

## Abstract

*Staphylococcus aureus* is an important pathogen for a wide range of human infections and food poisoning is caused. The aim of this study was to investigate the effects of nisin, sodium acetate and temperature on the growth of *Staphylococcus aureus* in grass carp fillets using Taguchi experimental design with an array L<sub>4</sub> (2<sup>3</sup>). For this purpose after inoculation fillet with *Staphylococcus aureus* to the 10<sup>3</sup> CFU/g, nisin concentration 750 IU/g and 1000 IU/g and sodium acetate concentrations of 1 and 2 % to fillet Add and then fillets at 4 and 8 °C were maintained. The control treatments were used to determine the effectiveness of various factors. The results showed that the lowest and highest TVB-N, PV and TBA observed in plants treated with nisin 750 IU/g and 2% sodium acetate and stored at 4 °C the nisin treatment 750 IU/g, 1% sodium acetate maintenance 8 °C in temperature was observed. Results count of *Staphylococcus aureus* bacteria and TVC showed the decline in the number of *Staphylococcus aureus* and nisin in treatment 750 IU/g and 2% sodium acetate and stored at 4 °C earlier than other treatments. In general it can be concluded that the use of nisin and sodium acetate can reduce the growth of *Staphylococcus aureus*. Also nisin concentration 750 IU/g, sodium acetate with a concentration of 2% and storage at 4 °C is the most effective combination to increase the shelf life of fillets.

Key words: Nisin, Sodium acetate, Microbial spoilage, *Staphylococcus aureus*, *Ctenopharyngodon idella*



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**Title:**

**Effect of nisin and sodium acetate on the growth of *Staphylococcus aureus*  
inoculated in *Ctenopharyngodon idella* filets during refrigerated storage**

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