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EFFECT OF DIETARY FRESH AZOLLA INCLUSION ON CARCASS TRAITS OF WHITE PEKIN BROILER DUCKS

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ABSTRACT

This study was undertaken to investigate the effect of inclusion of dietary fresh *Azolla* in the basal diet of white pekin broiler ducks on carcass traits. Three dietary treatments were given such as G_1: Basal diet, G_2: Basal diet + 5% Fresh *Azolla* of basal diet, G_3: Basal diet + 10% Fresh *Azolla* of basal diet. Parameters such as dressing (%), eviscerated yield (%), giblet (%), neck (%), wing (%), breast (%), thigh (%), drumstick (%) were recorded. Significant difference was recorded (P≤0.05) between the groups for giblet yield, while no significant difference could be noticed for any other traits.

Keywords: *Azolla*, Carcass traits, White pekin broiler ducks.

Azolla is a free-floating freshwater fern that is known for its rapid vegetative spread and nutritive value [5]. *Azolla* of family *Azollaceae* was a good source of protein and it contained almost all essential amino acids, minerals such as iron, calcium, magnesium, potassium, phosphorus, manganese etc, apart from appreciable quantities of vitamin A precursor beta-carotene and vitamin B_{12}[4]. Nutritiive value of *Azolla* has been experimented by several workers in different poultry species, viz. chicken[2,8], ducks[3] and quails[10] with promising results in performance. Ducks have better adaptation to various environmental conditions compared to chickens. They are hardy and can resist a number of diseases Duck meat and eggs are important sources of protein and iron[11]. It has been reported that the modern domestic White Pekin duck performs better than the modern broiler chicken in terms of weight gain and feed efficiency to the same live weight due to genetic improvement[12]. Very few works have been taken up on the effect inclusion of dietary fresh *Azolla* on the performance of White pekin broiler ducks. Therefore, the proposed study has been envisaged to find out the potential effect of dietary fresh fresh *Azolla* on carcass characteristics of broiler duck production in the agro- climatic conditions of coastal Odisha.

MATERIALS AND METHODS

One hundred eight, day-old White-Pekin ducklings of either sex were purchased from Central Avian Research Institute (CARI), Bhubaneswar. All ducklings were randomly distributed into three treatment groups with three replicates each, and each replicate having twelve ducklings, maintaining uniformity in body weight. Ducklings were grown in deep litter system of rearing and the experimental diets were provided as per BIS specification. Three dietary treatments were given such as G_1: Basal diet, G_2: Basal diet + 5% Fresh *Azolla* of basal diet, G_3: Basal diet + 10% Fresh *Azolla* of basal diet. The diet was made isocaloric and iso nitrogenous. *Azolla*, required for the preparation of experimental diets was cultivated in the premises of Instructional Livestock Farm Complex, as per the standard

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procedures[6] with little modification. At the end of sixth week of age parameters such as dressing (%), eviscerated yield (%), giblet (%), neck (%), wing (%), breast (%), thigh (%), drumstick (%) were recorded. Data obtained from the experiment were subjected to statistical analysis (SPSS)wherever required.

RESULTS & DISCUSSION

The average values of various carcass characteristics, viz., dressing yield, eviscerated yield, giblet yield, neck yield, wings yield, breast yield, back yield, thighs yield and drumsticks yield expressed in percentage of live body weight of six week old ducks have been depicted in the (Table 1).It was observed that the dietary treatments for a period of six weeks could not significantly (P>0.05) influence the dressing yield, eviscerated yield, neck yield, wings yield, breast yield, back yield, thighs yield and drumsticks yield of ducks, but significantly (P≤0.01) influence giblet yield.

The higher giblet weights in the groups G_2 and G_3 might be attributed to feeding of *Azolla.* These findings indicated that inclusion of *Azolla* at 5% and 10% level does not have any significant effect on improvement of carcass parameters in comparison to basal feed. Moreover, this non significant effect as compared to control (G_1) proved that, *Azolla* can be included in the diet for a better growth performance and economic return. These findings are in accordance with previous workers[1] who reported that the percent dressed yield, eviscerated yield and ready-to-cook yield in broilers were not influenced by dietary supplementation of dried *Azolla* but the percent giblet yield of birds fed with 4.5% *Azolla* was significantly higher (P≤0.05) than control and other treatments. Earlier studies[2] also reported about significant increase in giblet yield in 15% *Azolla* treated groups with significant increase in dressing percentage in 5% *Azolla* treated groups. Similarly, other workers[6] indicated about non-significant differences amongst the means of various traits such as carcass yield percentage, abdominal fat and abdominal pad thickness. However, earlier researchers[7] concluded that supplementation of *Azolla* powder at 5% level significantly (P<0.01) increased of carcass efficiency percentage and thigh relative percentage (P<0.01) while, the lowest its percentage is related to diets containing 15% *Azolla*.

Table 1. Carcass characteristics of ducks (Mean ± SE)

Parameters	Treatment			P value
	G_1	G_2	G_3	
Dressing yield (%)	70.39±1.26	71.59±2.73	71.19±2.22	0.92
Eviscerated yield (%)	63.94±0.71	64.70±2.29	63.49±1.12	0.86
Giblet yield (%)	6.96^{a} ±0.05	7.34^{ab} ± 0.19	7.69^{b}±0.04	0.01
Neck yield (%)	11.67±0.61	10.78 ±0.63	11.69±0.74	0.57
Wing yield (%)	7.63±0.02	7.43±0.09	7.39±0.09	0.16
Back yield (%)	14.75±0.40	15.10±0.55	16.69±0.62	0.09
Breast yield (%)	10.36±0.13	11.50±0.93	11.76±0.24	0.25
Thigh yield (%)	7.51± 0.04	7.59 ± 0.15	7.73± 0.07	0.34
Drumstick yield (%)	9.69 ±0.07	9.74 ±0.22	9.81 ± 0.04	0.81

Values bearing different superscripts in a row differ significantly (P≤0.05)

CONCLUSION

So from this study it can be concluded that *Azolla* can be a very good substitute for costly protein source and inclusion of it in the basal diet of broiler ducks can maintain the production performance. So *Azolla* can be termed as green gold for poor farmers and multi component unconventional nutrient source for broiler production.

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