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PERFORMANCE OF DIFFERENT BREEDS OF PIGS IN AN ORGANISED FARM

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ABSTRACT

A study was carried out at 30-sow Teaching Unit, College of Veterinary Science, AAU, Khanapara Campus for a period of ten years to assess the performance of Hampshire (H), Large Black (LB) and Hampshire x Large Black (H x LB) crosses reared under intensive feeding and management. The average litter size and litter weight at birth and at weaning were found to be 8.59±0.28, 7.33±0.32, 8.69±0.42 and 12.33±0.41, 10.02±0.47 and 12.61±0.74 and litter size and litter weight at weaning were 7.44±0.32, 6.40±0.43 and 8.02±0.50 and 101.21±4.30, 81.71±5.48 and 106.80±6.86 respectively in Hampshire, Large Black and crossbred pigs. The litter size at birth and litter weight at birth was significantly higher in Hampshire and crossbred than Large Black pigs. Similarly litter size and litter weight at weaning was also found to be significantly higher in Hampshire and crossbred pigs. Pre-weaning mortality of piglets was recorded 11.30%, 8.68% and 6.04% in Hampshire, Large Black and crossbred piglets respectively. The farrowing number did not have any significant effect on litter size and litter weight at birth and at weaning among the breeds reared upto 5th farrowing. Analysis of data revealed non-significant difference in farrowing intervals due to the effect of parity among the breeds. The analysis revealed better performance of Hampshire and Crossbred pigs in comparison to Large Black pigs.

Keywords : Hampshire, Large Black, litter size, farrowing interval, parity

Considering the increasing demand of pork and pork products, pig husbandry attracts unemployed youths, farmers and entrepreneurs of the state of Assam towards rearing of pigs in smaller or larger herds. Though quite a large number of pig breeds are available in the state, little or no study has been done for comparative evaluation of the performance of those pig breeds. Variation in sow reproductive performance has both genetic and environmental effect. The genetic impact on most reproduction are relatively small whereas factors like herd management, parity, year, season, lactation length and nutrition strongly influence sow reproductive performance[10]. Keeping in view, the work has been contemplated to study

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the performance of different breeds of pigs under similar feeding and management practices.

MATERIALS AND METHODS

Data on 23, 13 and 13 numbers of sows of Hampshire (H), Large Black (LB) and Hampshire x Large Black crosses (CB) respectively were collected for a period of 10 years (from 2001 to 2010) at 30-sow Teaching Unit, College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati to have a comparative evaluation of the performance of the three breeds under the climatic condition of Assam. All the three breeds of pigs were reared under intensive system with similar conditions of feeding and management. Data on various parameters like litter size at birth, litter weight at birth, litter size at weaning (8 weeks), litter weight at weaning, pre-weaning mortality of piglets and farrowing intervals for different breeds were recorded and analysed using standard statistical methods.

RESULTS AND DISCUSSION

Table 1 revealed that the month of farrowing did not have significant effect on litter size and litter weight at birth and at weaning among the breeds. However, significantly higher litter weight of Hampshire piglets born in the month of June was recorded. Significantly higher litter size at weaning of CB piglets born in July was observed. Similar findings were reported by earlier workers in Hampshire and Yorkshire pigs[4,5,7]. Farrowing number had no significant effect on litter size and litter weight at birth and at weaning in all three breeds (Table 2). However, significant difference in litter size at weaning was recorded between Hampshire and Large Black pigs in 2nd farrowing. The finding is supported by reports of earlier workers[2,3,5]. The average litter size and litter weight at birth and at weaning was found to be 8.59±0.28, 7.33±0.32, 8.69±0.42 and 12.33±0.41, 10.02±0.47 and 12.61±0.74 and litter size and litter weight at weaning were 7.44±0.32, 6.40±0.43 and 8.02±0.50 and 101.21±4.30, 81.71±5.48 and 106.80±6.86 respectively in Hampshire, Large Black and crossbred pigs. The litter size at birth and litter weight at birth was significantly higher in Hampshire and crossbred than Large Black pigs. Similarly litter size and litter weight at weaning was also found to be significantly higher in Hampshire and crossbred pigs. Pre-weaning mortality of piglets was recorded 11.30%, 8.68% and 6.04% in Hampshire, Large Black and crossbred piglets respectively. Table 3 reveals that parity was not found to effect farrowing intervals significantly in all three breeds. However, farrowing interval was found to be maximum in 1st parity in H and LB sows whereas higher length of farrowing interval in 3rd parity was recorded in CB sows. Earlier workers reported non-significant differences in farrowing intervals due to parity[1, 6,8,9].

Table 1. Effect of month of farrowing on performances of different breeds

Month of Farrowing	Variable	Hampshire	Large Black	Crossbred
		Mean±SE	Mean±SE	Mean±SE
Jan	Litter size at birth	8.31±0.86 [a]	8.25±0.56 [a]	9.25±1.03 [a]
	Litter wt. at birth	12.19±1.29 [a]	11.26±0.85 [a]	11.08±3.79 [a]
	Litter size at weaning	7.38±0.89 [a]	6.63±1.10 [a]	8.75±1.44 [a]
	Litter wt. at weaning	102.33±12.15[a]	83.31±14.39[a]	99.68±34.14[a]
Feb	Litter size at birth	8.50±2.22 [a]	7.50±1.55 [a]	7.33±2.19 [a]
	Litter wt. at birth	11.93±3.15 [a]	11.60±2.56 [a]	11.17±3.30 [a]
	Litter size at weaning	5.50±2.33 [a]	7.50±1.55 [a]	5.33±1.86 [a]
	Litter wt. at weaning	73.53±30.72[a]	106.72±23.53[a]	75.48±29.86[a]
Mar	Litter size at birth	10.33±1.05 [a]	6.50±0.50 [a]	8.00±0.00 [a]
	Litter wt. at birth	16.24±2.72 [a]	10.10±0.70 [a]	7.93±3.97 [a]
	Litter size at weaning	7.00±1.77[a]	4.50±1.50 [a]	7.33±0.67[a]
	Litter wt. at weaning	94.13±22.51[a]	68.21±31.15[a]	71.40±35.70[a]
Apr	Litter size at birth	7.70±0.67 [a]	7.50±1.50 [a]	7.29±1.69 [a]
	Litter wt. at birth	10.49±0.77 [a]	10.35±1.75 [a]	9.89±2.55 [a]
	Litter size at weaning	7.20±0.94 [a]	7.50±1.50 [a]	6.00±1.80 [a]
	Litter wt. at weaning	92.71±11.63[a]	95.22±16.10[a]	72.63±23.88[a]
May	Litter size at birth	8.00±0.63 [a]	3.50±0.50 [a]	8.67±1.50 [a]
	Litter wt. at birth	11.80±1.02 [a]	5.35±1.25	13.37±1.83 [a]
	Litter size at weaning	6.08±0.99 [a]	3.50±0.50 [a]	8.67±1.50 [a]
	Litter wt. at weaning	87.45±14.75[a]	49.22±11.50[a]	120.30±16.46[a]
Jun	Litter size at birth	8.38±0.89 [a]	7.67±1.05 [a]	10.38±1.19 [a]
	Litter wt. at birth	12.06±1.07 [ab]	9.83±1.33 [b]	15.94±1.61 [a]
	Litter size at weaning	7.13±0.90 [a]	6.67±1.32 [a]	9.88±1.03 [a]
	Litter wt. at weaning	97.68±11.69[ab]	80.23±15.55[b]	136.75±12.44[a]
Jul	Litter size at birth	10.50±0.57 [a]	7.75±0.48 [a]	9.20±2.03 [a]
	Litter wt. at birth	14.95±1.3 2[a]	10.73±0.59 [a]	14.28±2.97 [a]
	Litter size at weaning	10.00±0.57 [a]	5.50±1.85[b]	9.00±1.92 [ab]
	Litter wt. at weaning	134.87±11.84[a]	68.82±22.96	125.82±25.30[ab]
Aug	Litter size at birth	8.42±0.75 [a]	7.25±1.25[a]	7.00±1.35 [a]
	Litter wt. at birth	12.33±1.04 [a]	9.78±1.30 [a]	8.58±3.23 [a]
	Litter size at weaning	8.33±0.77 [a]	7.25±1.25 [a]	5.50±2.06 [a]
	Litter wt. at weaning	115.76±10.00[a]	89.93±11.91[a]	73.98±26.81[a]
Sep	Litter size at birth	8.00±2.08 [a]	7.17±0.79 [a]	4.00 ±.00 [a]
	Litter wt. at birth	11.67±2.85 [a]	9.83±1.31 [a]	7.00± .00 [a]
	Litter size at weaning	7.67±2.40 [a]	6.33±1.26 [a]	4.00± .00 [a]
	Litter wt. at weaning	106.08±31.79[a]	81.30±16.65[a]	63.00±.00[a]
Oct	Litter size at birth	10.33±1.56 [a]	8.67±1.45 [a]	10.67±1.45 [a]
	Litter wt. at birth	12.48±1.54[a]	11.77±1.34 [a]	16.03±2.75 [a]
	Litter size at weaning	9.17±0.83 [a]	6.67±3.38 [a]	9.00±3.06 [a]
	Litter wt. at weaning	112.32±17.96[a]	79.73±40.15[a]	122.74±44.25[a]
Nov	Litter size at birth	7.82±0.92 [a]	5.80±1.24 [a]	9.33±0.56 [a]
	Litter wt. at birth	11.77±1.17 [a]	7.10±2.37	13.98±1.03 [a]
	Litter size at weaning	6.27±1.10 [ab]	4.80±1.66[b]	9.33±0.56 [a]
	Litter wt. at weaning	91.19±14.47[ab]	62.48±20.87[b]	125.85±9.27[a]
Dec	Litter size at birth	8.43±0.78 [a]	7.50±1.18 [a]	8.64±1.08 [a]
	Litter wt. at birth	11.39±1.03 [a]	10.48±1.61 [a]	13.29±1.91 [a]
	Litter size at weaning	7.86±0.74 [a]	7.50±1.18 [a]	8.09±1.08 [a]
	Litter wt. at weaning	101.06±9.62[a]	96.45±14.82[a]	112.75±17.55[a]
Overall	Litter size at birth	8.59±0.28[a]	7.33±0.32[a]	8.69±0.42[a]
	Litter wt. at birth	12.33±0.41[a]	10.02±0.47[a]	12.61±0.74[a]
	Litter size at weaning	7.44±0.32[a]	6.40±0.43[a]	8.02±0.50[a]
	Litter wt. at weaning	101.21±4.30[a]	81.71±5.48[a]	106.80±6.86[a]

Means bearing different superscripts in a row differ significantly (P<0.05)

Table 2. Effect of farrowing number on performance of different breeds

Farrowing no.	Variable	Hampshire	Large Black	Crossbred
		Mean±SE	Mean±SE	Mean ±SE
1	Litter size at birth	6.70±0.56[a]	5.62±0.78[a]	6.54±1.02[a]
	Litter wt. at birth	9.41±0.72[a]	7.52±1.05[a]	8.50±1.69[a]
	Litter size at weaning	5.48±0.59[a]	4.08±0.91[a]	5.54±1.05[a]
	Litter wt. at weaning	73.60±7.53[a]	52.05±11.54[a]	65.76±15.37[a]
2	Litter size at birth	8.87±0.52[a]	7.23±0.62[a]	9.15±0.75[a]
	Litter wt. at birth	12.99±0.7[a]	9.54±1.07	13.76±1.14[a]
	Litter size at weaning	8.22±0.58[ab]	6.31±0.82[b]	9.00±0.70[a]
	Litter wt. at weaning	114.01 ± 7.45[a]	79.99±10.02	121.83±9.65[a]
3	Litter size at birth	9.52±0.68[a]	8.73±0.54[a]	9.31±0.88[a]
	Litter wt. at birth	13.08±0.93[a]	11.96±0.68[a]	14.02±1.15[a]
	Litter size at weaning	8.39±0.71[a]	7.27±1.21[a]	8.62±0.87[a]
	Litter wt. at weaning	111.58±10.43[a]	90.30±15.07[a]	117.42±10.60[a]
4	Litter size at birth	9±0.36[a]	7.91±0.67[a]	9.42±0.87[a]
	Litter wt. at birth	13.31±0.5[a]	10.72±0.89[a]	13.57±1.79[a]
	Litter size at weaning	8.15±0.39[a]	7.73±0.66[a]	8.25±1.20[a]
	Litter wt. at weaning	114.58±5.42[a]	96.49±8.29[a]	112.45±17.25[a]
5	Litter size at birth	9.14±0.82[a]	7.57±0.57[a]	9.20 ±1.1[a]
	Litter wt. at birth	13.41±1.58[a]	11.44±0.74[a]	13.49±2.26[a]
	Litter size at weaning	6.79±1.16[a]	7.43±0.61[a]	8.90 ±1.12[a]
	Litter wt. at weaning	89.42±15.19[a]	103.25±7.37[a]	120.06±19.85[a]

Means bearing different superscripts in a row differ significantly (P<0.05)

Table 3. Effect of parity on farrowing intervals of different breeds

Parity	Farrowing intervals		
	Hampshire	Large Black	Crossbred
	Mean ± SE	Mean ± SE	Mean ± SE
1st	203.00±5.02[a]	219.62±15.98[a]	200.85±6.27[a]
2nd	199.65±4.11[a]	205.09±6.78[a]	196.38±5.40[a]
3rd	196.42±3.46[a]	211.91±9.96[a]	205.33±7.19[a]
4th	197.43±8.65[a]	192.71±11.10[a]	193.10±5.38[a]

Means bearing different superscripts in a row differ significantly (P<0.05)

CONCLUSION

The study reveals that the Hampshire and Hampshire x Large Black crosses performed better litter size, litter weight at birth and at weaning in comparison to Large Black pigs. Pre-weaning mortality of piglets was higher in Hampshire pigs followed by Large Black and crossbred piglets. However, overall performance of Hampshire and crossbred pigs was observed better under the climatic condition of Assam.

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