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## Effect of different rationale compositions on the performance of certain attributes on the Vencov, Hubbard and Croiler breeds

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### Abstract

An experiment was conducted to evaluate the impact of different rationale on the performance of certain attributes of Vencov, Hubbard and Croiler breeds. The average feed intake, body weight, weight gain, feed conversion efficiency, weight gain at slaughter and dressing weight was evaluated. The average feed intake were 2.18, 2.02 and 2.03 kg/bird, in the treatments (I<sup>st</sup>, II<sup>nd</sup> and III<sup>rd</sup>) and it was 1.89, 1.76 and 2.57 kg/bird in the breeds (Vencov, Hubbard and Croilers) respectively. The average body weight was 1.07, 1.15 and 1.08 kg/bird, in the treatments and it was 1.10, 1.09 and 1.08 kg/bird in the breeds, respectively. The average body weight gain was 1.02, 1.09 and 1.04 kg/bird in the treatments and 1.06, 1.05 and 1.04 kg/bird, in the breeds respectively. The average feed conversion efficiency was statistically significant in the treatments. The differences in the average feed conversion efficiency among the groups B<sub>1</sub>, B<sub>2</sub> and B<sub>3</sub> were also very high ( $p < 0.01$ ). The combined effect of different feeds and breeds did not show any statistical significance. The average dressing weights of birds in treatments were 0.74, 0.78 and 0.76 kg/kg bird and 0.79, 0.77 and 0.74 kg/kg bird in the breeds respectively.

**Keywords:** Broiler, feed, Croiler, Vencob, Hubbard, body weight

### Introduction

The livestock and poultry enterprises is an indispensable component of agriculture and also is the most suitable production system that has enormous potential to improve the Socio-economic status of the large number of the rural population, poultry farming is mainly a rural based activity, spread widely across the country in about 70 million small house hold having 4-5 birds. Poultry is one of the fastest growing segments of agriculture sector in India with an average growth rate of 8% in egg production and 13% per annum for broiler production. India is now the world's largest egg producer after China and USA with 60,000 million eggs worth Rs 7300 crores. Regarding broiler production, India stands 4<sup>th</sup>, with 3.25 million tons of broiler meat production contributing Rs.11000 crores to the national economy. Apart from expanding high input intensive chicken and strengthening of rural poultry can be a critical tool for raising living standard, poverty alleviation, nutritional security and enhancing socio-economic status of people belonging to lower strata of the society (Anonymous, 2008) [1]. The chickens (broilers) reared for meat production, are marketed at an age of around 42 days. So, broiler production is a short-term business.

### Materials and Methods

Three breeds of fowl viz. Vencov, Hubbard and Croiler and three types of feed viz., broiler mash 100 percent, soybean 30 percent + Maize 70 percent and broiler mash 30 percent + Maize 70 percent, provided to the birds, were selected for the study. During the experimental period, the broiler mash was purchased from Abhi Enterprises, Bhati Chauraha Mau. The feeds were prepared by lending the ground soybean with maize and broiler mash + maize. After proper mixing, the feeds were kept separately in separate drums.

Firstly, bird's live weight was recorded before slaughtering the bird with the help of pan balance after that bird was slaughtered with the help of a simple knife, in the process of slaughtering the birds head was removed from the body. After bleeding and ceasing of all reflexes, feathers were removed along with skin, feet was removed from the tarsal joint. After removal of head, feet and feather than abdominal cavity opened by a transverse cut. Another circular cut was made around the vent. A silt was given in the skin of the neck for easy removal of crop and neck, lungs, gall bladder and gizzard contents were also removed and then

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eviscerated body was cut into small pieces, pieces of eviscerated body was packed in a polythene bag and weight was recorded. Wastage (beak, feed, feathers, kidney, gall bladder and gizzard content) are also recorded.

Experiments were repeated thrice during experimental periods from March to June 2010. The values obtained during the entire period of experiment were statistically analyzed with the procedure of Panse and Sukhatme (1985)<sup>[4]</sup>.

## Results and Discussion

The results obtained thus described under the following sub-heads.

### A. Average feed intake

The data presented in the Table 1-3 shows that the average feed intake (kg/bird) from the arrival of the day-old chicks upto selling date of birds. The average feed intake by the Vencov, Hubbard and Croiler breeds were 1.97±0.02, 1.87±0.2 and 2.70±0.04 kg/birds, respectively. The minimum

feed intake was found in Hubbard followed by Vencov and the maximum in Croiler with an overall average of 2.18 Kg/bird manifested by broiler mash ration. In second treatment (30 percent soya + 70 percent maize) the average feed intake in Vencov, Hubbard and Croilers were 1.84±0.20, 1.76±0.04 and 2.48±0.04 kg/bird, respectively (with an average of 2.02 kg/bird), and the maximum feed intake in Croilers, followed by Vencov and Hubbard. In case of third treatment (30 percent broiler mash + 70 percent maize) the average feed intake was recorded to be 1.88±0.06, 1.67±0.04 and 2.55±0.05 kg/bird in Vencov, Hubbard and Croiler breeds respectively. The maximum feed intake was found in Croiler followed by Vencov and Hubbard. The overall average of feed intake in this treatment was 2.03 kg/bird. The differences in the feed intake values between the treatments were highly significant and between the breeds were significant. The present findings with full conformity with the findings of earlier workers e.g. Kumar *et al.* (1995)<sup>[3]</sup> Soriano *et al.* (1995)<sup>[6]</sup>.

**Table 1:** Effect of Broiler mash ration on different attributes of broiler chicks.

Breeds	Attributes					
	Feed Intake	Body weight	Weight gain	Feed Conversion efficiency	Weight gain at Slaughter	Dressing Weight
Vencov	1.97±0.02	1.06±0.02	1.02±0.02	1.73±0.03	1.06±0.02	0.76±0.02
Hubbard	1.87±0.02	1.04±0.02	1.03±0.02	1.67±0.03	1.06±0.02	0.75±0.02
Croiler	2.70±0.04	1.07±0.03	1.03±0.03	2.43±0.04	1.10±0.03	0.74±0.03
Mean	2.18	1.06	1.02	1.94	1.07	0.75

**Table 2:** Effect of Soya + Maize on different attributes of broiler chicks.

Breeds	Attributes					
	Feed Intake	Body weight	Weight gain	Feed Conversion efficiency	Weight gain at Slaughter	Dressing Weight
Vencov	1.84±0.04	1.16±0.02	1.13±0.02	1.58±0.04	1.17±0.02	0.83±0.02
Hubbard	1.76±0.04	1.13±0.05	1.09±0.05	1.52±0.07	1.15±0.05	0.79±0.05
Croiler	2.48±0.04	1.12±0.05	1.06±0.05	2.20±0.07	1.12±0.05	0.74±0.05
Mean	2.02	1.14	1.09	1.76	1.14	0.78

**Table 3:** Effect of Broiler mash + maize on different attributes of broiler chicks.

Breeds	Attributes					
	Feed Intake	Body weight	Weight gain	Feed Conversion efficiency	Weight gain at Slaughter	Dressing Weight
Vencov	1.88±0.06	1.07±0.05	1.05±0.07	1.69±0.03	1.11±0.07	0.78±0.07
Hubbard	1.67±0.04	1.09±0.04	1.04±0.03	1.60±0.03	1.12±0.04	0.77±0.05
Croiler	2.55±0.05	1.04±0.03	1.05±0.02	2.38±0.05	1.09±0.02	0.73±0.05
Mean	2.03	1.07	1.04	1.89	1.10	0.76

### B. Body weight (in kg) of the birds

The average body weight of chicken in Vencov, Hubbard and Croilers were 1.06±0.02, 1.04±0.02 and 1.07±0.03 kg/bird respectively, with an overall average of 1.06 kg/bird in First treatment. In the second treatment, the body weights were 1.16±0.02, 1.13±0.05 and 1.12±0.05 kg/bird in Vencov, Hubbard and Croilers, respectively. The maximum body weight was recorded in Vencov (1.16±0.02 kg/bird) followed by Hubbard (1.13±0.05 kg/bird) and the minimum in Croiler (1.12±0.05 kg/bird). The overall average was observed 1.14 kg/bird. In case of third treatment, the body weight were recorded to be 1.07±0.05, 1.09±0.04 and 1.04±0.03 kg/bird in Vencov, Hubbard and Croilers, respectively. The maximum body weight was recorded in Croilers followed by Vencov and Hubbard with an overall average of 1.07 kg/bird. The differences in the body weight on different feeds were found to be non significant ( $p < 0.01$ ).

### C. Body weight gain (Kg/bird)

The data depict that the average body weight gain by Vencov, Hubbard and Croilers were 1.02±0.02, 1.03±0.02 and 1.03±0.03 kg/bird, respectively with the maximum body weight gain in Hubbard and Croiler followed by the Vencov with an overall average of 1.02 kg/bird in First treatment. While in second treatment the average body weight gain was 1.13±0.02, 1.09±0.05 and 1.06±0.05 kg/bird in Vencov, Hubbard and Croilers, respectively, with an overall average of 1.09 kg/bird, in case of third treatment, the maximum body weight gain was recorded in Croilers (1.05±0.02 kg/bird) and Vencov (1.05±0.07 kg/bird), whereas, the minimum in Hubbard (1.04±0.03 kg /bird). The overall average of body weight gain in the third treatment was 1.04 kg/bird. The differences in the body weight gain due to different feeds were observed statistically at par with each other. The ranged values in body weight gain found in the present study were at

par with the values reported by Soriano *et al.* (1995)<sup>[6]</sup>, Kumar *et al.* (1995)<sup>[3]</sup>.

#### D. Feed Conversion Efficiency (kg/kg bird)

It is evident from the data, that the feed conversion efficiency (FCE) in Vencov, Hubbard and Croilers were  $1.73 \pm 0.03$ ,  $1.67 \pm 0.03$  and  $2.43 \pm 0.05$  kg/kg bird, respectively with an overall average of 1.94 kg/kg bird in the first treatment. Whereas, in the second treatment the FCE was  $1.58 \pm 0.04$ ,  $1.52 \pm 0.07$  and  $2.20 \pm 0.07$  kg/kg bird in Vencov, Hubbard and Croilers, respectively. The maximum FCE was in Croilers followed by Vencov and the minimum in Hubbard. The overall average was 1.76 kg/kg bird. In case of third treatment, the FCE in Vencov, Hubbard and Croilers were  $1.69 \pm 0.03$ ,  $1.60 \pm 0.03$  and  $2.38 \pm 0.01$  kg/kg bird, respectively, with the maximum FCE in Croilers group followed by Vencov and the minimum in Hubbard. The overall average of FCE in this treatment was 1.89 kg/kg bird. The statistical analysis of the data shows significant difference ( $p < 0.01$ ) among the highest and the lowest values obtained from three respective feeding treatments.

#### E. Body weight of the birds at the time of slaughtering

For slaughter 10 birds were selected randomly from each treatment group. It is obviously clear from the data that the average body weight of birds in Vencov, Hubbard and Croilers were  $1.06 \pm 0.02$ ,  $1.06 \pm 0.02$  and  $1.10 \pm 0.03$  kg/bird, respectively, with an overall average body weight of 1.07 kg/bird in First treatment. In second treatment the average body weight of Vencov, Hubbard and Croilers were  $1.17 \pm 0.02$ ,  $1.15 \pm 0.05$  and  $1.12 \pm 0.05$  kg/bird respectively, with an overall average of 1.14 kg/bird. In case of third treatment, the body weight in Vencov, Hubbard and Croilers were  $1.11 \pm 0.02$ ,  $1.12 \pm 0.04$  and  $1.09 \pm 0.02$  kg/bird respectively, with an overall average of 1.10 kg/bird. The differences in the body weight due to variation in feeds from second treatment to First and third treatment were statistically non-significant ( $p < 0.05$ ).

#### F. Dressing Weight of birds (Kg/bird)

Data contained in the table, clearly indicate that the highest dressing weight was recorded from Vencov ( $0.76 \pm 0.02$  kg/kg bird) followed by Hubbard ( $0.75 \pm 0.02$  kg/kg bird) and the minimum in Croilers ( $0.74 \pm 0.03$  kg/kg bird) in the first treatment with an overall average of 0.74 kg/bird. In second treatment the dressing weight in Vencov, Hubbard and Croilers were  $0.85 \pm 0.02$ ,  $0.79 \pm 0.05$  and  $0.74 \pm 0.05$  kg/kg bird respectively. The maximum dressing weight was in Vencov, followed by Hubbard and the minimum in Croilers. The overall average of dressing weight was 0.78 kg/kg bird. In the third treatment the dressing weight was found to be  $0.78 \pm 0.07$ ,  $0.77 \pm 0.05$  and  $0.73 \pm 0.05$  kg/kg bird in Vencov, Hubbard and Croilers respectively. The highest dressing weight was in Vencov and the lowest in Croilers. The overall average in this treatment was 0.76 kg/kg bird. The average dressing weight in the second treatment was the highest ( $p < 0.01$ ) than other treatments (third and first). The average value of third treatment was also higher ( $p < 0.05$ ) than the value obtained in treatment first treatment.

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