

**USE OF LYSOZYME FROM CHICKEN EGG  
WHITE AS ANTIMICROBIAL AND  
ANTIOXIDANT SUPPLEMENT IN COMMINUTED  
MEAT PRODUCTS**

A dissertation submitted to the  
Faculty of Animal Science and Export Agriculture

Uva Wellassa University

in partial fulfillment of the requirement of

the degree of

Bachelor of Animal Science

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**2014**

## Abstract

Sausage contains several grams of complete protein per serving, and each provides all essential amino acids need in diet and it is having essential minerals important for hemoglobin production. Nitrite is a well-known antioxidant and antimicrobial which retards the lipid oxidation and microbial activities in cured meat and it is highly used in sausage production. Lysozyme is a natural egg white protein that is expressed antioxidant and anti- microbial ability. To decrease the use of nitrite in comminuted meat industry, the present study was conducted to evaluate the antimicrobial effects and antioxidant effect of lysozyme protein compared to curing salt 125 ppm. Four treatments were conducted including control according to various ratios from curing salt and protein. Antimicrobial studies was conducted for *Escharichia coli* count, and *Salmonella* count were carried out on 0, 5 and 10<sup>th</sup> day of storage. Treatment 3 was found most effective against *Escharichia coli* and *Salmonella* ( $p < 0.05$ ). Antioxidant activity was determined by TBARS value as concentration of malanaldehyde (mg/Kg) over storage time period 0-21 days. Minimum oxidation rate was shown by treatment which has 50% lysozyme and 50% curing salts. Redness ( $a^*$ ) and lightness ( $L^*$ ) color parameters were not significantly different from control ( $p > 0.05$ ). Both control and Lysozyme incorporated sample costs are approximately equal. Therefore Lysozyme protein can be used as nitrite replacer in chicken mince up to an extent but were found to be more effective than nitrite.

**Keyword:** Comminuted meat products, Curing salt, Lysozyme, Antimicrobial, Antioxidant,