Antimicrobial Activity of Garlic (*Allium sativum*) against *Escherichia coli*, *Salmonella typhi* and *Staphylococcus aureus*

C. Sujeevine* and R.M.U.S.K. Ratnayaka

Department of Food Science and Technology, Faculty of Applied Sciences,
Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka
*sujeevine@gmail.com

Garlic (*Allium sativum*) is widely used functional food ingredient in Sri Lanka. Although garlic has been used for its medicinal properties for thousands of years, an investigation into its mode of action is relatively recent. This study is investigated the antimicrobial activity of garlic extract on *Escherichia coli*, *Salmonella typhi* and *Staphylococcus aureus* at ambient (28±1 °C) and refrigerated (4 °C) extraction conditions and using different extraction solvents (aqueous, chloroform and ethanol) obtained from the raw, cooked and dehydrated garlic. Agar gel diffusion method was used to test the antimicrobial activity of the culture extracts. The zone of inhibition around the wells indicated that the selected organisms were sensitive to aqueous, chloroform and ethanol extracts of garlic. Cooked garlic extracted by choloroform revealed higher inhibition zone against *E. coli*, *S. typhi* and *S. aureus*. Chloroform extracts of raw, cooked and dehydrated garlic showed effectiveness against *Escherichia coli*. Aqueous extracts of raw and dehydrated garlic showed effectiveness against *S. typhi* and aqueous extracts of dehydrated garlic showed effectiveness against *S. aureus.* This study showed that processed and raw garlic exhibit antimicrobial activity with the polar and nonpolar solvents.

Keywords: Antimicrobial, aqueous, chloroform, ethanol, garlic, inhibition zone