

P89

Inactivation of *Escherichia coli* and *Salmonella Typhymurium* on Lettuce by Organic Acid

Mi-Ran Park, Seung-Hee Woo, Min-Jung Hwang, Hye-Jung Choi¹, Seon-A Kim², Dong-Wan Kim³, Ja-Young Moon⁴ and Woo-Hong Joo*

Department of Biology, Changwon National University, Changwon 641-773, Korea, ¹Interdisciplinary Program in Biotechnology, Changwon National University, ²Department of Biology & Microbiology, Changwon National University, ³Department of Microbiology, Changwon National University, ⁴Department of Biochemistry and Health Sciences, Changwon National University

Escherichia coli and *Salmonella typhymurium* were inoculated to the disinfected white lettuce, which was followed by disinfection using 0.5%, 1% and 2% (v/v) acetic acid, phosphoric acid, citric acid, lactic acid and L-glutamic acid, respectively. In lettuce, 0.85% sterilization efficacy against *E. coli* and *S. typhymurium* were obtained by the use of 0.5%, 1% and 2% (v/v) acetic acid, citric acid, phosphoric acid, lactic acid and L-glutamic acid at a 1 min, 5 min and 10 min treatment, respectively. In Chinese cabbage, a 5 min and 10 min treatment of 2% (v/v) phosphoric acid and lactic acid against *E. coli* showed more than 70% efficacy. A 10 min treatment of 1% (v/v) phosphoric acid and lactic acid, 2% (v/v) phosphoric acid and lactic acid against *S. typhymurium* showed more than 90% efficacy. Therefore, the use of 2% (v/v) phosphoric acid and lactic acid for 10 min could be the effective optimization conditions for the sanitizer against food poisoning pathogens in vegetables.

Key words: Chinese cabbage, *Escherichia coli*, *Salmonella typhymurium*, sanitization efficacy

P90

Effects of Methanol Extract from *Terminalia chebula* on Kidney and Lung Tissues of Rat by the Paraquat Toxicity

Jong-Ok Park and Kyung-Soon Kim¹

Dept. of Chemistry Kyungsung University, 608-736, Busan, Korea
¹Dept. of Chemistry Myung Ji University, 449-128, Yongin, Korea

Paraquat(1,1-dimethyl 4,4'-dipyridium dichloride; PQ) is a kind of herbicide. *Terminalia chebula*(TC) has been used as a medicine in China and Korea for treating illnesses so-called diarrhea, collapsed anus, spasmodic, diphtheria, asthma etc.. We conducted this study to examine new physiological activities of TC methanol extract(TCM) on the toxicity of PQ. It was observed biochemical effects on the toxicity of PQ in kidney and lung tissues after treatment of TCM orally administered 100, 200, 300mg/kg daily for two weeks. In the experiment related to the toxicity of PQ, we can get following results; kidney and lung lipid peroxide content, aminopyrine N-demethylase, aldehyde oxidase, xanthine oxidase activities were significantly increased in control group as compared with normal group, after TCM treatment the values were decreased as compared with control group. Free radical scavenging enzymes, superoxide dismutase, catalase, glutathione peroxidase activities were also increased in control group as compared with normal group, but were decreased in TCM group as compared with control group. Collagen content in lung tissue was increased in control group as compared with normal, but was decreased in TCM group as compared with control group. Glucose-6-phosphatase activity was decreased in control group as compared with normal, but was increased in TCM group as compared with control. From these results, we concluded that TCM can play a role as an effective agent to decrease toxicity of PQ.