## Abstract

Chicken embryonic development and survival mostly affected by maternal and genetic factors. Mternal effect predominty affect pre and postnatal development of chicks embryo. It's belive that these effects are mostly mediated through effect on the formation of epigenetic pattern subsequently control the expression pattern of genes during the offspring Genes. Furthermore it has been shown that yolk component not only involving regulteion of embryo development But also significantly influence on the post natal development. Thereafter some part of breed variation in immunity. The aim of this study was to examine the possible effects on the developing offspring caused by maternal breed the injection of yolk of Khazak breed to the yolk of Ross breed results, and consequently in the expression of TLR4 gene and its relation to immunological traits are investigated were evaluated in offspring. In this research, 150 fertile eggs of broiler breeder hens of the Ross type are assigned to two groups. The experimental groups include: 1. the control group injecting sterile water and penicillin and 2. injection of 300 micro liter Khazak yolk which was That the injection of water and yolk done on the first embryonic day into the wide part of the egg to the yolk bag. And after the end of the incubation period, chickens were slaughtered and the weight on days 27 and 42 of the immune organs (liver, spleen and Burse) measurement Besides, the antibody titer of the chickens against New Castle virus was determin. On the other hand, the gene expression using Real Time PCR was investigated. Moreover, the difference between expression pattern and performance of the gene was studied using JMP and REST software-version 7. In this study, β-actin gene was used as a reference gene. The results show yolk injection that TLR4 gene expression is reduced significantly Compared with the control group ($P<0.05$). Also effective in controlling immune organs weight of the results showed significant effects on the liver weight was injected into the yolk but the weight did not affect burce and spleen. The evulation antibody showed that injected into the yolk increase in antibody titer. Based on these results it can be said that maternal effects play a crucial role in the children's phenotype; therefore, some of breeding differences in immunity might be due to the effect of the breed on yolk components.

Key words: in ovo injection, maternal effects, yolk combinations, gene expression, native chickens Khazak, TLR4

**University of Zabol**
**Graduate school**
**Faculty of Agriculture**
**Department of Animal Science**

**The Thesis Submitted For the Degree of Master of Science**
**(In the field of Animal Breeding)**

# Effect of *in ovo* Khazak Native yolk injection into the Ross eggs and on the immunity parameters and expression of TLR4 gene

**Supervisors**
Dr. M. Vafaye valleh
Dr. GH. Dashab

**Advisors**
Dr. F. Bagherzadeh

**By**:
F. Bazmandegan shamili

January 2015