



## RESILIENCE CAPACITY OF RABBITS TO SALINITY STRESS IN A CHANGING CLIMATE

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**ABSTRACT:**Salinity stress (SS) is seriously becoming more common and gaining priority in scientific research worldwide particularly in the context of changing climate (CC) globally. Assessing the adaptive capacity of rabbits (RB) to SS is crucial sustain the production potentiality. Water salinization is a major constraint threatening all production systems of rabbits. Accordingly, good water quality is critical for rabbit health and productivity. This article reviews the available data in the literature regarding the resilience capacity of rabbits to SS under different environmental conditions. Therefore, this review focuses mostly on the harmful influences of high salt intake (salt load, SL) on physiological responses, blood biochemical indicators, mineral and hormonal profiles in rabbits. Furthermore, the kidney and liver functions are presented and discussed. In addition, the impairment of the reproductive and productive performances of both male and female rabbits are described and interpreted. Moreover, recent managemental approaches and feed additives for ameliorating the deleterious impacts of SS on rabbits are suggested. Further research, more explorations and molecular mechanisms to investigate the undesirable influences on the rabbit's performance are urgently needed.

**Keywords:**Rabbits,salinitystress,adaptation,performance,mitigation,resilience.



## EFFECT OF DIFFERENT RAISING SYSTEMS ON GROWTH PERFORMANCE, CARCASS TRAITS OF PEKIN DUCKS IN EGYPT

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**ABSTRACT:** This study was designed to investigate the effect of different raising systems of Pekin ducks on growth performance, carcass traits and histological for intestinal and pancreas. A total number 200 of Pekin ducks were used, divided into two groups, first, was rearing indoor and the second group was raising by the free range system (outdoor). Live body weight was recorded from 2 weeks to marketing age. Carcass traits were taken at the marketing age to calculate non-edible meat parts and edible meat parts (dressed carcass – gizzard-liver - heart). Sexual dimorphism was calculated for live body weight and carcass traits. Representative specimens were taken from ileum and pancreas to detect histological changes corresponding to raising systems, mortality and defect ratio were recorded. Our results indicated that there were no significant different for live body weight for all ages between the two raising system except at 4 weeks of age, which the duck raising in housing was significantly heavier body weight compared to duck raising by free range system. With respect to edible meat parts, there were no significantly differences found either between the raising system between the two sexes, however the relative heart was significantly higher for indoor duck than outdoor ducks, also the interaction between raising system and sex was significantly, however , there is no significant different between male and female. With respect to sexual dimorphism, the indoor ducks were significantly higher for live body weight and all carcass traits compared to outdoor ducks. It is concluded that the raising systems did not affect the edible meat parts or live body weight at marketing age, however, decreased the sexual dimorphism in the outdoor ducks.

**Key words:** Free range system, In door, Outdoor, Growth performance, Edible meat parts, Sexual dimorphism, Pekin duck



## EFFECT OF GRAZING HOURS ON PRODUCTIVE PERFORMANCE AND ECONOMIC EFFICIENCY IN PEKIN DUCKS

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**ABSTRACT:** This work aims to determine the most appropriate number of hours when raising Pekin ducks by free range system on productive performance.. A total number of 150 one day old of Pekin ducks, that were raised 6 weeks of age, they were divided into four experimental groups; the first group (G1) was reared indoors, the second (G2) was reared outdoor grazes for 8 continuous hours, the third group (G3) grazes for only 4 hours, the fourth group (G4) grazes for 6 separate hours (4 hours in the morning and 2 hours at the end of the day light). Body weight gain, growth performance and feed conversion were calculated. Mortality was recorded during the experimental period, while the observed defects in (legs, dwarf, beak, neck, ...etc.) were recorded for the birds didn't die. Economic efficiency was evaluated by -European Production Efficiency, European Broiler Index and Economic value. The live body weight at marketing age (6 weeks) was significantly higher on G4 compared to remain groups, the economic efficiency was better on G4 followed by G3, G1 and. In conclusion, Grazing for an intermittent number of hours (G4) is better than continuous grazing (G2) and remain groups.

**Keywords:** Free range system, growth performance, Economic efficiency, Number of grazing hours, Pekin duck



## EXPLORING STUDYING THE EFFECT OF FEEDING AZOLLA ON ECONOMIC EFFICIENCY OF PEKIN AND MUSCOVY DUCKS

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**ABSTRACT:** This study aimed to evaluate the effect of feeding Azolla on some productive traits of ducks under winter season in Egypt. A total number 400 (200 one day old for each Pekin and Muscovy ducks) were used for this study. The two strains divided into two groups, the first was feed on commercial diet only (G1) and the second group feed on commercial diet with Azolla which added alone behind the diet ad libitum (G2.). The live body weight, feed and Azolla consumption was recorded from 2 weeks to marketing age of each strain (6 and 9wks for Pekin and Muscovy duck, respectively) .Twenty birds (10males + 10 females) birds were taken from each group experimental withen each strain to evaluate the carcass traits. Economic efficiency was evaluated by -European Production Efficiency, European Broiler Index and Economic value. The G2 Pekin ducks showed higher significantly for live body weight, better feed conversion and higher edible meat parts, lower mortality and defects compared to G1 Pekin ducks. However the G2 Muscovy ducks showed significantly lower marketing body weight, the same group had better feed conversion, higher edible meat parts, lower mortality and defects compared to G1 Muscovy ducks. The Pekin ducks consumed 1600 g Azolla from 2-6 weeks and Muscovy ducks consumed 3986 g Azolla from 2-9 weeks of age. The economic efficiency was better in the G2 Pekin ducks compared to G1. Opposite trend was noticed in Muscovy ducks, the G1 Muscovy duck was better in the economic efficiency compared to G2 Muscovy ducks. In conclusion, the Muscovy duck consumed a large amount of Azolla, which affected on body weight (Azolla containing 12-18% fiber), so Azolla consumption should be regulated daily. As for the feeding behavior of Muscovy ducks, we find the Muscovy ducks are more likely to consume Azolla and weed if they are available free (ad libitum).

**Key words:** Azolla, Growth performance, Carcass traits, Economic Efficiency, Pekin, Muscovy duck.



## **DETERMINING THE ECONOMIC MARKETING AGE OF DOMYATI DUCKS (ANAS PLATYRHYNCHO) UNDER DIFFERENT RAISING SYSTEMS IN EGYPT**

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**ABSTRACT:** The present study designed to compare the impact of various methods of raising protocols on growth the performance and economic efficiency of the Domyati duck strain. A total number of 168, one day old Domyati ducks were raised together until 2 weeks of age, were weighed and randomly divided into four experimental groups; the first group (T1) was reared indoors and fed only a commercial diet, the second (T2) was reared indoor and fed the commercial diet with Azolla, the third group (T3) was reared outdoor and fed on commercial diet with outdoor grass feeding and the four group (T4) was out door fed on commercial diet with outdoor grass and Azolla. The live body weight, feed, and Azolla consumption were recorded from 2 -8 weeks (marketing age). Body weight gain, growth performance, and feed conversion were calculated. Mortality was recorded during the experimental period, while the observed defects in (legs, dwarf, beak, neck, ...etc.) were recorded for the birds that didn't die. Economic efficiency was evaluated by -European Production Efficiency, European Broiler Index, and Economic value. The T4 Domyati ducks showed significantly better feed conversion compared to remain groups. The economic efficiency was better in the T4 ducks followed by T2 compared to T1 and T3. However, the economic marketing age was at 7 weeks of age. Finally, we conclude that the groups duck with Azolla feeding (T2 and T4) could be applied as a practical and beneficial protocol, in terms of better live body weight, feed consumption, and feed conversion ratio compared to other studied groups

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**Keywords:** Azolla, Indoor, Outdoor system, Growth performance, Marketing age, Economic Efficiency, Mallard duck, Domyati duck

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