INOPTEP 2017 PTEP 2017

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
XXIX NACIONALNA KONFERENCIJA
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U POLJOPRIVREDI
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MONITORING THE COLOR CHANGE OF FOUR DIFFERENT FRESH SEAFOOD STORED IN CHILLED CONDITIONS: A PRELIMINARY STUDY

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Fish freshness is a critical parameter to be measured in seafood industry. Common methods used to evaluate the fish freshness usually rely on experienced individuals testing sensory properties of fish including color, taste, flavor and odor. Color is a key parameter on consumer preference. Traditional color measuring techniques used in foods are not as applicable to fish due to its non-homogenized color. Therefore, more objective and repeatable methods are being seek by the industry. Accordingly, a novel technique called "Computer Based Image Analysis (CBIA)" has become popular over the last years. The method is non-destructive, objective, rapid, accurate, repeatable and able to make quantitative measurements. This study was aimed at measuring the color change trends of two fresh sea water (seabass "*Dicentrarchus labrax*" and seabream "*Sparus aurata*") and two fresh-water species (rainbow trout "*Oncorhynchus mykiss*" and "*Salmo trutta macrostigma")* during chilled storage for the first time. Our experiment was designed to simulate the ice-stored fish batch, which included some fish not covered with ice (air-touched) and some in melted ice (cold water). Color change occurred was monitored throughout the storage. Each fish was individually placed in a separate plastic tray, with half of the fish being immersed in melted-ice. The letters "W" and "D" represented the water-side and dry-side of the fish, respectively. According to the results, there was no significant difference ($p>0.05$) between W and D on the first day of storage. However, significant changes ($p<0.05$) in the color parameters (Lightness (L^*), redness (a^*), yellowness (b^*), hue angle (H_{ab}), Croma (C^*), Whiteness (W^*) values and Color Change Index (CCI)) and Texture Change Index (TCI)) were developed during the storage. This has revealed that whether the fish part is in contact with water or air has an influence on fish color parameters. Additionally, fish species affected the color parameters measured. Based on these results, our research group will continue on determining the shelf life and sensory profile as well as investigating the relationship between them using CBIA.

Keywords: Computer Based Image Analysis (CBIA), seabass, seabream, trout