IMPACT OF SOME MARKER AND MAJOR GENES ON IMMUNE STATUS AND EGGSHELL ULTRASTRUCTURE OF CHICKEN

By

ABDELMONIEM MOHAMED ABDELMONIEM

B.Sc. Agric. Sc. (Poultry Production), Ain Shams University, 2009

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This thesis for M.Sc. degree has been approved by:

Dr. Mahmoud Maghraby Iraqi Amer ……

Prof. of Poultry Breeding, Faculty of Agric., Benha University

Dr. Hassan E. Ayoub ……..

Prof. Emeritus of Poultry Breeding, Faculty of Agric., Ain Shams University

Dr. Usama Mohamed Ali Shoureap ……..

Prof. of Poultry Breeding, Faculty of Agric., Ain Shams University

Dr. Ahmed Galal El-Sayed Gad ……..

Prof. of Poultry Breeding, Faculty of Agric., Ain Shams University

Date of examination: 13 / 3 / 2013

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Under the supervision of:

Dr. Ahmed Galal El-Sayed Gad

Prof. of Poultry Breeding, Poultry Production Dept., Faculty of Agric., Ain Shams University (Principal Supervisor)

Dr. Usama Mohamed Ali Shoureap

Prof. of Poultry Breeding, Poultry Production Dept., Faculty of Agric., Ain Shams University

Dr. Mahmoud Yousef Mahrous

Lecturer of Poultry Breeding, Poultry Production Dept., Faculty of Agric., Ain Shams University

ABSTRACT

Abdelmoniem Mohamed Abdelmoniem: Impact of some Marker and Major Genes on Immune Status and Eggshell Ultrastructure of Chicken. Unpublished M.Sc. Thesis, Department of Poultry Production, Faculty of Agriculture, Ain Shams University, Egypt, 2013.

The effect of naked neck (Na), frizzle (F) and double segregation genes on productive performance, immune response and eggshell ultrastructure of chicken was performed under prevailing conditions.

The presence of naked neck gene in a double state with frizzled gene had significantly increased in body weight at 12 weeks of age, relative weight of dressing and breast muscles weight compared to normal feathering counterparts.

With respect to the immune response, the presence of naked neck (Na) gene in a single state or interacted with frizzle gene significantly increased dermal swelling response to phytohemagglutinin-P (PHA-P) injection compared to nanaff counterparts. The antibody level against SRBCs of NanaFf and Nanaff genotypes was significantly higher than that of nanaff ones.

Concerning mechanical and ultrastructure eggshell, it could be speculated that the eggs produced from birds carrying Na gene in a single manner had owned better thickness and breaking strength compared to other produced from nanaff sibs. The presence of Na gene in a single state significantly increased

relative palisade layer thickness compared to nana genotype. Opposite trend was noticed for relative mammillary thickness. Type B bodies, which are rounded and located among mammillary caps, were more frequent in eggshell of nanaff genotype resulting in poor eggshell quality.

In conclusion, the naked neck, frizzle and double segregation genes were significantly improved the immune response and eggshell ultrastructure under prevailing environmental conditions.

Key words: Naked neck, Frizzle, Immunity, Eggshell,Ultrastructure

Numbering	CONTENTS	Page

LIST OF TABLES