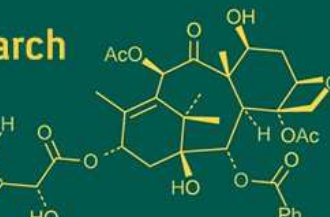
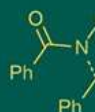
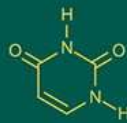
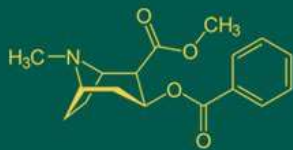


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**Surita Majumder**  
Assistant Professor,  
Department of Animal  
Genetics & Breeding, IVS &  
AH, SOADU, Bhubaneswar,  
Odisha, India

**Vanlalhmangaihsanga**  
Assistant Professor,  
Department of Livestock  
Production Management, IVS  
& AH, SOADU, Bhubaneswar,  
Odisha, India

**Salur Srihitha**  
Assistant Professor,  
Department of Animal  
Nutrition, IVS & AH, SOADU,  
Bhubaneswar, Odisha, India

**Nanda Kumar Roy**  
Assistant Professor,  
Department of Livestock  
Production Management, IVS  
& AH, SOADU, Bhubaneswar,  
Odisha, India

**Samarendra Mohanty**  
Assistant Professor,  
Department of Livestock  
Production Management, IVS  
& AH, SOADU, Bhubaneswar,  
Odisha, India

**Corresponding Author:**  
**Surita Majumder**  
Assistant Professor,  
Department of Animal  
Genetics & Breeding, IVS &  
AH, SOADU, Bhubaneswar,  
Odisha, India

## A comprehensive study on production performance in COBB 430 Y strain of broiler and BV 300 strain layer reared in intensive poultry farm of IVSAH, SOA

**Surita Majumder, Vanlalhmangaihsanga, Salur Srihitha, Nanda Kumar Roy and Samarendra Mohanty**

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### Abstract

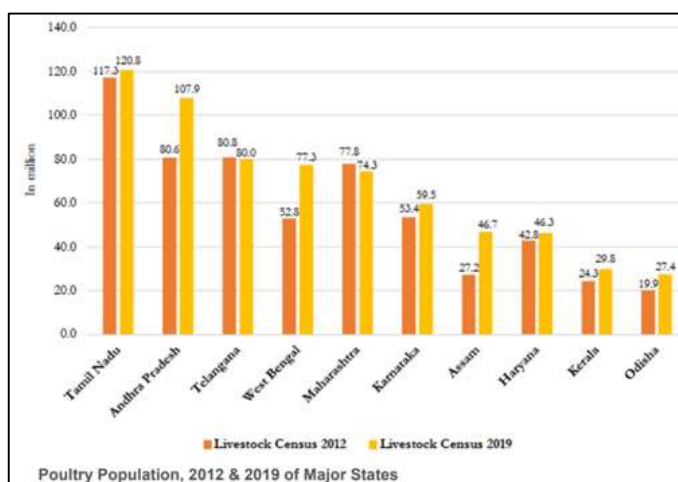
A survey to document the production characteristics of COBB 430 Y broiler and egg recording study to record egg production characteristics of BV 300 strain layer birds were conducted in the LFC farm, IVSAH, SOA. This study was conducted to determine the profitability and performance of commercial broiler and layer strain that was being reared under intensive farming system. The broiler were reared from day one to 35 days and the spent hen layer were reared from 77 weeks to 82 weeks of age following the same pattern of feeding, housing and managerial condition.

**Keywords:** COBB 430 Y strain, broiler, BV 300 strain layer, poultry farm of IVSAH, SOA

### Introduction

As per 2021-22, Odisha Economic Survey, Odisha contains 27.4 million birds and ranks 10<sup>th</sup> in terms of Chicken population (20<sup>th</sup> livestock census, 2019). In India the poultry industry is a well organised sector and is making tremendous growth in the recent years. Factors influencing the growth of poultry sector are modern breeding technologies, advanced managerial practices eco friendly housing methods, advance therapeutics, vaccination, poultry processing units, hatcheries, better feed quantities etc.

If a breeder develops a bird of a specific breed by introduction of any economic traits like egg weight, egg size, laying index, FCR, mortality etc is known as strain. They seem to have arisen out of the product of systematic crosses of a few breeds or variety. Breed refers to an established group of birds/animals having the same general shape, weight and some common characteristics. Variety is a sub-division of a breed distinguishable by feather pattern, colour, and shape and comb type. By nature BV 300 strain of layer are considered as good egg producer and not good brooder (Komolafe *et al.*, 1980) [3].



**Fig 1:** Poultry population in 2012 and 2019 of major states (source 20<sup>th</sup> livestock census)

### Review of literature related with the study

As per the study conducted by Abdullah *et al* in 2010, stated that feed conversion ratio (FCR) of the broiler belonging to the strain Cobb 500 is superior to any other strains. This is owing to the potential of the strain to consume more amount of feed, better weight gain live weight enhanced FCR compared (better efficiency of the bird to convert to meat) to other broiler strain.

As per the study conducted by Smith *et al.*, in the year 1988, higher FCR of the bird is due to heavy body weight and requirement of the bird. Higher intake of feed is determined by several factors such as breed or strain, quality of the feed, feed palatability, age, sex, production stage, climatic and other associated environmental conditions.

As per the study conducted by Sharma *et al.*, in the year 2019, [6] BV-300 layer breeder has exhibited reproductive as well as productive performance according to their stated standard values under Indian agro-climatic conditions.

### Materials and Methods

The present study was carried out under farm condition in

LFC, SOADU to study the production performances of spent hen of Cobb 430 Y broiler (1500 heads) and BV 300 layer (2000 heads) for a period of 35 days and 26 weeks, respectively. All recorded and calculated data were statistically analyzed. A sample of individual 150 birds body weight data was recorded manually using 5 kg weighing machine from the 1500 broiler reared in the farm. COBB 430 Y broilers were reared in deep-litter system and BV-300 layers reared in cage system. Feeds and water were given by manual feeder and waterer to broilers and by automating watering and manual feeding in layer birds. The eggs are collected to the egg tray which is fallen from cage and were collected and stored in egg filler.

Feeds were provided to the birds twice a day *i.e.* in the morning as well as in the evening. Clean water was given to the birds throughout the day. Feeds were being provided to the birds as per their nutrient requirement considering their age and egg production (Reddy *et al.*, 1999) [5]. The standard vaccination schedule was maintained for broilers and layers.



Fig 2: COBB 430 Y Broiler strain



Fig 3: BV 300 layer strain

**Results**

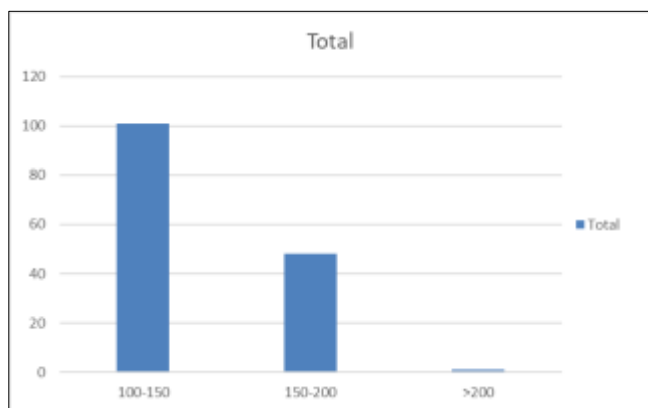
**Growth Performance**

The average weekly body weights of Cobb 430 Y broiler across 5 weeks are shown in Table 1.

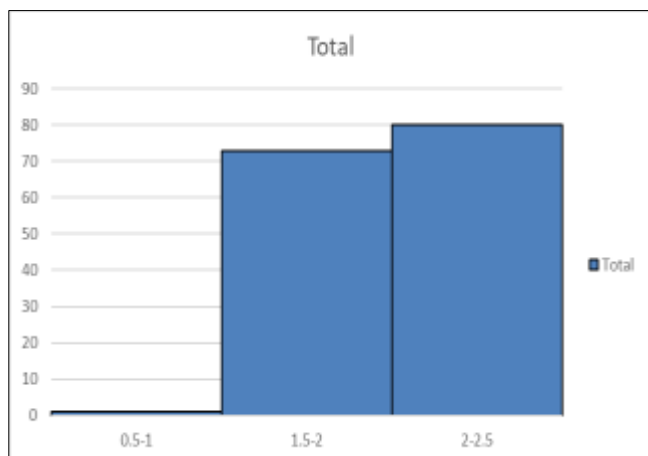
**Table 1:** Average body weight, Average weight gain, FCR

Parameter	Age (week)	Cobb 430 Y
Body Weight. (g)	Int. Week	45.00
	1 <sup>st</sup>	142.92
	2 <sup>nd</sup>	360.48
	3 <sup>rd</sup>	761.33
	4 <sup>th</sup>	1256
	5 <sup>th</sup>	2000
Average weight gain	1 <sup>st</sup>	97.92
	2 <sup>nd</sup>	217.56
	3 <sup>rd</sup>	400.85
	4 <sup>th</sup>	494.67
	5 <sup>th</sup>	744
FCR	1 <sup>st</sup>	1.36
	2 <sup>nd</sup>	1.69
	3 <sup>rd</sup>	1.33
	4 <sup>th</sup>	1.60
	5 <sup>th</sup>	1.55
Average FCR		1.52

The average marketed body weight at the end of rearing period (at 5<sup>th</sup> week) was 2000 g. Average weight gain at the end of rearing period was 744 g. Average weight gain from 1<sup>st</sup> to 5<sup>th</sup> week was 97.92g to 744g. This study depicts higher body weight than Veazaguda chicken at the growth stage of 4<sup>th</sup> week (Mishra *et al.*, 2023) [4]. Overall average FCR during the rearing period was 1.52.



**Fig 4:** Frequency of chick bodyweight in the first week



**Fig 5:** Frequency of broiler body weight in the marketed age

First week frequency diagram depicts that the body weight of the animals are in the range of 100-150 g. Last week frequency diagram indicates that the marketed body weights of the broilers are in the range of 2000-2500 g.

**Table 2:** Production performance of layer

Parameters	
Average daily laying no.	745
Average hen day egg production	77%

The above table 2 shows the production performance of layer. Average egg laid during the rearing period was 745 and the average hen day egg production was calculated 77%. According to Sharma *et al.*, 2019 [6] average hen day production was calculated 79.51% which was higher than this present study.

**Conclusion**

This preliminary study provides a baseline data on performance traits of COBB 430 Y and BV 300 layer. We have achieved the average FCR which was 1.52. Average hen day egg production was calculated 77%. This report is a valuable reference for assessing the poultry farm's performance and guiding future improvements and strategic decisions.

**Acknowledgement**

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