

Research Title: The Study on Arginine and Calcium Lactate Application for Inhibiting Browning Symptom of Fresh-Cut Romaine Lettuce

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Research Grants Fiscal Year 2018,  
Silpakorn University Research, Innovation and Creativity  
Administration Office

Year of completion 2019

Type of research Applied research

Subjects Agriculture and Biology

### Abstract

In this research, study on the effects of arginine and calcium lactate for browning inhibition on fresh-cut romaine lettuce. The research divided into 2 experiments. The experiment 1 was studying on suitable concentrations of arginine and calcium lactate for browning inhibition. It indicated that 20mM arginine and 1.5% calcium lactate treatments had the best of browning inhibited efficiency in romaine lettuce. The experiment 2 was studying the comparative effect of arginine and calcium lactate on browning inhibition and biochemical change. It can be provided into 4 treatments; the romaine lettuce was immersed in 0 (distilled water), 20mM Arginine, 1.5% Calcium lactate and 20mM Arginine + 1.5% Calcium lactate for 10 minutes. These results showed that the use of 20mM arginine only can inhibit browning compared to other treatments. The browning inhibition in romaine lettuce seem to be associated with the decrease in phenolic compounds at 2 and 5 day of storage, and the decrease in phenylalanine ammonialyase activity at 2 day of storage. In addition, the romaine lettuce in 20mM arginine treatment has the lowest a dehydroascorbic acid, malondialdehyde and hydrogen peroxide. These results suggest that arginine may effective inhibit tolerance to stress during storage.

Key words: Arginine, Calcium lactate, Enzymatic Browning, Polyphenol Oxidase and Fresh-cut Romaine Lettuce