

**THE EFFECT OF DIETARY SODIUM BICARBONATE
SUPPLEMENTATION ON CHEMICAL QUALITY OF RAINBOW
TROUT (*ONCORHYNCHUS MYKISS*) DURING FROZEN STORAGE**

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This experiment intended to assess the effect of dietary sodium bicarbonate supplementation on chemical and sensory quality changes of rainbow trout (*Oncorhynchus mykiss*) during frozen storage. Rainbow trout, with a mean body weight of 250 ± 10 g, were fed with three experimental diets incorporated with 1, 2 and 3 M sodium bicarbonate (SBC) for three weeks. The fish fed without SBC supplementation was used as control group. At the end of the feeding treatment, all fishes were killed by immersing in ice and delivered to the laboratory. Upon arrival, fishes were immediately washed and stored whole in a freezer for up to 7 months. Total volatile basic nitrogen (TVB-N, mg N/100 g) and thiobarbituric acid (TBA, mg malonaldehyde/kg) were considered as chemical quality parameters. Dietary SBC supplementations caused a decrease in TVB-N and TBA value of rainbow trout. The highest TVB-N value were found in control group, while the lowest TVB-N value were found in fish fed 3 M SBC during the storage period ($p < 0.05$). All of the dietary groups, there was an increase in the level of TVB-N during storage, especially after 3 month. The TBA value is widely used as an indicator of the degree of lipid oxidation. Result of TBA analyses showed that all groups, there were significant increased within storage period but did not exceed the legal limits for consumption up to 6th month. In this study, lipid oxidation decreased was faster than Total volatile basic nitrogen formation throughout storage. Chemical quality of control group was found undesirable by the 4 month, while fed with SBC supplemented groups were acceptability quality up to 7th month. These findings show that chemical quality increased with increased SBC supplemented rate.

Keywords: Sodium bicarbonate, dietary supplementation, flesh quality, frozen storage, trout

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