

Thesis Title	Effect of heat treatment and ethylene on fiber formation of asparagus ( <i>Asparagus officinalis</i> cv. Brocked improve)
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### Abstract

Effect of heat treatment and ethylene concentrations on fiber formation of *Asparagus officinalis* cv. Brocked improve were studied. One group of freshly harvested asparagus was heated by immersing them in water at 25, 40 and 50°C for 90 seconds, while another group was treated with ethylene at various concentrations (0, 100 and 500 ppm) for 3 hours. All treated and untreated asparagus were then stored at 9±1°C, 95% RH with the base of the asparagus soaked in 2 cm of water. Asparagus were divided into 3 parts (tip, mid and basal) for determining fiber formation. Asparagus immersed in 40 and 50°C water had lower fiber content, peroxidase activity and lignin content than the control group (25°C). One day after storage, tips of heat-treated asparagus had an ethylene production higher than the control. Heat-treated and control asparagus did not show different in shear force and respiration rate. Ethylene-treated asparagus had the fiber content, shear force, peroxidase activity and lignin content higher than the control (0 ppm ethylene). Asparagus treated with 100 and 500 ppm ethylene were not significantly difference in shear force, fiber and lignin contents, and peroxidase activity. The tip of the ethylene-treated asparagus had the highest peroxidase activity, while mid and basal of ethylene-treated asparagus were not significantly different from the control. There were no significant differences in respiration rate and ethylene production between the ethylene-treated and the control asparagus.

Keywords : Asparagus/ Fiber/ Heat treatment/ Ethylene/ lignification