

Title Evaluation of the effectiveness of a new active packaging film containing natural antioxidants (from barley husks) that retard lipid damage in frozen Atlantic salmon (*Salmo salar* L.)

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Abstract

Salmon is a perishable fish that contains high level of PUFAs (polyunsaturated fatty acids), which have many positive effects on human health, but which are extremely susceptible to oxidation. The development of new food packaging films by incorporation of antioxidants is expected to improve the shelf life of food and thus increase consumer safety and health. Determination of peroxide value (PV), conjugated dienes (CD), conjugated triene hydroperoxides (TH), free fatty acids (FFA), totox value (TV), thiobarbituric acid index (TBARS) and *p*-anisidine value (AV) by established methods proved suitable for studying lipid hydrolysis and primary and secondary lipid oxidation in samples of salmon during frozen storage. The results obtained confirm the efficacy of natural antioxidants derived from barley husks (NABH) in slowing down lipid hydrolysis and increasing the oxidative stability of salmon flesh. This study demonstrates the potential usefulness of natural antioxidants extracted from barley husks in the development of active packaging films for food preservation.