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**Influence of Dietary Supplementation of Probiotic on Body Weight of White Pekin Ducks**

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**Abstract**

A study was conducted to find out the effect of dietary supplementation of probiotic (0, 0.25% probiotic and 0.05% probiotic) 'Livesac' in White Pekin ducks (Vigova variety) for a period of eight weeks. Ducks with 0.05% probiotics recorded a significantly (P<0.01) higher body weight than other groups from second fortnight onwards and followed a similar pattern till the end of the experiment. The cumulative body weight gain upto six and eight weeks showed significantly higher (P<0.01) values in 0.05% probiotic group than the control and 0.25 per cent probiotic supplemented group. Mortality percentage between treatments was not affected by probiotic supplementation.

**Key Words:** Probiotics, White Pekin ducks, Body weight

Incorporation of additives in poultry rations improves overall performance and also lowers feed cost. The use of microbial preparations like probiotics have been reported to be effective in counteracting the stress by its beneficial effects on live weight, feed intake, feed conversion efficiency and meat quality. Probiotics help in regulating the microbial environment in the gut, reduce the digestive upsets, prevent pathogenic gut bacteria, provide essential nutrients, improve feed utilization and enhance production efficiency (Jin et al., 1996). The beneficial effects of probiotics in chicken production are well documented but its application in duck nutrition is not much emphasized and reports are scanty.

**Materials and Methods**

One hundred and forty four (144) day-old, straight run White Pekin (Vigova variety) ducklings were divided into three groups, each having four replicates of 12 ducklings each. These groups were allotted randomly into these dietary treatments i.e. T1 – standard broiler (control), T2 – control + 250g Livesac (Zeus Biotech Limited, Mysore) / tonne of feed (0.025%) and T3 – control + 500g Livesac / tonne of feed (0.05%). The ducklings were reared on litter floor with a floor space of 2356 cm² , and on ad libitum feed throughout the experimental period. And standard managemental practices were adopted identically to all groups. Each kilogram Livesac contains Lactic
Table I. Influence of dietary supplementation of probiotic on fortnightly mean body weight in White Pekin ducks, g

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Body weight (g) at fortnight interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>T1</td>
<td>41.00±0.37</td>
</tr>
<tr>
<td>T2</td>
<td>41.62±0.57</td>
</tr>
<tr>
<td>T3</td>
<td>41.34±1.21</td>
</tr>
</tbody>
</table>

Means with different superscripts within a column differ significantly (P<0.01)

Table II. Effect of dietary supplementation of probiotic on production performance at six and eight weeks of age in White Pekin ducks, g

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Parameters</th>
<th>Dietary Treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>T1</td>
</tr>
<tr>
<td>1</td>
<td>Cumulative body weight gain up to six weeks (g)</td>
<td>1825.63&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>2</td>
<td>Cumulative body weight gain up to eight weeks (g)</td>
<td>2422.89&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>3</td>
<td>Mortality (per cent) up to six weeks</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Mortality (per cent) up to eight weeks</td>
<td>4.17</td>
</tr>
</tbody>
</table>

Means with different superscripts within a row differ significantly (P<0.01)

acid bacteria 120000 million CFU/kg, live yeast cells 5000 billion CFU/kg and traces of enzymes, *viz.*, Xylanase, Glucanase, Pectinase, Amylase, Cellulase, Protease, Phytase and Galactosidases.

For the first six weeks, the ducklings were fed broiler starter mash formulated as per BIS specifications (1992) containing 23 per cent crude protein and 2800 kcal per kg metabolizable energy as the duck starter ration. From sixth week onwards broiler finisher mash containing 20 per cent crude protein and 2900 kcal per kg metabolizable energy content was fed as the duck finisher ration and was continued till the end of eight weeks of age. The composition of the starter and finisher diets and the proximate composition of the ration were determined using AOAC (1990) procedures.

Individual body weight, body weight gain of ducklings was recorded at fortnightly intervals and the cumulative body weight up to six and eight weeks were calculated. Mortality was recorded replicate-wise during the entire experimental period. The data collected on various parameters were statistically analysed as per the methods described by Snedecor and Cochran (1985).

Results and Discussion

The fortnightly mean body weight of White Pekin ducks as influenced by dietary supplementation of probiotics is presented in Table I. The body weight of ducklings of T3 group (0.05% probiotic supplemented group) was significantly (P<0.01) higher than that of control and T2 groups (0.025% probiotic supplemented group) from fourth week till the end of the study.

The cumulative mean body weight gain data up to six weeks revealed that the gain was significantly (P<0.01) higher in 0.05 per cent probiotic supplemented group. The cumulative body weight gain up to eight weeks was low in ducks with control feed, intermediary with 0.025 per cent probiotic supplemented group and high with 0.05 per cent probiotic supplemented group and was significant (P<0.01) among the three groups. This is in agreement with Jeroch et al. (1995), Ningguo and Zhengkang (1997) and Hong et al. (2002) who reported improvement in body weight gain by dietary supplementation of additives like enzymes in ducks.

Mortality percentage was not affected by probiotic supplementation. This is in agreement with Gippert and Bodrogi (1992) who reported
that incorporation of probiotic had no effect on
mortality in ducks. Necropsy findings revealed
that probiotic supplementation did not have
detrimental effect on the physiological well
being of broiler ducklings and the mortality
was not related with any adverse effects due to
supplementation of probiotics.

Summary
Supplementation of probiotic recorded a signifi-
cantly (P<0.01) higher body weight in 0.05%
supplemented group than other groups from
second fortnight onwards and followed a similar
pattern till the end of the experiment. The
cumulative body weight gain upto six and eight
weeks showed significantly higher (P<0.01)
values in 0.05% probiotic group than the control
and 0.025 per cent probiotic supplemented group.
Mortality percentage between treatments was
not affected by probiotic supplementation.

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Performance of Dahlem Red Bird in Intensive System of Management

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Abstract
A study has been undertaken in a flock of Dahlem
Red bird being maintained in intensive system
under the project “AICRP on Poultry Breeding”,
Assam Agricultural University, Khanapara,
Guwahati-22. The body weight ranged from 45.23
± 3.29 g at day old to 2340.30 ± 48.50 g at 40 weeks.
The age at sexual maturity, annual egg produc-
tion and egg weight at 40 weeks were 158.23 ±
2.75 days, 175.23 ± 10.69 nos. and 48.60 ± 3.55 g
respectively. The shank length, keel length and
breast angle was found to be 41.37 ± 2.95 mm,
42.12 ± 3.30 mm, 59.27 ± 6.83 (°) respectively.
The percentage of fertility and hatchability on
total egg set was recorded as 93.69 ± 4.76 and
78.23 ± 3.56 respectively. Egg quality traits like
shape index, albumen index, yolk index, haugh
unit and shell thickness were 73.56 ± 2.73, 0.076
± 0.002, 0.372 ± 0.009, 79.23 ± 1.45 and 0.301 ±
0.005 mm respectively.

Key words: Dahlem Red, Intensive system

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