Productivity of crossbred Large White Yorkshire Pigs (SVVU-T17)

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Abstract

Data recorded on productive (4011 records) traits of 75% crossbred Large White Yorkshire (SVVU-T17) Pigs from 2005 to 2020 (16 years) at All India Coordinated Research Project (ICAR-AICRP) on pigs, Tirupati, Chittoor district, Andhra Pradesh were utilized for the present study. The overall least squares mean body weights were 1.09 ± 0.003, 1.54±0.004, 2.78±0.009, 4.11±0.013, 5.44±0.017, 6.38±0.017, 7.38±0.02, 8.48±0.024, 9.85±0.03, 14.5, 7±0.06, 20.49±0.09, 29.13±0.13 and 35.94 ± 0.17 kg at birth (BW0), BW1, BW2, BW3, BW4, BW5, BW6, BW7, BW8, BW12, BW16, BW20 and BW24 weeks of age, respectively. Period, Season of birth and inbreeding had significant influence ($P<0.05$) on body weights at all ages. Parity had significant influence on body weights at birth (BW0), BW7, BW8 and BW12 weeks of age only. Sex of the piglet had significant influence on body weights at birth (BW0), BW1, BW2, BW3 and BW4 weeks of age only. Body weights of piglets born in rainy and winter seasons recorded significantly higher body weights.

Key words: Cross bred Large White Yorkshire; Least squares mean; Parity; Pig

Introduction

Pig rearing is increasing as a source of main as well as secondary income generation for farmers in both tribal hilly tract (Muhindro Singh, 2023) as well as plains (Borah et al 2022, Nachare et al 2024). Majority of pig population (about 80 percent) in India is of Indigenous pigs with low productivity and better adaptability to the primitive level of management. The superior germplasm of improved exotic pig breeds like Large White Yorkshire (LWY), Landrace, Duroc, Tamworth and Hampshire were introduced in our country to improve the productivity of indigenous pigs through crossbreeding/grading up. Cross breeding is a useful tool for increasing the efficiency of swine production in the country. Among all the exotic breeds, Large White Yorkshire (LWY) is the most commonly used breed in crossbreeding programmes in various parts of country because of its inherent superior traits viz., faster growth, high prolificacy, larger litter size ~~(Jayarajan 1985),~~ efficient mothering ability, economic feed conversion efficiency and shorter generation interval. Crossbreeding with exotic breeds has been initiated under the aegis of All India Coordinated Research Project on Pigs for last few decades to augment the production levels of indigenous pigs. Performance of the crossbred pigs under local agro climatic conditions needs to be assessed periodically. Hence, the present study was undertaken to assess the productive performance of farm bred 75% crossbred LWY Pigs.

Materials and Methods

The present investigation was carried out on farm bred 75% crossbred LWY Pigs (SVVU-T17), maintained at the All India Coordinated Research Project on pigs, Tirupati, Chittoor district, Andhra Pradesh. The data on 4011 production records (from 2005 to 2020) were utilized to assess the effect of various genetic and non-genetic factors including inbreeding on productive traits. Genetic parameters and correlations were estimated for the traits under study. The production traits studied were body weights at birth (BW0), BW1, BW2, BW3, BW4, BW5, BW6, BW7, BW8, BW12, BW16, BW20 and BW24 weeks of age.

Productive traits

The Productive traits studied were

➢ Birth weight: Body weight of individual piglet at birth in kg (BW0)

➢ Weaning weight: Body weight of individual piglet at weaning i.e. 56 days (8 weeks) of age in kg (BW8)

➢ Pre weaning weekly body weights from first week to seventh week of age (BW1, BW2, BW3, BW4, BW5, BW6 and BW7) and post weaning monthly body weights from 8 to 24 weeks of age i.e. body weights at 12 (BW12), 16 (BW16), 20 (BW20) and 24 (BW24) weeks of age Period of birth, season of birth, sex of piglet, parity and inbreeding were considered as fixed effects for all production traits.

Statistical models

Productive traits

$Y_{ijklmn} = \mu + P_i + Q_j + R_k + S_l + T_m + e_{ijklmn}$

Where,

Y_{ijklmn} = Observation on the trait of the nth animal belonging to i^{th} period of birth, j^{th} season of birth, k^{th}sex, l^{th} parity of birth, mth inbreeding class

μ = Overall mean

P_i = Effect of i^{th} period of birth (i = 1 to 4)

(P1 = 2005 to 2008, P2 = 2009 to 2012, P3 = 2013 to 2016 and P4 = 2017 to 2020)

Q_j = Effect of j^{th} season of birth (j = 1 to 3)

(S1= March to June, S2= July to October, S3= November to February)

R_k = Effect of ^{kth} sex of piglet (k = 1 to 2)(Male: 1, Female: 2)

S_l = Effect of l^{th} parity of its dam at farrowing (l= 1 to 2)

T_m = Effect of m^{th}inbreeding class (m= 1 to 3; G1= Fx=0, G2= Fx= 0 to 3, G3= Fx =>3.0)

e^{ijklmn}= Random errors associated with each observation, NID (0, σ2e)

Results and Discussion

The results obtained from the analysis of data on the production traits in 75% LWY crossbred (SVVU-T17) pigs maintained at ICAR-AICRP on Pigs, Tirupati revealed significant effect of
Period and season of birth on bodyweights at all ages.

Productive Traits

Body weights

The overall least squares means for body weights at birth (BW0), BW1, BW2, BW3, BW4, BW5, BW6, BW7, BW8, BW12, BW16, BW20 and BW24 weeks of age were 1.09 ± 0.003, 1.54 ± 0.004, 2.78 ± 0.009, 4.11± 0.013, 5.44 ± 0.017, 6.38±0.017,7.38±0.020, 8.48±0.024, 9.85±0.033, 14.57±0.06, 20.49±0.09, 29.13±0.13 and 35.94±0.17 kg, respectively (Table 1).The mean body weights recorded in the present study are in well agreement with the findings of Reddy et al., 2013; Chaudhary et al., 2020 in Crossbred LWY pigs, but lower than the means

Table 1. Descriptive Statistics of Productive in 75% Crossbred Large White Yorkshire Pigs

Trait	N	Range	Mean ± S.E.	Variance	SD	CV (%)
BW0	4011	0.69 (0.51 to 1.20)	1.09 ± 0.002	0.017	0.133	12.16
BW1	4011	2.31 (0.67 to 2.98)	1.54 ± 0.004	0.079	0.281	18.23
BW2	4011	2.60 (2.70 to 5.30)	2.80 ± 0.008	0.273	0.523	18.64
BW3	4011	4.10 (3.10 to 7.20)	4.13 ± 0.011	0.564	0.751	18.16
BW4	4009	5.60 (4.20 to 9.80)	5.47 ± 0.016	1.031	1.051	18.54
BW5	3956	6.90 (5.70 to 12.60)	6.36 ± 0.015	0.924	0.961	15.09
BW6	3956	7.30 (5.90 to 13.200	7.31 ± 0.017	1.163	1.078	14.73
BW7	3948	8.40 (8.00 to 16.40)	8.38 ± 0.020	1.621	1.273	15.18
BW8	3902	9.40 (9.40 to 18.80)	9.74 ± 0.028	3.271	1.808	18.56
BW12	3244	14.60 (17.40 to 32.00)	14.37 ± 0.052	8.99	2.999	20.87
BW16	2781	19.40 (19.60 to 39.00)	20.37 ± 0.081	18.45	4.295	21.08
BW20	1749	25.20 (20.00 to 45.20)	28.98 ± 0.165	47.86	6.91	23.87
BW24	1598	34.9 (20.70 to 55.60)	35.49 ± 0.235	88.81	9.424	26.50
Reproductive Traits (days)						
AFF	232	372 (287 to 650)	362.55 ± 6.47	9295.78	96.41	26.65
FI	232	217 (150 to 367)	248.55 ± 2.79	1729.96	41.59	16.77
Litter Traits						
LSAB	343	8 (4 to 12)	7.69 ± 0.098	3.277	1.81	23.56
LSAW	335	7 (5 to 12)	7.39 ± 0.098	3.220	1.79	24.31
LWAB (kg)	343	10.45 (4.05 to 14.50)	8.68 ± 0.121	5.021	2.24	25.85
LWAW (kg)	335	72.6 (26 to 98.6)	55.61 ± 0.90	271.67	16.48	29.68

BW0 = Birth weight ; BW1 = Body weight at 1st week ; BW2 = Body weight at 2nd week; BW3 = Body weight at 3rd week; BW4 = Body weight at 4th week; BW5 = Body weight at 5th week; BW6 = Body weight at 6th week; BW7 = Body weight at 7th week; BW8 = Body weight at 8th week; BW12 = Body weight at 12 weeks; BW16 = Body weight at 16 weeks; BW20 = Body weight at 20 weeks ; BW24 = Body weight at 24 weeks of age.

in Purebred LWY and crossbred LWY x Desi Pigs. Period and season of birth significantly influenced the body weights at both pre and post weaning stages.

Effect of Period

Period of birth had significant ($p < 0.01$ to 0.05) influence on body weights at all ages (BW0 to BW24) in 75% crossbred LWY (SVVU-T17) piglets. The present findings corroborated with the results of Kumari and Rao. (2010b); Reddy et al. (2013); Rokde et al. (2013); Jayasree et al. (2019) in LWY X Desi crossbred pigs Pandey et al. (2010), Mondal and Kumar (2015); Naha et al. (2017); Chaudhary et al. (2019) in Landrace x Desi pigs. In contrast to the present findings, Ganesan et al. (2013) in crossbred LWY; Chakurkar et al. (2021) in 75% LWY-Indigenous Agondagoan pigs; reported non-significant effect of period on body weights.

The mean body weights ranged from 1.04 (P4) to 1.12 (P2) at BW0, 1.51 (P2) to 2.06(P1) at BW1, 2.81 (P3) to 3.10 (P1) at BW2, 4.24(P3) to 4.45 (P4) at BW3 , 5.34 (P4) to 5.91 (P2) at BW4, 6.28 (P4) to 6.70 (P2) at BW5, 7.40 (P4) to 7.63 (P1) at BW6, 8.22 (P4) to 8.77 (P1) at BW7, 9.57 (P3) to 10.15 (P4) at BW8, 13.82 (P2) to 16.59 (P1) at BW12, 21.29 (P2) to 26.19 (P1) at BW16, 26.02 (P2) to 34.95 (P1) at BW20 and from 30.16 (P2) to 42.58 (P1) at 24 weeks of age. Highest mean body weights were recorded in Period 1 followed by period 4 in this study. Declining trend of body weights in period 2 and period 3 regained highest weights in period 4 might be probably because of continuous selection and better managemental practices followed in the farm during this period. The body weight differences among piglets born in different periods in our study may be attributed to differences in management, selection of sires and environmental conditions etc.

Effect of Season of Birth

Season of birth had significant influence ($P<0.05$) on body weights from birth to 24 weeks of age (BW0 to BW24). The piglets born in rainy season recorded significantly higher body weights (kg) at birth (1.11); BW1 (1.60); BW2 (2.90); BW3 (4.25); BW4 (5.59); BW5 (6.48); BW6 (7.48); BW7 (8.48); BW12 (14.56); BW16 (20.91); BW20 (29.77) and BW24 (37.00) weeks of age compared to piglets born in summer and winter seasons. The piglets born in summer season recorded lowest mean body weights (kg) at almost all ages except at birth. Mean body weights (kg) varied from 1.07 (winter) to 1.11 (rainy) at BW0, 1.53 (summer) to 1.60 (rainy) at BW1, 2.73(summer) to 2.90 (rainy) at BW2, 4.03 (summer) to 4.25 (rainy) at BW3, 5.35 to 5.59 at BW4, 6.23 to 6.48 at BW5, 7.17 to 7.48 at BW6, 8.28 to 8.54 at BW7, 9.75 to 9.93 at BW8, 13.96 to 14.80 at BW12, 19.45 to 20.91 at BW16, 28.04 to 29.77 at BW20 and 35.46 to 37.0 at BW24 weeks of age.

The significant effect of season of birth on body weights was also reported earlier by Kumari and Rao. (2010b); Ganesan et al. (2013); Rokde et al. (2013 in LWY X Desi crossbred pigs; Pandey et al. (2010); Naha et al. (2017) in Landrace x Desi; Khalkho and Singh. (2007); Kumar et al. (2010) in Tamworth x Desi. The piglets born during March to June (summer season) had lowest mean values for body weights in this study might be due to sows in advanced pregnancy exposed to harsh environment and the stress might not have provided required prenatal environment to the fast-growing piglets and this might have partially contributed to lower body weights. Significant effect of season of birth on body weights at different ages has indicated a favourable effect of rainy season.

Table 2: Least-squares means ± standard error for body weight (kg) traits in 75% Crossbred LWY (SVVU-T17) pig

EFFECT	BW0			BW1			BW2			BW3			BW4		
	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE
Overall	4011	1.09	0.003	4.11	1.54	0.004	4011	2.78	0.009	4011	4.11	0.013	4011	5.44	0.017
Period of birth	*			*			*			*			*		
P1(2005-2008)	523	1.08^{a}	0.007	523	2.06^{b}	0.010	523	3.10^{c}	0.022	523	4.28^{b}	0.031	523	5.40^{a}	0.041
P2(2009-2012)	1398	1.12^{b}	0.004	1398	1.51^{a}	0.006	1398	2.95^{b}	0.014	1398	4.41^{c}	0.020	1398	5.91^{c}	0.026
P3(2013-2016)	1234	1.10^{b}	0.005	1234	1.48^{a}	0.008	1234	2.81^{a}	0.17	1234	4.24^{a}	0.024	1234	5.68^{b}	0.032
P4(2017-2020)	856	1.04^{a}	0.006	856	1.56^{a}	0.009	856	2.82^{a}	0.018	856	4.45^{c}	0.029	856	5.34^{a}	0.038
Season of birth	*			*			*			*			*		
Summer (Mar-June)	1293	1.09^{b}	0.004	1293	1.53^{a}	0.007	1293	2.73^{a}	0.014	1293	4.03^{a}	0.021	1293	5.35^{a}	0.027
Rainy (July-Oct)	1226	1.11^{c}	0.004	1226	1.60^{b}	0.007	1226	2.90^{b}	0.014	1226	4.25^{b}	0.020	1226	5.59^{b}	0.026
Winter (Nov-Feb)	1492	1.07^{a}	0.004	1492	1.53^{a}	0.006	1492	2.75^{a}	0.013	1492	4.07^{a}	0.018	1491	5.39^{a}	0.024
Parity	*			NS			NS			NS			NS		
1	2275	1.10^{a}	0.003	2275	1.55	0.005	2275	2.79	0.010	2275	4.10	0.016	2275	5.43	0.021
2	1736	1.09^{a}	0.004	1736	1.52	0.006	1736	2.80	0.012	1736	4.13	0.017	1736	5.48	0.022
Sex of piglet	*			*			*			*			*		
Male	2044	1.10^{b}	0.004	2044	1.57^{b}	0.007	2044	2.82^{b}	0.013	2044	4.17^{b}	0.019	2044	5.51^{b}	0.025
Female	1967	1.09^{a}	0.004	1967	1.52^{a}	0.007	1967	2.77^{a}	0.013	1967	4.07^{a}	0.019	1966	5.39^{a}	0.025
Inbreeding (%)	*			*			*			*			*		
1 (Fx = 0)	1960	1.10^{b}	0.004	1960	1.60^{c}	0.006	1960	2.83^{b}	0.012	1960	4.13^{b}	0.17	1959	5.46^{b}	0.023
2 (Fx = >0 to 3)	1522	1.07^{a}	0.004	1522	1.50^{a}	0.007	1522	2.72^{a}	0.013	1522	4.03^{a}	0.19	1522	5.33^{a}	0.025
3 (Fx = >3)	529	1.15^{c}	0.006	529	1.54^{b}	0.009	529	3.04^{c}	0.019	529	4.60^{c}	0.27	528	6.18^{c}	0.036

EFFECT	BW5			BW6			BW7			BW8		
	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE
Overall	3956	6.38	0.017	3956	7.38	0.020	3948	8.48	0.024	3902	9.85	0.03
Period of birth	*			*			*			*		
P1(2005-2008)	519	6.56^{a}	0.042	519	7.63^{c}	0.05	517	8.77^{a}	0.058	513	10.10^{c}	0.08
P2(2009-2012)	1369	6.70^{c}	0.027	1369	7.49^{ab}	0.03	1364	8.62^{bc}	0.037	1351	9.80^{b}	0.05
P3(2013-2016)	1223	6.51^{b}	0.033	1223	7.50^{b}	0.04	1222	8.43^{ab}	0.045	1193	9.57^{a}	0.06
P4(2017-2020)	845	6.28^{a}	0.039	845	7.40^{a}	0.04	845	8.39^{a}	0.054	845	10.15^{c}	0.06
Season of birth	*			*			*			*		
Summer (Mar-June)	1277	6.23^{a}	0.028	1277	7.17^{a}	0.03	1276	8.28^{a}	0.038	1268	9.75^{a}	0.05
Rainy (July-Oct)	1207	6.48^{c}	0.027	1207	7.48^{b}	0.03	1206	8.48^{b}	0.037	1178	9.75^{a}	0.05
Winter (Nov-Feb)	1472	6.39^{b}	0.024	1472	7.41^{b}	0.02	1466	8.54^{b}	0.033	1456	9.93^{b}	0.04
Parity	NS			NS			*			*		
1	2235	6.31	0.021	2235	7.27	0.02	2228	8.20^{a}	0.028	2222	9.39^{a}	0.03
2	1721	6.43	0.022	1721	7.42	0.02	1720	8.68^{b}	0.030	1680	10.26^{b}	0.04
Sex of piglet	NS			NS			NS			NS		
Male	2010	6.43	0.026	2010	7.42	0.03	2007	8.51	0.03	1979	9.90	0.04
Female	1946	6.35	0.025	1946	7.35	0.03	1941	8.43	0.03	1925	9.78	0.05
Inbreeding (%)	*			*			*			*		
1 (Fx = 0)	1939	6.40^{b}	0.023	1939	7.44^{b}	0.026	1936	8.45^{a}	0.032	1908	9.83^{b}	0.04
2 (Fx = >0 to 3)	1494	6.31^{a}	0.026	1494	7.36^{a}	0.030	1493	8.49^{a}	0.035	1488	9.59^{a}	0.04
3 (Fx = >3)	523	6.86^{c}	0.037	523	7.47^{b}	0.044	519	8.76^{b}	0.051	506	10.62^{c}	0.07

EFFECT	BW12			BW16			BW20			BW24		
	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE
Overall	3244	14.57	0.06	2781	20.49	0.09	1749	29.13	0.13	1598	35.94	0.17
Period of birth	*			*			*			*		
P1(2005-2008)	105	16.59^{d}	0.28	111	26.19^{c}	0.43	81	34.95^{c}	0.59	56	42.58^{d}	0.74
P2(2009-2012)	1253	13.82^{a}	0.09	909	21.29^{a}	0.12	379	26.02^{a}	0.26	332	30.16^{a}	0.33
P3(2013-2016)	1041	14.45^{b}	0.11	919	24.57^{b}	0.20	647	30.47^{b}	0.22	584	37.91^{b}	0.28
P4(2017-2020)	845	15.34^{c}	0.12	842	25.72^{c}	0.14	642	32.48^{b}	0.24	626	41.36^{c}	0.29
Season of birth	*			*			*			*		
Summer (Mar-June)	1059	13.96^{a}	0.09	913	19.45^{a}	0.14	349	28.04^{a}	0.31	340	34.64^{a}	0.38
Rainy (July-Oct)	964	14.56^{b}	0.09	823	20.91^{b}	0.14	605	29.77^{b}	0.22	510	37.00^{b}	0.29
Winter (Nov-Feb)	1221	14.80^{b}	0.08	1045	20.72^{b}	0.13	795	28.91^{a}	0.18	748	35.46^{a}	0.24
Parity	*			NS			NS			NS		
1	1985	13.75^{a}	0.06	1785	20.13	0.09	1323	26.48	0.16	1186	31.27	0.20
2	1259	15.20^{b}	0.08	996	20.33	0.15	426	29.39	0.25	412	36.68	0.31
Sex of piglet	NS			NS			NS			NS		
Male	1671	14.46	0.08	1413	20.53	0.12	859	29.70	0.22	771	36.83	0.28
Female	1573	14.29	0.09	1368	20.19	0.12	890	29.30	0.21	827	36.44	0.27
Inbreeding (%)	*			*			*			*		
1 (Fx = 0)	1466	14.42^{b}	0.09	1192	20.44^{a}	0.15	869	28.76^{a}	0.20	836	35.80^{a}	0.23
2 (Fx = >0 to 3)	1277	14.29^{a}	0.08	1126	20.25^{a}	0.11	675	29.60^{b}	0.20	608	35.76^{a}	0.25
3 (Fx = >3)	491	15.07^{c}	0.12	459	20.67^{b}	0.16	201	32.69^{c}	0.33	154	42.14^{b}	0.45

*Highly significant ($p<0.01$); *Significant ($p<0.05$); NS- Non-significant Means carrying same superscript within each effect do not differ significantly; N = Number of observations, BW0 = Birth wt ; BW1 = Body wt at 1st week ; BW2 = Body wt at 2nd week; BW3 = Body wt at 3rd week; BW4 = Body wt at 4th week; BW5 = Body wt at 5th week; BW6 = Body wt at 6th week; BW7 = Body wt at 7th week; BW8 = Body wt at 8th week; BW12 = Body wt at 12 weeks; BW16 = Body wt at 16 weeks; BW20 = Body wt at 20 weeks

Effect of Parity

Significant effect of parity was noticed on body weights at birth (BW0), BW7, BW8 and BW12 weeks of age only, but not on body weights at remaining ages in this study. Parity 2 recorded highest mean body weights at majority of ages. An increasing trend in body weights observed with increase in parity. Mean values ranged from 1.08 to 1.10 at BW0, 1.52 to 1.55 at BW1, 2.79 to 2.80 at BW2, 4.10 to 4.13 at BW3, 5.43 to 5.48 at BW4, 6.31 to 6.43 at BW5, 7.27 to 7.42 at BW6, 8.20 to 8.68 at BW7, 9.39 to 10.26 at BW8, 13.75 to 15.20 at BW12, 20.13 to 20.33 at BW16, 26.48 to 29.39 at BW20 and 31.27 to 36.68 at BW24 weeks of age in this study. Significant effect of parity on body weights observed in this study was in accordance with the findings of Reddy et al. (2013); Jayasree et al. (2019) in LWY X Desi crossbred pigs, Kumar et al. (2010) in Tamworth x Desi. Parity 2 recorded highest mean body weights than parity 1 in this study might be due to the lower body weights of piglets born during early parities which indicated poor growth due to lesser intrauterine space in young sows. Piglet growth improved after first parity in sows.

Effect of Sex

Sex of the piglet significantly influenced ($P<0.01$ to 0.05) the pre weaning body weights from birth to 4 weeks of age only (BW0 to BW4) but not on body weights at the remaining ages from BW5 to BW24 weeks of age. The mean body weights for males were higher than the corresponding values for females at all age groups. The least squares means for body weights (kg) at birth (BW0), BW1, BW2, BW3, BW4, BW5, BW6, BW7, BW8, BW12, BW16, BW20 and BW24 weeks of age in males were 1.10, 1.57, 2.82, 4.17, 5.51, 6.43, 7.42, 8.51, 9.90, 14.46, 20.53, 29.70 and 36.83, respectively and the corresponding means in females were 1.09, 1.52, 2.77, 4.07, 5.39, 6.35, 7.35, 8.43, 9.78, 14.29, 20.19, 29.30 and 36.44, respectively (Table 2). Males have shown better performance than females (Hafeez, 1993) due to the anabolic effect of hormones. In relation to endocrinal system, estrogen hormone has a limited effect on the growth of long bones in females. That could be one of the reasons in which females have smaller body and lighter weight against males. Apart from this, another factor attributed is that, since, more intense selection is practiced in males for breeding than in females, this may lead to widening of difference among them as age advances. These findings are in concurrence with the results of Jayasree et al. (2019) in Crossbred LWY X Desi pigs.

Inbreeding

Inbreeding co-efficient (Fx) values in the population varied from 0 to 25.5 percent with an overall mean of 0.36 percent. The proportion of inbred animals and F values were low compared to an earlier study at the same farm (F=5.82%; Kumari et al., 1994) in Indigenous pigs. Periodical introduction of new germplasm in the form of boars for breeding from other farms (ICAR-AICRP on Pigs, Kattupakkam, Tamil Nadu) could be the possible reason for the lower inbreeding co-efficient obtained in the present study. Effect of Inbreeding was evident (P3%) at all the ages compared to other two groups (Fx = 0; >0 to 3%) and the lowest mean body weights were observed in Group 2 (Fx = > 0 to 3%). The inbred animals produced piglets with higher body weights than non-inbred parents. The body weights of piglets born to the parents with F value > 3 percent were heavier than the other two groups (Fx = 0: and > 0 to 3%). The level of Inbreeding accumulated in the present study has no adverse effect on the growth rate of piglets. Further, the piglets with higher Fx values exhibited higher body weights compared to other two groups. Greater performance of piglets in group 3 might be due to the intense selection of sires and systematic breeding programmes coupled with improved managemental practices.

Conclusion

The analysis of productive traits in Crossbred pigs revealed that the criteria like Parity, Period and Season of birth has noticeable effect among productive traits in Crossbred Large White Yorkshire (LWY) pigs,which suggests that these factors play a crucial role in determining the growth performance of crossbred pigs. The least squares mean body weights of Large White Yorkshire (LWY) crosses improved significantly from birth to weaning, and after weaning up to 24 weeks of age which implies a consistent growth pattern in the piglets during the entire preweaning and post weaning period. The current findings provide valuable insights into the factors affecting body weights in crossbred pigs, signifying the influence of environmental conditions and the potential for formulating breeding strategies and genetic improvement programmes in pigs.

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