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## RESEARCH ARTICLE

### INFLUENCE OF ORAL PELLETT VACCINE IN IMPROVING EGG QUALITIES IN DESI CHICKEN

\*Lurthu Reetha, T. and Johnson Rajeswar, J.

TANUVAS Regional Research Centre, Industrial Estate Post, Pudukkottai-622004, Tamil Nadu, India

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#### ABSTRACT

The study was carried out at Veterinary University Training and Research Centre, Tiruchirapalli, Tamil Nadu. A total of 48 day old desi chicks obtained from a private hatchery in Namakkal, TamilNadu were maintained under cage system of rearing up to 52 weeks of age as per standard management practices. All the 48 chicks were divided into six groups having eight chicks in each group were subjected to different treatment regimes. Ten eggs from each group were randomly collected during the last three days of eight weeks interval period from 28 weeks to 52 weeks of age and were used to measure the egg quality parameters. In all the six treatment groups with respect to egg shell thickness and Haugh unit no significant difference ( $P \geq 0.05$ ) was noticed from 28 weeks to 52 weeks of age. From this study, it is concluded that the administration of Newcastle disease oral pellet vaccine to desi chicken does not affect the egg qualities like egg shell thickness and Haugh unit.

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#### INTRODUCTION

The native rural breeds are valuable genetic resources for each country due to their adaptability to harsh conditions and their resistance against local diseases (Ani, 1990). In developing countries including Pakistan, poultry production is mainly dependent upon traditional extensive production system using native breeds. Indigenous breeds are used to overcome the nutritional deficiencies in certain countries (Roberts, 1992) and additionally have better adaptability to local climatic conditions in comparison with exotic breeds (Romanov *et al.*, 1996).

#### MATERIALS AND METHODS

The study was carried out at Veterinary University Training and Research Centre, Tiruchirapalli, Tamil Nadu. A total of 48 day old desi chicks obtained from a private hatchery in Namakkal, Tamil Nadu were maintained under cage system of rearing upto 52 weeks of age under standard management practices. All the 48 chicks were divided into six groups having eight chicks in each group. First group (T1) served as unvaccinated control, second group (T2) was primed with commercially available Thermostabilised D58 vaccine followed by booster with TANUVAS oral pellet vaccine, Third group (T3) was primed as well as boosted with TANUVAS oral pellet vaccine, Fourth group (T4) was primed with RDV'F' followed by booster with commercial vaccines

(LaSota and R2B), Fifth group (T5) was primed with commercially available Thermostabilised D58 vaccine followed by booster with commercial vaccines (LaSota and R2B), Sixth group (T6) was primed with TANUVAS oral pellet vaccine followed by booster with commercial vaccines (LaSota and R2B). Ten eggs per treatment were randomly collected to study the physical qualities of egg like Egg shell thickness and Haugh unit were assessed by standard procedure. All animal procedures were performed in accordance with Institutional Animal Ethical Committee regulations (Approval no.8/2012 of IAEC dated 10.08.2012). An analysis of variance (ANOVA) with one factor was used to examine the effects of different types of vaccine on egg shell thickness and Haugh unit. The values presented were expressed by assigned average standard error of the mean. In the case of significant difference, Tukey's HSD test was used to separate homogeneous groups at a significant level of 5%

#### RESULTS AND DISCUSSION

Effect of different ND vaccine and vaccination schedule in desi chicken on egg shell thickness is presented in Table -I. In all the six treatment groups with respect to egg shell thickness no statistically significant difference was noticed from 28 to 36 weeks of age, 37 to 44 weeks of age and 45 to 52 weeks of age ( $P \geq 0.05$ ). The egg shell thickness in 28 to 36 weeks of age ranged from  $0.310 \pm 0.005$  to  $0.325 \pm 0.004$  mm. The egg shell thickness in 37 to 44 weeks of age ranged from  $0.324 \pm 0.006$  mm to  $0.339 \pm 0.005$  mm.

\*Corresponding author: Lurthu Reetha, T.,

TANUVAS Regional Research Centre, Industrial Estate Post, Pudukkottai-622004, Tamil Nadu, India.

**Table 1. Effect of different Newcastle disease vaccine and vaccination regimen in desi chicken on egg shell thickness (mm). Each value is a mean of ten observations.**

Treatment	Mean egg shell thickness (Mean $\pm$ SE).		
	28-36 weeks	37- 44 weeks	45 -52 weeks
T1 - Control	0.310 $\pm$ 0.005	0.324 $\pm$ 0.006	0.322 $\pm$ 0.006
T2 - D 58 and Oral Pellet Vaccine	0.313 $\pm$ 0.004	0.328 $\pm$ 0.006	0.319 $\pm$ 0.006
T3 - Oral Pellet Vaccine	0.314 $\pm$ 0.005	0.339 $\pm$ 0.005	0.334 $\pm$ 0.006
T4 - Commercial Vaccine	0.315 $\pm$ 0.004	0.334 $\pm$ 0.003	0.328 $\pm$ 0.003
T5 - D58 and Commercial Vaccine	0.319 $\pm$ 0.002	0.334 $\pm$ 0.004	0.330 $\pm$ 0.004
T6 - Oral pellet Vaccine and Commercial Vaccine	0.325 $\pm$ 0.004	0.327 $\pm$ 0.004	0.329 $\pm$ 0.005
P value	0.094	0.153	0.103

**Table 2. Effect of different Newcastle disease vaccine and vaccination regimen in desi chicken on Haugh unit of eggs. Each value is a mean of ten observations**

Treatment	Mean egg Haugh unit (Mean $\pm$ SE)		
	28-36 weeks	37- 44 weeks	45 -52 weeks
T1 - Control	87.25 $\pm$ 0.01	86.41 $\pm$ 0.06	88.420 $\pm$ 0.05
T2 - D 58 and Oral Pellet Vaccine	87.24 $\pm$ 0.02	86.48 $\pm$ 0.07	88.475 $\pm$ 0.05
T3 - Oral Pellet Vaccine	87.18 $\pm$ 0.04	86.48 $\pm$ 0.02	88.508 $\pm$ 0.05
T4 - Commercial Vaccine	87.25 $\pm$ 0.01	86.57 $\pm$ 0.03	88.471 $\pm$ 0.05
T5 - D58 and Commercial Vaccine	87.19 $\pm$ 0.04	86.64 $\pm$ 0.09	88.515 $\pm$ 0.05
T6 - Oral pellet Vaccine and Commercial Vaccine	87.28 $\pm$ 0.04	86.60 $\pm$ 0.06	88.623 $\pm$ 0.06
P value	0.20	0.11	0.07

The egg shell thickness in 45-52 weeks of age ranged from 0.319  $\pm$  0.006 to 0.334  $\pm$  0.006 mm whereas the egg shell thickness was 0.405  $\pm$  0.003 mm in local hill fowl (Kumar Shive *et al.*, 2008) which is higher than the value recorded in this study. Effect of different ND vaccine and vaccination schedule in desi chicken on egg haugh unit is presented in Table -II. In all the six treatment groups with respect to egg haugh unit no statistically significant difference was noticed from 28 to 36 weeks of age, 37 to 44 weeks of age and 45 to 52 weeks of age ( $P \geq 0.05$ ). The P values in this study from 28 to 36 weeks of age, 37 to 44 weeks of age and 45 to 52 weeks of age were 0.20, 0.11 and 0.07 respectively. The egg haugh unit in 28 to 36 weeks of age ranged from 87.18  $\pm$  0.04 to 87.28  $\pm$  0.04. The egg haugh unit in 37 to 44 weeks of age ranged from 86.41  $\pm$  0.06 to 86.64  $\pm$  0.09. The egg haugh unit in 45-52 weeks of age ranged from 88.420  $\pm$  0.05 to 88.623  $\pm$  0.06. This is greater than the recorded haugh unit values as 80.03  $\pm$  0.92 (Kumar Shive *et al.*, 2008) and 83.70  $\pm$  0.15 (Ali and Anjun, 2013). From this study, it is concluded that the administration of Newcastle disease oral pellet vaccine to desi chicken does not affect the egg quality traits like egg shell thickness and haugh unit. No statistically significant differences were noticed in egg quality parameters from 28 to 52 weeks of age in all the six treatment groups.

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