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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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PROCESNA TEHNIKA I ENERGETIKA
U POLJOPRIVREDI
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THE EFFECT OF USING TWO DIFFERENT COMMERCIAL LIQUID SMOKE CONDENSATES ON COLOR PROPERTIES OF SALTED BONITO: A PRELIMINARY STUDY

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With its high quality protein, minerals, vitamins, essential fatty acids and trace elements, seafood is considered as a healthy choice. Fat in fish can be very high in omega-3 fatty acids, which helps prevent coronary heart diseases. Atlantic bonito (*Sarda sarda*) (in *Scombridae* family) contains about 15-17 % total lipid. Various techniques have been used to extend the shelf life of this perishable food throughout the history. Among these, salting is traditionally applied as dry or brine whereas traditional smoking are practiced as hot and cold. Recently, liquid smoke condensates formed by condensation of wood chips became an alternative to traditional smoking methods. In this preliminary study, two different commercial liquid smoke condensates were used to smoke the salted Atlantic bonito samples. The raw bonito samples were initially brined for four days and then liquid smoked with one of the two liquid smoke condensates (grouped as group C and M). Then, the samples were dry brined for ten days. The digital photos of the samples were taken after each treatment and analyzed by Computer Based Image Analysis system to determine the changes in area and some color parameters (*L*, a*, b*,* hue, chroma and whiteness values). Using two different liquid smoke condensate was found to have no significant effect in the area of the samples in both groups ($p>0.05$). Except *b** value, brining treatment of 4 days caused significant changes in *L*, a*, b*,* hue, chroma and whiteness values compared to those of raw samples ($p<0.05$). For these parameters, same trend was observed in both group C and M samples (*L** and whiteness values increased while *a*,* hue and chroma values decreased due to brining). Liquid smoking applied after 4 days of brining caused a significant decrease in *a*,* hue and whiteness and increase in *b** and chroma ($p<0.05$), while it caused no change in *L** value ($p>0.05$). No difference was observed between two groups as a result of using different liquid smoke treatment. Drybrining applied after liquid smoke treatment caused no change in *b** value ($p>0.05$) while increased *L** and whiteness and decreased hue values ($p<0.05$) for both group C and M. Differences as a result of dry brining between two groups were seen only for *a** and chroma values. Although similar trends were seen for both groups throughout the process, using different type of the liquid smoke condensates caused differences in the intensity of the color parameters of the final products except the *L** value. Samples in group M had lower *a*, b*,* hue and chroma but higher whiteness value compared to those of group C, indicating that liquid smoke condensate used for the group C gave exceptionally darker color to the samples. The information obtained in this study can be used by the industry to produce the products with desired colored as expected by the consumers. In the near future, sensory tests and shelf life analyzes will be included in this study.

Keywords: Bonito, Computer Based Image Analysis (CBIA), Liquid Smoke Condensates