COMPARATIVE STUDY OF FIRST YEAR PRODUCTIVE BEHAVIOUR OF LYALLPUR SILVER BLACK AND WHITE LEGHORN PULLETS.

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The data on egg production, egg weight, feed consumtion, feed efficiency and viability among three groups each of Lyallpur Silver Black and White Leghorn breeds were analyzed. Per cent egg production in White Leghorn was higher (46.63 vs 40.27) than Lyallpur Silver Blacks. White Leghorns laid significantly heavier eggs (57.3 vs 53.1 gms) than their counterparts. The data on feed consumption revealed that Lyallpur Silver Black consumed more feed and was less efficient in feed conversion as compared to White Leghorns. However, birds of Lyallpur Silver Black were more viable than White Leghorn breed.

INTRODUCTION

A newly synthetic poultry breed, namely Lyallpur Silver Black was evolved by incorporating the *desi* (native) fowl in a four way double cross with standard breeds like white Leghorn, white Cornish and New Hampshire. The wide spread distribution of White Leghorn throughout the World and its pre-eminence as a high egg producer have resulted in its being crossed with other breeds to produce a type suited to a particularly ecological niche. White Cornish and New Hapmshire are famous for meat production and hardiness respectively. The *desi* fowl was utilized because of the prime importance of its hardiness and adaptability to the complex of our environmental conditions and better heat tolerance

First generation of Lyallpur Silver Black breed which provides a synthesis of superior attributes of all the four foundation flocks, was compared with *desi* birds previously. The first generation of Lyallpur Blacks was very prolific, but a great deal of research work is needed to perfect this type. Keeping this in view a comparative study of the first year productivs behaviour of Lyallpur Silver Black (2nd generation) and White Leghorn layers was

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conducted at the Poultry Experiment Station of University of Agriculture Lyallpur, in respect of egg production, egg weight, feed consumption, feed conversion and viability.

MATERIALS AND METHODS

This study was conducted on 120 six month old pullets (60 each) of White Leghorn and Lyallpur Silver Black breeds. They were raised at Poultry Experiment Station, University of Agriculture, Lyallpur under similar managemental conditions. The birds of each breed were randomly alloted to three groups (experimental units) of 20 birds each and were randomly housed in open pens of 26'x21' dimensions. Each pen had a wooden poultry house of 6'x4'x1½' dimensions for housing the birds at night. Feeding and watering was provided under the shade of mulberry trees during the day time. All the experimental birds were given Lever' Layer Mash *ad libitum* throughout the experimental period of 32 weeks extending from October to May. This duration was divided into eight periods of four weeks each for analysis of data. Records of daily egg production per group was used to calculate per cent production. Feed consumption per group and egg weights were recorded weekly. Feed efficiency was determined as the pounds of feed required to produce one dozen of eggs. The records of mortality were also kept. Four weekly totals were subjected to analysis of variance to find out the significance of differences between two breeds and eight periods.

RESULTS AND DISCUSSION

The data collected on egg production, feed consumption, feed efficiency, egg weight and viability of birds over an experimental period have been summarized in table 1. The three groups of Lyallpur Silver Black birds produced 40.29, 43.86 and 36.60 per cent eggs while that of White Leghorn produced 48.84, 49.39 and 41.65 per cent. It is evident that birds of White Leghorn on the average produced 6.36 per cent more eggs than Lyallpur Silver Blacks (46.63 vs 40.27). These findings agree with those reported by Meregalli (1956) who crossed Arno birds with White Leghorns and observed the progeny to be superior in egg production than the native breed. However, their production was less as compared to White Leghorns. The difference in mean egg production between the two breeds was significant at one per cent level (Table 2). There was also significant difference in egg production recorded among different 4 weekly periods. The average weight of eggs from White Leghorn layers was heavier than Lyallpur Silver Blacks (57.6 vs 53.1 gms). The data revealed that the breed had exerted highly significant

influence on the egg weight. Similar observations were recorded by Fomin (1961) and Sabalina (1963) who stated that crossbreeding improved significantly the egg weight of native poultry breeds when they were crossed with superior exotic breeds.

TABLE 1. *Summary of average egg production, Feed Consumption, Feed Efficiency and Viability.*

Trait	Lyallpur Silver Black			White Leghorn		
	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
Average number of birds	20	20	19.18	18.85	19.85	20
Total number of eggs produced	1805	1965	1573	2062	2197	1866
Average number of eggs per bird	90.25	98.25	82.01	109.38	110.86	93.30
Average production	40.29	43.86	36.66	48.83	49.39	41.65
Average weekly weight of an egg (gms)	53.3	53.3	52.5	57.9	57.6	57.3
Average weekly feed consumption per bird (lbs)	1.84	1.80	1.95	1.72	1.72	1.75
Average amount of feed required to produce one dozen of eggs (lbs)	7.78	7.02	9.14	6.04	5.97	7.20
Average viability %	100	100	90	90	90	100

TABLE 2. *Analysis of Variance of production Trait in White Leghorn and Lyallpur Silver Black Breeds.*

Source of variation	D.F.	Mean square of			
		Egg production	Egg weight	Feed consumption	Feed efficiency
Breed	1	35.58**	225.55**	2.03**	53.78**
Period	7	32.15**	49.46**	0.55**	20.54**
Breedxperiod	7	14.86**	0.49NS	0.09	1.63NS
Error	32	2.10	0.51	0.04	1.34

NS = Non significant.
* = Significant at five per cent level.
** = Signafficant at one per cent level.

The amount of feed cunsumed by White Leghorns was less than Lyallpur Silver Blacks being 1.73 and 1.86 pounds per bird per week respectively. The average amount of feed consumed per hen per week by three groups of Lyallpur Silver Black was 1.84, 1.80 and 1.95 pound while that of White Leghorns was 1.72, 1.72 and 1.75 pounds. These differences between two breeds and eight periods under study were highly significant.

The pounds of feed required by the groups of Lyallpur Silver Black to produce one dozen of eggs was 7.78, 7.02 and 9.14 pounds when the groups of White Leghorns consumed 6.04, 5.97 and 7.20 pound. This indicated that birds of Lyallpur Silver Black consumed 1.40 pounds more feed for production of one dozen eggs as compared to White Leghorns. These results are in agreement whith those reported by Sabalina (1963) who observed better feed consumption and feed conversion in crossbreds in comparison with native breeds.

Better viability was noticed on the average in Lyallpur Silver Black breed against White Leghorns (96.66 vs 95.00). Higher mortality in White Leghorns was due to beukosis and possibly due to production stress. These results are also in line with Sabalina (1963).

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