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**Nutrient Composition of Locally Available Chicken and Duck Egg Powder**

**Waichingnu Chowdhury**

Roll No.: 0118/11

Registration No.: 00553

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**A thesis submitted in the partial fulfillment of the requirements for the degree of Master of Science in Applied Human Nutrition and Dietetics**

**Department of Applied Food Science and Nutrition**

**Faculty of Food Science and Technology**

**Chattogram Veterinary and Animal Sciences University**

**Chattogram-4225, Bangladesh**

**DECEMBER 2019**

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**This is to certify that we have examined the above Master’s thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made.**

**…………………………………………………………….**

 **Prof. Dr. S.K.M. Azizul Islam**

 **Supervisor**

 **Dept. of Physiology, Biochemistry and Pharmacology**

 **Chattogram Veterinary and Animal Sciences University**

…………………………………………….

 **Md. Altaf Hossain**

 **Chairman of the Examination Committee**

 **DEPARTMENT of Applied Food Science and Nutrition**

 **Faculty of Food Science & Technology**

 **Department of Applied Food Science and Nutrition**

 **Faculty of Food Science and Technology**

 **Chattogram Veterinary and Animal Sciences University**

 **Chattogram-4225, Bangladesh**

 **DECEMBER 2019**

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| DEDICATED TO MY RESPECTED AND BELOVED FAMILY AND TEACHERS |

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**Abbreviations**

% Percentage

AC Ash content

ANOVA Analysis of variance

 AOAC Association of Official Analytical Chemists

BBS Bangladesh Bureau of Statistics

℃ Degree Celsius

CF Crude fiber

CHO Carbohydrate

CP Crude protein

DHA Docosahexaenoic Acid

DM Dry matter

EPA [Eicosapentaenoic Acid](https://en.wikipedia.org/wiki/Eicosapentaenoic_acid)

et al Et alii/ et aliae/ et alia

etc Et cetera

FAO Food and Agricultural Organization

HCl Hydrochloric Acid

HNO3 Nitric Acid

IEP Isoelectric Point

kDa Kilodaltons

MC Moisture content

mg Mili Gram

NEM Natural Eggshell Membrane

NGOs Non-Governmental Organization

SEM Standard Error of Mean

SPSS Statistical Package for Social Science

 **Abstract**

The eggs have been recommended as one of the best source of a complete food. Dehydration is a good process for food preservation. The aim of the present study were to measure the overall weight and nutritional composition of different poultry eggs powder (native chicken (Deshi) egg, commercial layer chicken (Hybrid) egg and duck egg). Eggs were collected from the local kitchen markets dried and subjected to nutritional assessment. Descriptive statistics including percentage, mean and standard deviation were performed. One way analysis of variance (ANOVA) was performed to find out the level of significance at P <0.05. Duck egg had both higher weight and yolk content compared to other two different types of poultry egg. On the other hand, native chicken egg had lower weight but contained almost same proportion of egg white (albumen) and egg yolk. However, commercial layer chicken egg contained higher albumen portion that’s why we got higher dried albumen weight. In case of, nutritional component of albumen, native chicken eggs had the highest protein (84.58%), duck (81.84%) and commercial layer chicken (81.43%), respectively. But, in yolk, duck egg had higher protein (38.5%) as compared to layer chicken egg (36.52%) and native chicken egg (36.16%), consecutively. Moreover, the fats content in albumen part ranges from 0 to 0.15% whereas yolk portion had (36.16% – 38.50%) of the different poultry. The albumen of different poultry eggs were contained higher moisture than the yolk.Yet, the carbohydrates percentage of yolk portion found higher (1.28% to 4.44%)compared to white (0.61% to 4.43%). Native chicken egg white had higher Calcium (Ca) (2.87mg/gm), Magnesium (Mg) (1.30mg/gm), Phosphorus (P) (6.26mg/gm) and Potassium (K) (2.48mg/gm) compared to other two types of poultry eggs. In yolk, native chicken egg also had higher Mg (0.62mg/mg), P (17.78mg/mg) and K (4.28mg/mg) accordingly. In summary, we found duck egg had higher weight than others. In dried condition, native egg albumen contained the highest nutrient component while in dried yolk, these components were found the highest in commercial layer chicken egg.

**Keywords:** Egg powder, egg albumen, egg yolk, native egg (Deshi).