

## Comparative Growth Performance in Four Varieties of Native Aseel Chickens Maintained in Pakistan

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**Abstract.-** The present study was conducted to investigate the growth performance in four varieties of native Aseel Chicken. For this purpose, 96 day-old Aseel chicks, 24 each of 4 different varieties viz. Peshawari, Mianwali, Mushki and Lakha were maintained at Indigenous Chicken Genetic Resource Center, Department Poultry Production, University of Veterinary and Animal Sciences, Lahore Ravi Campus, Pattoki. The experimental birds were kept in cages and placed in a well-ventilated open sided poultry house under similar management conditions up to 15 weeks of age. The birds had free access to clean and fresh drinking water through drinking nipples provided natural day light and were fed a broiler ration *ad libitum* according to NRC standards. Data were analyzed by ANOVA technique and means were compared by using DMR Test. The results showed that the average body weight (g) in four varieties of Aseel differed significantly ( $P<0.05$ ) at 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 10<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup> and 15 weeks of age. Weekly body weight gain (g) in four varieties of Aseel differed significantly ( $P<0.05$ ) at 4<sup>th</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> weeks of age. Weekly times of weight gain differed significantly ( $P<0.05$ ) at 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> weeks of age. FCR in four varieties of Aseel differed significantly ( $P<0.05$ ) at 1<sup>st</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> weeks of age. The weekly mean feed intake (g) in four varieties of Aseel differed significantly ( $P<0.05$ ) during the entire experimental period. Based on the findings of this study it may be stated that Mushki variety of Aseel exhibited better growth rate and FCR than three other varieties, therefore, it may be considered for future breeding programs.

**Key words:** Aseel, varieties, body weight, weight gain, times of weight gain, feed intake and FCR.

### INTRODUCTION

**T**raditional backyard poultry keeping is in practice since time immemorial. Backyard poultry keeping is an important economic activity carried out by almost 80 percent families in rural areas of Pakistan (Anonymous, 2003) and contributing about 12.76 and 29.23 percent, respectively, of the total poultry meat and eggs produced in the country (Anonymous, 2012). In most of the developing countries, indigenous poultry genotypes constitute about 80 to 99 percent of the total poultry

populations maintained in villages (Sonaiya and Swan, 2004). The small flocks maintained in Pakistan mainly comprise of native breeds like Desi (non-descript native chicken), Aseel, naked neck, Lyallpur silver black (LSB) (a breed evolved at University of Agriculture, Faisalabad few decades back) and other exotic breeds such as Fayoumi and Rhode Island Red. Among these, Aseel bears historic importance being native to this country and used in development of many breeds such as Cornish (Dohner, 2001) and CARI-Nirbheek and CARI-Shyama of India (ICAR, 2004).

Rural poultry production is an important sub sector of poultry production in the country, however, very little attention has been paid given to our indigenous poultry which possesses better

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disease resistance and adaptability to the local rigorous environmental conditions than the imported commercial strains of chickens. Aseel breed of chicken is considered to be one of the principal ancestors of "Indian Game" originated in Cornwall and is one of the oldest of game fowls of Asia, a handsome, sprightly and shapely bird with an upright and majestic gait and bred for its highly valued meat superior in taste and texture. This breed is close to extinction and is presently being used mainly for cock-fighting (Bhatti *et al.*, 1991; Khan, 2004; Rao and Preetem, 2009; Anonymous, 2009). The main emphasis has remained on importing and propagating the exotic poultry breeds and little attention was paid towards development/improvement of indigenous chickens. By propagating foreign breeds in our villages and their unchecked mating with the local/indigenous breeds, the pure indigenous germplasm is being depleted rapidly. In this way an excellent genetic resource, if not conserved now, will be destroyed forever. Still some specimen of local breeds like Aseel, Desi and Lyaipur Silver Black are available. Proper conservation and propagation of these local breeds may prove a useful genetic resource for better productive efficiency in terms of egg and meat production.

The basic information about important economic traits of growth performance in different varieties of Aseel is not available. With this background, the present study was undertaken to investigate 15 weeks growth performance of four indigenous varieties of indigenous Aseel breed.

## MATERIALS AND METHODS

The present study of 15 weeks of duration was undertaken at Indigenous Chicken Genetic Resource Center, Department of Poultry Production, University of Veterinary and Animal Sciences Lahore, Ravi Campus, Pattoki to evaluate the comparative growth performance of four varieties of native Aseel, namely, Peshawari (basic origin is Peshawar, Pakistan. Dark brown neck with light brown plumage color, pea-comb. White circles in plumage), Mianwali (basic origin is Mianwali, Pakistan. Bluish black plumage color. Black circles in the plumage. Pea comb. Small in height. Most

aggressive among all local varieties), Mushki (dark black plumage color. Pea comb. Known as "Siyah" created by the Nawab (ruler) of Rampur, white eyes and white shanks, spurs and nails) and Lakha (commonly known as Cheena. White dots on the head and plumage color. Pea-comb.) during the starting and growing phases (Ahmad, 2013).

For this purpose a total of 96 day-old chicks, 24 from each of the four varieties were randomly picked up from the available stock. The experimental birds in each variety were divided in to three experimental units/replicates, each comprising eight birds. They were initially weighed and individually tagged for identification and were housed in 12 different cages (each measuring 3 x 2 feet) placed in a well-ventilated open sided poultry house under similar management conditions up to 15 weeks of age. The birds had free access to clean and fresh drinking water through drinking nipples and were provided only natural day light. The experimental birds were fed a balanced ration, formulated according to NRC (1994) standards and recommendations made by Summers and Leeson (2005) for broiler breeder 1 and breeder 2 diets. The growth performance in terms of weekly body weight (g), weight gain (g), times of weight gain, feed intake (g) and feed conversion ratio (FCR) of the different varieties of Aseel birds were studied. The following data were obtained during the experimental period.

### Statistical analysis

The experiment was conducted according to completely randomized design (CRD) and data thus collected were analyzed using analysis of variance (ANOVA) techniques (Steel *et al.*, 1997) using SAS, 9.1, (2002-03) portable software, assuming following mathematical model:

$$Y_{ij} = \mu + S_i + \epsilon_{ij}$$

Where, Y, each observation;  $\mu$ , Population mean;  $S_i$ , Effect of the treatment;  $\epsilon_{ij}$ , Random error.

The comparisons of means were made using Duncan's Multiple Range (DMR) test (Duncan, 1955).

## RESULTS

### Body weight

The average body weight (g) in four varieties

of Aseel was observed to be significantly differed ( $P<0.05$ ) at 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 10<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup> and 15 weeks of age (Table I). The maximum mean body weights were observed in Mushki on 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 10<sup>th</sup> weeks ( $229.6\pm 7.24$ g), ( $315.62\pm 11.34$ g), ( $408.96\pm 15.7$ g), ( $522.5\pm 16.64$ g), ( $839.2\pm 24.2$ g), respectively, and minimum in the same weeks in Lakha variety ( $202.5\pm 4.29$  g), ( $269.2\pm 6.64$  g), ( $356.5\pm 11.20$  g), ( $462.08\pm 16.52$ g), ( $815.4\pm 26.94$ g), respectively. During 13<sup>th</sup>, 14<sup>th</sup> and 15<sup>th</sup> weeks, maximum body weight was observed in Lakha ( $1202.22\pm 32.8$ g), ( $1304.2\pm 37.8$ g) ( $1400.3\pm 43.5$ g), respectively, however, Peshawari variety showed the minimum body weight ( $1071.9\pm 31.3$ g), ( $1167.5\pm 36.1$ g), ( $1249.7\pm 36.7$ g), respectively on 13<sup>th</sup>, 14<sup>th</sup> and 15<sup>th</sup> weeks.

#### Weekly weight gain

The average weekly body weight gain (g) in four varieties of Aseel was found to be significantly differed ( $P<0.05$ ) at 4<sup>th</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> weeks of age (Table II). The maximum weekly body weight gain at 4<sup>th</sup> and 5<sup>th</sup> weeks was recorded in Mushki ( $78.54\pm 3.65$  and  $86.04\pm 4.98$ g) and minimum was in Lakha ( $58.54\pm 2.34$  and  $66.7\pm 3.1$ g). In 8<sup>th</sup> and 9<sup>th</sup> weeks, maximum body weight gain was observed in Mianwali variety, ( $114.2\pm 5.45$  and  $112.92\pm 6.05$ g) respectively, whereas, the minimum ( $90.42\pm 4.61$ g and  $94.2\pm 4.6$ g) was in Peshawari. Lakha and Peshawari had the maximum ( $134.37\pm 5.35$ g) and minimum ( $100.42\pm 7.2$ g) body weight gain (g) at 10<sup>th</sup> week.

The average weekly times of weight gain in four varieties of Aseel was significantly differed ( $P<0.05$ ) at 3<sup>rd</sup>, 4<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> weeks of age (Table III). The mean weekly times of weight gain was observed to be maximum ( $1.56\pm 0.02$ ) in Peshawari and minimum ( $1.48\pm 0.03$ ) in Lakha at 3<sup>rd</sup> week. In 4<sup>th</sup> week, maximum ( $1.52\pm 0.02$ ) times weekly weight gain was recorded in Mushki and minimum ( $1.41\pm 0.02$ ) in Lakha variety. At 8<sup>th</sup> weeks of age, Mianwali and Mushki varieties had the maximum ( $1.239 \pm 0.01$ ) and minimum ( $1.19\pm 0.01$ ) weekly times of weight gain. At 9<sup>th</sup> and 10<sup>th</sup> weeks, Lakha variety had the maximum weekly times of weight gain ( $1.192\pm 0.01$  and  $1.20\pm 0.01$ ) while, Mushki ( $1.156\pm 0.01$ ) and Peshawari varieties had the minimum ( $1.160\pm 0.01$ ) weekly times of weight

gain.

#### Feed intake

The average feed intake (g) in four varieties of Aseel differed significantly ( $P<0.05$ ) during 1<sup>st</sup> to 15th weeks of age (Table IV). The maximum feed intake ( $598.72\pm 3.17$ ,  $531.85\pm 7.56$ ,  $565.39\pm 4.28$ g) respectively, were recorded in Lakha, Mianwali and Peshawari varieties at week-12 and minimum ( $99.40\pm 0.60$ ,  $102.66\pm 0.60$ ,  $105.42\pm 0.59$ g) at week-1. However, Mushki variety had maximum feed intake ( $522.2\pm 2.67$ g) at week-15 and minimum ( $97.19\pm 0.30$ g) also at week-1.

#### Feed conversion ratio (FCR)

The average FCR in four varieties of Aseel differed significantly ( $P<0.05$ ) at 1<sup>st</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 11<sup>th</sup> weeks of age (Table V). The higher mean FCR ( $6.52\pm 0.66$  and  $6.62\pm 0.43$ ) were observed in Lakha and Mianwali varieties at week-13. However, Mushki and Peshawari had higher mean FCR ( $6.54\pm 0.6$  and  $7.70\pm 3.4$ ) at week-2 and 7, while lower mean FCR ( $3.1\pm 0.16$ ,  $2.96\pm 0.2$ ,  $2.91\pm 0.13$ ,  $3.7\pm 0.32$ ), respectively were recorded at week-1 in Lakha, Mianwali, Mushki and Peshawari, varieties.

## DISCUSSION

The findings of the present study indicated that the mean body weight (g) of four varieties of Aseel differed significantly ( $P<0.05$ ) at 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 10<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup> and 15 weeks of age. The results of this study showing significant ( $P<0.05$ ) differences in body weight in different varieties of Aseel during different age are in close conformity with the earlier findings of Singh *et al.* (1999) who reported higher weights at day-old in Aseel ( $33\pm 0.30$ g) and Naked neck ( $34\pm 0.36$ g) chicks under farm conditions, whereas, Chatterjee *et al.* (2002) reported lower body weights in Nicobari fowl at 4 weeks of age under backyard ( $53\pm 1.41$ g) and intensive system ( $74\pm 2.32$ g). In contrary to their findings, Mishra (1983) reported higher body weights at 0, 1, 2, 3 and 4 weeks of age ( $29\pm 0.26$ g,  $37\pm 0.38$ g,  $58\pm 1.00$ g,  $83\pm 1.69$ g and  $123\pm 2.47$ g) respectively, in Kadaknath breed under farm conditions.

The average body weights of Aseel at 6, 8, 10

**Table I.- Weekly body weight (g) of four varieties of Aseel for 15 weeks of age (Mean  $\pm$ SEM).**

Varieties	Week-0	Week-1	Week-4	Week-8	Week-12	Week-15
Lakha (n= 24)	30.83 $\pm$ 0.6 <sup>a</sup>	65.0 $\pm$ 1.65 <sup>ab</sup>	202.5 $\pm$ 4.29 <sup>b</sup>	570.6 $\pm$ 20.25 <sup>ab</sup>	1062.50 $\pm$ 34.1 <sup>ab</sup>	1400.3 $\pm$ 43.5 <sup>a</sup>
Mianwali (n= 24)	30.66 $\pm$ 0.51 <sup>a</sup>	67.29 $\pm$ 1.50 <sup>a</sup>	219.79 $\pm$ 5.6 <sup>ab</sup>	596.25 $\pm$ 15.7 <sup>ab</sup>	1074.2 $\pm$ 25.42 <sup>ab</sup>	1368.1 $\pm$ 33.6 <sup>a</sup>
Mushki (n= 24)	30.75 $\pm$ 0.41 <sup>a</sup>	65.62 $\pm$ 1.4 <sup>ab</sup>	229.6 $\pm$ 7.24 <sup>a</sup>	619.2 $\pm$ 18.6 <sup>a</sup>	1088.3 $\pm$ 30.22 <sup>a</sup>	1377.5 $\pm$ 44.5 <sup>a</sup>
Peshawari (n=24)	29.9 $\pm$ 0.6 <sup>a</sup>	61.7 $\pm$ 1.72 <sup>b</sup>	210.6 $\pm$ 5.9 <sup>b</sup>	556.25 $\pm$ 17.5 <sup>b</sup>	997.3 $\pm$ 23.9 <sup>b</sup>	1249.7 $\pm$ 36.7 <sup>b</sup>

Means with same superscripts in a column do not differed significantly ( $P<0.05$ )

**Table II.- Body weight gain (g) into reference to previous in the four varieties of Aseel for 15 weeks of age (Mean  $\pm$ SEM).**

Varieties	Week-1	Week-4	Week-8	Week-12	Week-15
Lakha (n= 24)	34.2 $\pm$ 1.57 <sup>a</sup>	58.54 $\pm$ 2.34 <sup>b</sup>	108.54 $\pm$ 6.5 <sup>ab</sup>	127.3 $\pm$ 10.01 <sup>a</sup>	96.1 $\pm$ 11.99 <sup>a</sup>
Mianwali (n= 24)	36.62 $\pm$ 1.6 <sup>a</sup>	64.8 $\pm$ 3.3 <sup>b</sup>	114.2 $\pm$ 5.45 <sup>a</sup>	114.6 $\pm$ 6.2 <sup>a</sup>	93.05 $\pm$ 7.3 <sup>a</sup>
Mushki (n= 24)	34.87 $\pm$ 1.41 <sup>a</sup>	78.54 $\pm$ 3.65 <sup>a</sup>	96.7 $\pm$ 5.41 <sup>bc</sup>	122.71 $\pm$ 5.8 <sup>a</sup>	96.9 $\pm$ 10.35 <sup>a</sup>
Peshawari (n= 24)	31.75 $\pm$ 1.83 <sup>a</sup>	62.50 $\pm$ 3.1 <sup>b</sup>	90.42 $\pm$ 4.61 <sup>c</sup>	119.8 $\pm$ 5.85 <sup>a</sup>	82.2 $\pm$ 3.5 <sup>a</sup>

Means with same superscripts in a column do not differ significantly ( $P<0.05$ )

**Table III.- Body weight gain in terms of fold increase with reference to previous week in the four varieties of Aseel for 15 weeks of age (Mean  $\pm$ SEM).**

Varieties	Week-1	Week-4	Week-8	Week-12	Week-15
Lakha (n= 24)	2.12 $\pm$ 0.1 <sup>a</sup>	1.41 $\pm$ 0.02 <sup>b</sup>	1.237 $\pm$ 0.01 <sup>a</sup>	1.13 $\pm$ 0.01 <sup>a</sup>	1.07 $\pm$ 0.01 <sup>a</sup>
Mianwali (n= 24)	2.21 $\pm$ 0.06 <sup>a</sup>	1.42 $\pm$ 0.02 <sup>b</sup>	1.239 $\pm$ 0.01 <sup>a</sup>	1.12 $\pm$ 0.01 <sup>a</sup>	1.07 $\pm$ 0.005 <sup>a</sup>
Mushki (n= 24)	2.14 $\pm$ 0.05 <sup>a</sup>	1.52 $\pm$ 0.02 <sup>a</sup>	1.19 $\pm$ 0.01 <sup>b</sup>	1.13 $\pm$ 0.01 <sup>a</sup>	1.07 $\pm$ 0.01 <sup>a</sup>
Peshawari (n= 24)	2.08 $\pm$ 0.07 <sup>a</sup>	1.43 $\pm$ 0.02 <sup>b</sup>	1.20 $\pm$ 0.01 <sup>b</sup>	1.13 $\pm$ 0.005 <sup>a</sup>	1.07 $\pm$ 0.003 <sup>a</sup>

Means with same superscripts in a column do not differed significantly ( $P<0.05$ )

**Table IV. Feed Intake (g) period by four varieties of Aseel from 1 to 15 weeks of age (Mean  $\pm$ SEM).**

Varieties	Week-1	Week-4	Week-8	Week-12	Week-15
Lakha (n= 24)	99.40 $\pm$ 0.60c	291.77 $\pm$ 2.90a	465.91 $\pm$ 9.46a	598.72 $\pm$ 3.17a	530.9 $\pm$ 1.77a
Mianwali (n= 24)	102.66 $\pm$ 0.60b	286.69 $\pm$ 0.43ab	398.36 $\pm$ 4.43c	531.85 $\pm$ 7.56c	526.2 $\pm$ 2.31ab
Mushki (n= 24)	97.19 $\pm$ 0.30d	275.16 $\pm$ 2.07c	381.82 $\pm$ 5.34c	507.71 $\pm$ 5.68d	522.2 $\pm$ 2.67b
Peshawari (n= 24)	105.42 $\pm$ 0.59a	285.94 $\pm$ 1.52b	437.68 $\pm$ 5.98b	565.39 $\pm$ 4.28b	523.2 $\pm$ 2.34b

Means with same superscripts in a column do not differ significantly ( $P<0.05$ )

**Table V.- FCR in four varieties of Aseel from 1 to 15 weeks of age (Mean  $\pm$ SEM).**

Varieties	Week-1	Week-4	Week-8	Week-12	Week-15
Lakha (n= 24)	3.1 $\pm$ 0.16 <sup>b</sup>	5.2 $\pm$ 0.23 <sup>a</sup>	4.92 $\pm$ 0.5 <sup>a</sup>	5.5 $\pm$ 0.46 <sup>a</sup>	5.96 $\pm$ 0.45 <sup>a</sup>
Mianwali (n= 24)	2.96 $\pm$ 0.2 <sup>b</sup>	4.74 $\pm$ 0.3 <sup>a</sup>	3.73 $\pm$ 0.25 <sup>b</sup>	4.95 $\pm$ 0.3 <sup>ab</sup>	6.2 $\pm$ 0.43 <sup>a</sup>
Mushki (n= 24)	2.91 $\pm$ 0.13 <sup>b</sup>	3.84 $\pm$ 0.36 <sup>b</sup>	4.23 $\pm$ 0.25 <sup>ab</sup>	4.4 $\pm$ 0.3 <sup>b</sup>	6.30 $\pm$ 0.53 <sup>a</sup>
Peshawari (n= 24)	3.7 $\pm$ 0.32 <sup>a</sup>	4.9 $\pm$ 0.3 <sup>a</sup>	5.15 $\pm$ 0.30 <sup>a</sup>	5.00 $\pm$ 0.3 <sup>ab</sup>	6.55 $\pm$ 0.3 <sup>a</sup>

Means with same superscripts in a column do not differ significantly ( $P<0.05$ )

and 12 weeks of age recorded in the present study are higher than those early reported by Mishra (1983) ( $249\pm 4.03\text{g}$ ,  $397\pm 5.23\text{g}$ ,  $555\pm 6.96\text{g}$  and  $754\pm 4.72\text{g}$ , respectively), in Kadaknath breed. Whereas, Singh and Singh (1998) also reported body weight as 250g at 8 weeks of age in Kadaknath breed. Singh *et al.* (1999) reported body weight as 552g at 10 weeks of age in Aseel, whereas, Chatterjee *et al.* (2002) reported lower body weight as  $112\pm 2.45\text{g}$  and  $117\pm 3.64\text{g}$ ,  $183\pm 5.11\text{g}$  and  $222\pm 12.60\text{g}$ , and  $230\pm 8.54\text{g}$  and  $342\pm 6.82\text{g}$ , respectively, at, 6, 8 and 10 weeks of age in Nicobari fowl. The body weight of Aseel at different ages were higher than Kadaknath breed (Chatterjee *et al.*, 2002; Singh and Singh, 2004; Thakur *et al.*, 2006; Anonymous, 2006; Chatterjee *et al.*, 2007), which might be due to difference of genetic makeup of Kadaknath and Aseel, due to large body size of Aseel as compared to Kadaknath (Sharma and Chatterjee, 2006). Similarly many other workers also described the significant effect of genetic group on body weight of chicken at different ages (Mohammed *et al.*, 2005; Devi and Reddy, 2005; Chatterjee *et al.*, 2007).

The average weekly mean body weight gain (g) in four varieties of Aseel significantly ( $P<0.05$ ) differed at 4<sup>th</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> weeks of age during this study. The findings of present study are in line with those of Singh *et al.* (2003) who reported body weight gain of Kadaknath was the highest between 8 to 12 weeks of age, which indicated the gain in body weight of Aseel was still better at older ages. The highest gain in body weight at 15<sup>th</sup> week of age in both Kadaknath and Aseel was also reported. Sahota and Bhatti (2001) observed lower body weight gain in Desi birds in comparison to Rhode Island Red and White Leghorn chicks at 8 weeks of age. The difference in growth rate of different breeds of chickens could be attributed to interplay of multiple genes which could be improved through genetic selection (Chambers, 1990). The results of this study showing variation in body weight gain among different varieties of Aseel are also in agreement with those of Yakubu *et al.* (2006) who reported strain variation ( $P<0.05$ ) in body weight gain in broilers at the age of 4-week. The similar strain variation in body weight gain in Japanese quail at different ages has also been

indicated by Jatoi (2012).

The weekly mean feed intake (g) in four varieties of Aseel differed significantly ( $P<0.05$ ) during entire experimental period. These results are in line with those of Mahmood *et al.* (1984) who indicated that Fayoumi birds exhibited significantly higher feed intake and lowered feed efficiency than recorded in Lyallpur Silver Black breed. Similar findings was also recorded by Iqbal *et al.* (2012) who reported a significant difference in daily feed intake of the four varieties of native Aseel chicken during week-3 ( $P = 0.0081$ ) and week-4 ( $P = 0.0336$ ). On an overall basis, daily feed intake per bird (Mean $\pm$ S.D.) remained  $77.5\pm 13.5\text{g}$  for Lakha,  $81.8\pm 10.9\text{g}$  for Peshawari,  $68.5\pm 7.5\text{g}$  for Mushki and  $59.1\pm 15.0\text{g}$  for Mianwali Aseel. The results of this study showing variation in feed intake among different varieties of Aseel are in agreement with those of Joya *et al.* (1979); Proudfoot and Hulan (1987); Leeson *et al.* (1997); Jatoi (2012) who reported significant strain variation on feed intake in chicken and Japanese quail. Similarly, earlier findings also report significant effect of genotype on feed intake. Scheideler *et al.* (1998) found significant differences in feed intake among Dekalb Delta, Babcock B-300 and Hy-Line W-36. Similarly, Gunawardana *et al.* (2009) found significant differences in seven commercial leghorn strains and Singh *et al.* (2009) found significant difference in Lohmann White, H&N White, Lohmann Brown and noncommercial cross between RIR and Barred Plymouth Rock.

The results of this study showed that the mean FCR in four varieties of Aseel differed significantly ( $P<0.05$ ) at 1<sup>st</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> weeks of age. The findings are supported by those of Jain and Chaudhry (1985), who indicated significantly different FCR in White Leghorn, Rhode Island Red and Desi breeds. Similarly, Khantaprab and Tarachai (1998) reported that feed conversion ratio (FCR) in 8 weeks-old ducks were significantly ( $P>0.05$ ) different between breeds. Hassan *et al.* (1962), observed better feed efficiency in Rhode Island Red than Fayoumi breed, whereas, poor feed efficiency in LSB has also been observed by Ahmad *et al.* (1972). Bokhari and Chaudhry (1972) reported less feed consumption in White Leghorn than Lyallpur Silver Black. The difference

in FCR between different breeds of chickens could be attributed to genetic variation between different breeds (Chambers, 1990).

### CONCLUSIONS

The results of the present study show better growth performance in Lakha, Mianwali and Mushki varieties than Peshawari variety of native Aseel, however, the first three varieties differed non-significant. Mushki variety exhibited better feed conversion efficiency than other three varieties. Based on the findings of the present study, it may be stated that Mushki variety of Aseel possessed better growth performance; therefore, it may be considered for future breed improvement programs.

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