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FIFTH INTERNATIONAL CONFERENCE
SUSTAINABLE POSTHARVEST AND
FOOD TECHNOLOGIES
INOPTEP 2017
and
XXIX NATIONAL CONFERENCE
PROCESSING AND ENERGY
IN AGRICULTURE
PTEP 2017
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PROCEEDINGS
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PETA MEĐUNARODNA KONFERENCIJA
ODRŽIVE POSLEUBIRAJUĆE I
PREHRAMBENE TEHNOLOGIJE
INOPTEP 2017
i
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U POLJOPRIVREDI
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A PRELIMINARY STUDY ON THE EFFECT OF SALTING METHOD ON THE COLOR AND AREA of SALTED ATLANTIC BONITO (*Sarda sarda*)

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The percent of fish consumed directly by humans within the global fish production has increased from 67 to 85 between 1960 and 2014. Although seafood is crucial for human health, it is also highly perishable and therefore needs to be preserved to extent their limited shelf-life. Salting, one of the oldest preservation method used for seafood since ancient times, can be applied in several ways including brining, dry brining and injection. The preservation effect of salt occurs by removing water from intracellular system of muscle through osmosis. As a result of osmosis, water activity, which determines whether microorganisms can grow in the flesh is reduced. Salting also can enhance the organoleptic properties of the fish by giving it a more desirable color, taste and aroma. Color is a key parameters on consumer preference. Even though color in general can be measured by using traditional color measuring techniques, these techniques become insufficient as for the fish due to its non-homogenized color. For these purposes, a novel technique called "Computer Based Image Analysis (CBIA)" has become more commonly used over the last years. This method is non-destructive, objective, rapid, accurate and repeatable as well as the possibility of making quantitative measurements. The present study was aimed at determining the color values (Lightness (L^*), redness (a^*), yellowness (b^*), hue angle (H_{ab}), Croma (C^*), Whiteness (W) values and Color Change Index (CCI), Texture Change Index (TCI)) and area changes of brined (B) and then dry brined (DB) bonito (fresh or freeze/thawed) by using CBIA throughout the storage at 4°C. The results showed that the area and TCI values of fresh bonito samples had no significant differences ($p>0.05$) following B and DB treatment, while the other parameters were significantly different ($p<0.05$). The effect of using fresh or freeze/thawed raw material did not make any difference on area and a^*, b^*, H_{ab}, C^*, CCI and TCI values but was found important for L* and W values. The difference observed in L^* and W values later disappeared following the brining (10 % w/v) treatment. After brining (1:3 w/w), only C^* values showed significant difference based on the type of raw materials (whether it is fresh or freeze/thawed). Overall, there has been no difference perceived for color parameters and area between using fresh or freeze/thawed material. After B and DB applications, the main color parameters were affected as opposed to no significant effect was seen on area.

Keywords: Bonito, Computer Based Image Analysis (CBIA), Salting