

THE RELATIONSHIP OF INTAKE OF SODIUM  
CHLORIDE, CALCIUM AND PHOSPHORUS WITH  
THE EGG SHELL BREAKAGE IN LAYERS UNDER  
FIELD CONDITIONS



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## CERTIFICATE

This is to certify that the thesis entitled "THE RELATIONSHIP OF INTAKE OF SODIUM CHLORIDE, CALCIUM AND PHOSPHORUS WITH THE EGG SHELL BREAKAGE IN LAYERS UNDER FIELD CONDITIONS" submitted in part fulfilment of the requirements for the degree of MASTER OF VETERINARY SCIENCE IN LIVESTOCK PRODUCTION AND MANAGEMENT to the Tamil Nadu Veterinary and Animal Sciences University, Chennai, is a record of bonafide research work carried out by Thiru.M.MURUGAN under my supervision and guidance and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journal or magazine.

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## ABSTRACT

Title : THE RELATIONSHIP OF INTAKE OF SODIUM CHLORIDE, CALCIUM AND PHOSPHORUS WITH THE EGG SHELL BREAKAGE IN LAYERS UNDER FIELD CONDITIONS

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The total intake of sodium chloride, calcium and phosphorus (g) per day by the layers was determined and its impact on egg shell breakage in White leghorn layers was studied.



There was a significant ( $P<0.01$ ) difference in total intake of sodium chloride per day in all the age groups of all the farms, but there was no significant difference in total intake of calcium and phosphorus per day in all the age groups of all the farms.

The total intake of sodium chloride, calcium and phosphorus per day had significant ( $P<0.01$ ) effect on hen day egg production and mortality between farms in birds of 20 to 40 weeks age group and feed efficiency in birds of 40 to 60 weeks ( $P<0.05$ ) and above 60 weeks age group ( $P<0.01$ ). There was no significant difference in hen housed egg production and feed consumption in all the age groups of all the farms.

The egg weight, shell weight and shell thickness had a significant ( $P<0.01$ ) difference between farms in birds of 20 to 40 weeks age group. There was a significant ( $P<0.01$ ) difference in egg weight, shell weight and shell percentage in birds of 40 to 60 weeks age group.

A significant ( $P<0.05$ ) negative correlation was found between the total intake of sodium chloride and egg shell breakage in birds of 20 to 40 weeks and highly significant ( $P<0.01$ ) negative correlation in birds of 40 to

60 weeks age group. A significant negative correlation was found between the total intake of calcium and egg shell breakage in birds of 40 to 60 weeks and above 60 weeks age groups. There was no correlation found between the total intake of phosphorus and egg shell breakage in all the age groups of all the farms.

It is concluded that calcium alone does not influence the quality of the egg shell. The intake of sodium chloride appeared to have played a major role in reducing the shell thickness and increasing the egg shell breakages.