THESIS TITLE : STUDY ON PRODUCTIVITY, BLOOD ELECTROLYTE AND HEMATOLOGICAL VALUE OF MUSCOVY DUCK IN SALINE AREAS.

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ABSTRACT

The purpose of this study was to determine the physiological adaptation of muscovy duck raised under saline conditions. The first experiment, 1.1) Mineral content of water in four duck raising sites in Khon Kaen University, Amphur Muang and Prayuen in Khon Kaen Province, and Borabue in Mahasarakam Province was investigated. Water samples from these experimental sites were collected three times during August to October and analyzed for Na, K, Cl, Ca and P by using E250 Kodak Ektachem. It was found that the average mineral content in water samples from all of these sites was relatively low. Sodium levels in water samples from the four sites were 112.33 ± 1.52, 124.00 ± 4.50 ,133.00 ± 5.22 and 126.00 ± 3.64 mmol/L , respectively. Chloride levels in water samples from the four sites were 125.00±0.83, 100.00±5.04, 133.33±0.00 and 109.00±3.42 mmol/L, respectively. 1.2) On farm experiment, 24 white (Babary) and black (Thapra 2) laying muscovy ducks at the age of 22-25 weeks were used in a 2x2 Factorial Experiment in Completely Randomized Design (CRD) with 2 replications. The laying muscovy ducks (2 breeds) were raised in nonsaline soil or saline soil areas (2 levels of salinity). Blood samples were collected and analyzed for the blood minerals

and the selected hematological values. The results showed that soil salinity did not significantly change the mineral level or the hematological criteria (P >0.05). However, there was interaction between breed and salinity in that chloride content in blood of white muscovy ducks was higher than that of black muscovy ducks.

The second experiment was to study the effect of salinity of drinking water on production performance of muscovy duck Seventy-two (36 males and 36 females). Thapra2 muscovy ducks at the ages of 4-12 weeks were used in a CRD experiment with 4 treatments and 3 replications. The muscovy ducks were ad-libitum with one of the 4 levels of sodium chloride solution (0, 2.56, 5.12 or 10.24 g/L) at the rate of 0.36,0.47,1.45 and 3.35 L/bird/day, average daily gains were 40.22, 30.99, 25.83 and 11.66 g/bird/day and feed conversion ratio were 3.11, 3.38, 3.41 and 3.94, respectively. The trail lasted for 56 day growth performance and water consumption, blood hemoglobin, hematocrit , minerals contents of the blood and carcass quality of the ducks were evaluated. The results revealed that the growth rate, feed intake, feed conversion, carcass quality and red blood cell number of the duck in the high sodium chloride treatment (10.24 g/L) were significantly lower than that of other groups (P<0.05), but there were no significant effect on blood electrolyte (P>0.05)

The experiment indicated that the mature muscovy ducks could be raised in saline areas without adversely affecting their productive performance . However, the adaptation to saline soil was differed between white and black muscovy ducks . The growing ducks could tolerate saline water up to a maximum level of 5.12 g/NaCl/L.