

Title Control of postharvest *Rhizopus* rot of peach by microwave treatment and yeast antagonist

Author Hongyin Zhang, Chengxin Fu, Xiaodong Zheng, Yufang Xi, Wei Jiang and Yifei Wang

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Abstract

The potential of using microwave power alone, or in combination with antagonistic yeast, for control of *Rhizopus stolonifer* on peach, and its effects on the postharvest quality of peach were investigated. In in vitro tests, the growth of *R. stolonifer* was completely inhibited by a 2,450 MHz microwave heating for 2 min or more. The population density of *R. stolonifer* in surface wounds of microwave treatment fruits was significantly lower than that in the control. In vivo studies of inoculation of peach fruit with *R. stolonifer* followed by microwave treatment, *Cryptococcus laurentii* or both of them, microwave power and *C. laurentii*, as stand-alone treatments, were capable of reducing the percentage of decayed fruit from 95% in control, untreated fruit to 42.1% and 75%, respectively. However, in fruit treated with a combination of microwave power and *C. laurentii*, the percentage of decayed fruits was only 23.7%. The experiments on reducing natural decay development of fruit gave similar results. The microwave treatment, *C. laurentii*, or both of them did not impair the quality parameters of the fruit. Thus, the combination of microwave and *C. laurentii* could be an alternative to chemicals for control of postharvest *Rhizopus* rot on peach fruits.