**EFFECTS OF PROCESSING TEMPERATURE AND HOLDING TIME ON NUTRITIONAL AND FUNCTIONAL PROPERTIES OF CHICKEN EGGS POWDER**

**By**

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**ABSTRACT**

Effect of processing temperature (40, 50 and 60oC) and holding time (4, 5 and 6hours) on nutritional and functional properties of powdered chicken eggs were determined in a completely randomized design with 3x3 factorial arrangements in 4 replicates. The results showed that temperature and holding time of 40oC:4hours and 40oC:6hours had the highest moisture (8.16%) and crude protein (19.83%) contents while temperature and holding time of 60oC:6hours and 40oC:6hours recorded the highest ash (1.33%) and fat (10.92%) contents, respectively. The temperature and holding time of 40oC:4hours, 50oC:5hours, 60oC:5hours and 40oC:5hours had the highest foaming capacity (20.00%), foam stability (95.65%), water absorption capacity (51.37%) and oil absorption capacity (60.81%) respectively, the highest emulsifying capacity (41.00%) and emulsion stability (22.00%) were recorded at temperature and holding time of 40oC:4hours while highest solubility index (91.00%) was obtained on temperature and holding time of 50oC:4hours. The results of Pearson correlation showed significant negative relationship between foaming capacity and foam stability (r=-0.510), foam stability and emulsifying capacity (r=-0.396), foam stability and solubility index (r=-0.341) as well as between oil absorption capacity and solubility index (r=-0.378). However, significant positive relationship was observed between emulsifying capacity and emulsion stability (r=0.629). The linear regression coefficient indicated that temperature had strong negative effect on moisture (R2=-1.326), crude protein (R2=-2.621), fat (R2=-0.963) emulsifying capacity (R2=-9.417) and emulsion stability (R2=-3.250) while holding time had significant negative effect on emulsifying capacity (R2=-2.167) .The results also showed that the nutrient composition and functional properties of powdered chicken eggs were not adversely affected by processing temperature and holding time of the study. Hence, it could be incorporated as nutritive

**INSTITUTION**: Bayero University, Kano

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**DEGREE AWARDED:** Master of Science (M.Sc.) in Animal Science

**YEAR OF GRADUATION:** 2015