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Livability pattern of swarnadhara layer birds given with energy and protein at low and high level

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Abstract
A biological trial was done in the layers of Swarnadhara parent stock by differing the levels of both energy, protein as well as calcium, phosphorus in their diets. 256 female parents stock of Swarnadhara to form 32 replications were fed with 8 different diets [2600 / 2500 kcal ME / kg; 18 / 17% CP vis-à-vis with 3.25% Ca / 0.35% Pav (T_1 - T_4) and 3.00% Ca / 0.30% Pav regimen (T_5 - T_8)] during laying period. Experiment showed nonsignificant differences in livability of birds. Hence it was concluded that energy and protein had no significant effect on livability of swarnadhara parent stock.

Keywords: Energy, protein, livability, swarnadhara

Introduction
Poultry industry relies as highly organized with fastest-growing segment among agro-industries. Nearly 85% of poultry products in 52 countries of Africa comes from rural chicken production which is a widely acceptable practice (Gueye, 1998; Gueye, 1997; Gueye, 2002) [3, 2, 4]. Consumers from East Asia and Europe are ready to pay a higher retail price for more tasty egg / chicken meat produced in less confined conditions (Chin, 2003) [1] and those people prefer mostly colour-feathered of slow-growing meat type quality chickens. The indigenous chicken on upper side with more than 50% of poultry population in Thailand, Indonesia, Philippines and 85% in Burma (Sharma *et al.*, 2002) [6].
These native birds lay very less number of eggs (40-60 eggs) annually (Khan, 2002) [5] and eggs are consumed by the family; but also distributed as gifts or occasionally bartered for other commodities. Swarnadhara is akin to native birds and can survive very well under scavenging conditions.

Materials and Methods
Eight layer diets (T_1 to T_8) of variable energy / protein along with high calcium (3.25 and 3.00%) and available phosphorus (Pav 0.35 and 0.30%) levels were designed and the description of the experimental diets is given in Table 1.
Number totally to 256 Swarnadhara pullets were selected and allotted to 32 replications with only 8 pullets in every replication. Later on, one selected Swarnadhara cock was introduced into each experimental pen (10"x 6"). Trial continued under deep litter system (paddy husk as the bedding material)
Formulated 8 diets were offered to of 8 birds of 4 replications in completely randomized design to carry out the experiment.
Four layer diets (T_1 to T_4) of variable energy / protein / high calcium (3.25%) / available phosphorus (Pav 0.35%) levels were formulated. Further, a similar set of four more diets of T_5 to T_8 were prepared by same combinations of energy / protein, but with low calcium (3.00%) / low phosphorus (Pav 0.30%) levels. All the diets formulated contained conventional feed ingredients procured during the study.

Survivability of Birds
Routine livability data was maintained during the study. Dead birds were subjected for postmortem to know the cause.

Statistical Analysis

Data generating during layer trial was subjected to statistical analysis (Snedecor and Cochran, 1989) [7].

Results & Discussion

Dietary evaluation

Experimental diets were freshly prepared as and when required and were subjected for proximate composition / calcium / phosphorus contents estimation.

The selected protein levels of the current experiment were higher than the recommendations given by Reddy and Rajendiran (2002) [8] / NRC (1994). Similar pattern of diets were also formulated in experiment by Suma and Reddy (2020) [8] for swarnadhara grower parent stock with high and low levels of energy as well as protein.

Livability of layers

Livability per cent of layers under different treatments during the experimental period is given in Table 2.

Survivability values of layers were statistically ($P \geq 0.05$) similar among all the diets. These values were 93.75% in T_8 group, 96.88% in T_2, T_4, T_5 as well as T_7 groups. The remaining groups (T_1, T_3 and T_6) showed 100% livability. Hence, these results indicated that there was a non-significant ($P \geq 0.05$) inconsistent variation in livability. Thus the mortality in several groups concluded with independency of dietary variations.

In conclusion, varied levels of energy / protein in diet of Swarnadhara parent stock had no effect on livability value of birds during laying period.

Table 1: Dietary description of experimental layer diets

Treatment	ME (kcal/kg)	CP (%)	Ca%	Pav%
T_1	2600	18	3.25	0.35
T_2	2600	17	3.25	0.35
T_3	2500	18	3.25	0.35
T_4	2500	17	3.25	0.35
T_5	2600	18	3.00	0.30
T_6	2600	17	3.00	0.30
T_7	2500	18	3.00	0.30
T_8	2500	17	3.00	0.30

Table 2: Livability per cent of experimental birds fed different diets during layer phase

Treatment		Tr. No.	Livability% NS		
High Ca, P	HEHP	T_1	100.00	±	0.00
	HELP	T_2	96.88	±	3.13
	LEHP	T_3	100.00	±	0.00
	LELP	T_4	96.88	±	3.13
Low Ca, P	HEHP	T_5	96.88	±	3.13
	HELP	T_6	100.00	±	0.00
	LEHP	T_7	96.88	±	3.13
	LELP	T_8	93.75	±	3.61

NS Non-significant

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