عنوان مقاله:

EFFECT OF CHITOSAN AND CINAMON ESSENTIAL OIL ON FOOD-BORNE PATHOGEN AND ANTIOXIDANT (ACTIVITY IN FROZEN RAINBOW TROUT (ONCORHYNCHUS MYKISS

محل انتشار:

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خلاصه مقاله:

Background and Aim:food industries use synthetic preservatives to improve the quality and enhance the shelf life of food products during storage. However, the most common industrial strategies for preservation may not always bring the desired protection for curbing corruption. Furthermore, consumer demands for safer foods encourage researchers to find natural and effective preservatives.The purpose of this study is, investigation the antioxidant and antibacterial activity of chitosan in combination with cinnamon essential oil in frozen condition.Methods:rainbow trouts were combined with 2% chitosan in combination with different concentration of cinnamon essential oils (0.125, 0.25 and 0.5 ml). The samples were kept at -18 ºC. Oxidative stability of samples was assayed by measuring lipid peroxidation level using thiobarbituric acid reactive substances (TBARS) method. The bacterial test was assayed by counting colony forming unit. the evaluation of statistical differences between groups were analyzed using the student s T-test by SPSS software According to the statistical facts, the difference more than 95% (P ≤0.05) was considered significant.Results:peroxidation level compared to control group and chitosan combination with 0.5 ml cinnamon showed synergistic effect. The antimicrobial activity of chitosan in combination with 0.5 ml cinnamon essential oil was higher than other concentrations and control groups.Conclusion:chitosan in combination with cinnamon essential oil could considerably increase the oxidative stability and decrease total count of bacteria in frozen fish. These results may suggest that these edible coatings can be used instead of artificial preservatives and non-edible coatings.

کلمات کلیدی:

chitosan, cinnamon essential oil, lipid peroxidation, antibacterial, antioxidant