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## TITLE: QUALITY ASSESSMENT OF BROILER MEAT USING COMPUTER VISION TECHNOLOGY

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### ABSTRACT (up to 300 words)

**Introduction:** Broiler meat is a nutritionally valuable foodstuff for its low content of fat in which there are more desirable unsaturated fatty acids than other types of meat. It is well accepted to all communities of people. Meat quality usually depends on physical, chemical and biological properties. In food production, much information applying to the material or final product are obtained by visual evaluation. Human visual inspection and chemical or biological determination experiment for quality evaluation of broiler meat is time-consuming, sample destructive and tedious whereas computer vision technology is a rapid, non-destructive, economic and objective inspection technique, which has expanded into many diverse industries. Computer vision technology may provide an alternative method for assessing the quality attributes by establishing correlation between image value and chemical composition of broiler meat.

**Methods:** Images were captured from pectoralis major muscle in broiler at 24 hours post-mortem. The software Matlab (R2015a) has been used for image analysis. The physicochemical, proximate, biochemical and microbiological tests were followed to determine different reference values of the sample. Reference color values were measured with the help of a colorimeter and pH meter. All determination was done in triplicate and the mean value was reported. Data analysis was carried out using the programme Statgraphics

Centurion XV.I. Calibration and validation model were fitted using software The Unscrambler X version 9.7.

**Results:**

A higher correlation was found in pH ( $r=0.64$ ) with  $L^*$  value obtained from imaging analysis and cooking loss ( $r=0.60$ ) with 'a\*' value obtained from imaging analysis and the highest calibration and prediction accuracy was found in pH ( $R^2c=0.64$ ,  $R^2p=0.56$ ) in broiler breast meat.

**Conclusion:**

Results of this work indicate the probability of using computer vision technology in predicting quality of meats in the meat processing plant.

### BIOGRAPHY (up to 200 words)

Hashem has completed his PhD from Seoul National University, South Korea. He is the AvH fellow and now as a Professor at Bangladesh Agricultural University, Mymensingh, Bangladesh. He is also the president of Bangladesh Meat Science Association. He has over 130 publications that have been cited over 1100 times, and his publication h-index is 20. He has been serving as an editorial board member of several reputed journals.



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