract for coating salak pondoh fruit could maintain fruit quality at room temperature ($28.0 \pm 1.5^\circ\text{C}$) and relative humidity 65-75% for 12 days, while controls could only maintain postharvest quality for up to 9 days.