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<u>TOP</u> > <u>Available Issues</u> > <u>Table of Contents</u> > Abstract

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## Inhibition of *Staphylococcus aureus* by Garlic and NaCl in Broth Systems

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Minimum inhibitory concentration (MIC) isobolograms of fresh garlic extract (FGE) and NaCl against *Staphylococcus aureus* test strains ATCC 25923 and ATCC 6538 in Brain Heart Infusion broth (BHIB) and Pork Sausage broth (PSB) were constructed. Additive and synergistic relationships were observed in BHIB and PSB against the test strains, respectively. Action of indirect antimicrobic ingredients in PSB was used to explain the synergistic relationship of FGE and NaCl established. The Fractional Inhibitory Concentration (FIC) indices of the agents validated the antimicrobic relationships established in the MIC isobolograms. An Iodonitrotetrazolium-Direct Microscopic Count (INT-DMC) method was used to measure staphylococcal cell count reductions in both broth systems containing concentrations of FGE and NaCl typically used in sausage production. Garlic incorporation of  $\geq 1.20$  (v/v) together with minimum levels of NaCl (<2% w/v) can be recommended in cured pork sausage formulations for control of staphylococcal growth.

Keywords: Antimicrobic interaction, Garlic, Isobolograms, NaCl, Sausage, Staphylococci

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