ADAPTABILITY OF IMPORTED BREEDING PIGS TO PRACTICAL CONDITIONS IN SOUTH VIETNAM

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INTRODUCTION

The importation of new pig genetics is one of the fastest means to improve the production of current stocks that has been supported by the Ministry of Agriculture and Rural Development. In the years of 2000, Binh Thang pig and poultry research Center has imported 200 breeding pigs from Denmark, Australia and United State under the project "Improvement and development of pig breeding in the southern provinces". Adaptive assessment for these imported pigs in practical conditions of Vietnam is essential for selective orientations and effective use for new genetics. Therefore, this is the aim of this research.

MATERIAL AND METHODS

The total of 394 Landrace and Yorkshire pigs is tested by generations for average daily gain (ADG), feed conversion ratio (FCR) and back fat thickness at P2 point (BF). Pigs were on test at 35-40kg and off test at 95-100 kg. Performance test records were adjusted to days to 100kg liveweight (D100) and backfat at 100kg liveweight (BF100) using the recommendations of National Swine Improvement Federation, United States (NSIF, 1997). For reproduction assessment, the total of 484 litters in Landrace and 526 litters in Yorkshire were collected for reproduction records by generations and genetic groups (Denmark, United States and Australia). Studied traits included number of born alive (NBA), number weaned (NW) for the average weaning interval of 25 days, age at first litter (FF) and farrowing interval (FINT).

RESULTS

As indicated in table 1, in general, all of tested traits were improved from generation ‘0” to generation 2 in both breeds of Landrace and Yorkshire. Among generations, average daily gain was between 782.9 and 830.8 gram in Landrace, and between 764.3 and 817.3 gram in Yorkshire. This resulted in the decrease of days to 100kg liveweight through three generations from 177.2 days to 176.4 days and from 180.6 days to 178.8 days respectively for Landrace and Yorkshire pigs. Similarly, some improvements were also found for feed conversion ratio by generations for each breed. For backfat trait, there was no difference found for three generations in both of Landrace and Yorkshire pigs.

Table 1. Performance test traits in imported pigs by generations (GE) (origin imported generation (0), first generation (1) and second generation (2))

Breeds	GE	n	ADG (gram)		FCR		BF100 (mm)		D100 (day)	
			$\overline{X}$	SE	$\overline{X}$	SE	$\overline{X}$	SE	$\overline{X}$	SE
Landrace	0	34	782.9 ^{c}	5.3	3.12 ^{b}	0.03	10.8 ^{ab}	0.2	176.9 ^{bc}	0.6
	1	50	807.1 ^{b}	4.4	3.11 ^{b}	0.02	10.9 ^{a}	0.2	177.2 ^{bc}	0.5
	2	62	830.8 ^{a}	5.0	2.92 ^{c}	0.03	11.1 ^{a}	0.2	176.4 ^{c}	0.6
Yorkshire	0	41	764.3 ^{d}	2.8	3.23 ^{a}	0.02	10.8 ^{ab}	0.1	180.6 ^{a}	0.3
	1	106	790.3 ^{c}	3.8	3.02 ^{c}	0.02	11.2 ^{a}	0.2	179.4 ^{ab}	0.5
	2	101	817.2 ^{b}	3.9	2.83 ^{d}	0.02	10.8 ^{ab}	0.2	178.8 ^{b}	0.5
LSD			7.26		0.04		0.30		0.87	
CV%			4.80		6.90		15.17		2.60	

Within the same column, means with different italic letters are different significantly (P <0.05)

Reproduction traits by generations were presented in table 2 for Yorkshire and table 3 for Landrace. These figures showed that the reproduction of imported pigs from generation "0" to generation "2" were relatively stable in all indicators such as number born alive, number weaned per litter. The similar results were also found for age at first litter (FF) and farrowing interval (FINT) in both of Landrace and Yorkshire.

For Yorkshire pigs, the Danish and United States genetics were better in NBA and NB trait (table 2). For Landrace pigs, there was no remarkable difference for number born alive among genetic groups. But for weaned number of piglets, Danish and United States genetics had better figures (table 3). All these results have indicated that all sows in different genetic groups are able to adapt well to practical conditions in South Vietnam and both of production and reproduction of later generations have tended to be more improved than before generations.

Table 2. Reproduction traits in Yorkshire sows by genetic groups and generations (GE) (origin imported generation (0), first generation (1) and second generation (2))

Genetic groups	GE	NBA		NW		FF (day)		FINT(day)	
		n	$\overline{X}$ ± SD	$\overline{X}$ ± SD	n	$\overline{X}$ ± SD	n	$\overline{X}$ ± SD
Demark	0	23	9.22±3.12^{a}	7.96±2.01^{a}	6	395.7±30.8^{a}	17	196.7±40.1^{a}
	1	27	9.26±3.26^{a}	7.67±2.34^{ab}	9	389.1±11.3^{a}	19	181.8± 2.6^{b}
	2	36	9.28±3.28^{a}	7.94±2.96^{a}	13	387.9±52.3^{a}	13	181.8± 0.1^{b}
United States	0	52	8.62±2.91^{a}	7.62±2.91 ^{ab}	13	395.2±76.9^{a}	35	182.4±18.6^{b}
	1	77	8.86±1.65^{a}	8.14±1.81^{a}	26	379.9±27.7^{a}	25	176.0±20.1^{b}
	2	55	8.82±2.50^{a}	7.82±2.50^{a}	16	383.8±30.0^{a}	27	172.9± 1.8^{b}
Australia	0	56	8.30±1.94^{a}	6.77±2.21^{b}	15	406.9±68.2^{a}	33	196.6±32.7^{b}
	1	126	8.44±2.74^{a}	7.35±2.58 ^{ab}	43	383.4±28.4^{a}	78	184.0±22.3^{ab}
	2	74	8.54±3.11^{a}	7.61±2.62^{ab}	34	380.9±46.1^{a}	40	181.7± 19.0^{b}
LSD			1.10	1.02		31.40		12.76
CV%			30.77	32.69		11.08		12.43

Within the same column, means with different italic letters are different significantly (P <0.05)

Table 3. Reproduction traits in Landrace sows by genetic groups and generations (GE) (origin imported generation (0), first generation (1) and second generation (2))

Genetic groups	GE	NBA		NB		FF (day)		FINT(day)	
		n	$\overline{X}$ ± SD	$\overline{X}$ ± SD	n	$\overline{X}$ ± SD	n	$\overline{X}$ ± SD
Demark	0	53	8.64±2.46^{ba}	7.47±2.30^{ba}	25	422±53.9^{a}	10	164.6±6.1^{b}
	1	79	9.00±2.43^{ba}	7.77±2.21^{a}	27	384±32.3^{ba}	23	166.1±3.4^{b}
	2	63	9.40±2.53^{a}	8.06±2.23^{a}	29	389±39^{ba}	12	167.1±3.2^{ba}
United States	0	85	8.61±2.75^{ba}	7.48±2.59^{ba}	37	409±57.8^{b}	24	165.8±3.2^{ba}
	1	63	8.86±2.87^{ba}	7.65±2.59^{ba}	24	390±42.7^{ba}	10	163.7±4.4^{b}
	2	40	9.03±2.72^{ba}	7.76±2.34^{a}	25	401±40.6^{b}	10	172.5±18.1^{ba}
Australia	0	27	8.22±2.53^{b}	6.78±2.14^{b}	9	413±70.2^{b}	15	188.4±47.9^{a}
	1	42	8.64±2.90^{ba}	7.43±2.12^{ba}	15	390±39.8^{ba}	19	187.0±28.5^{a}
	2	32	8.75±2.27^{ba}	7.50±1.68^{ba}	8	392±34.6^{b}	17	188.4±47^{a}
LSD			1.07	0.96		31.28		19.92
CV%			29.75	31.01		11.66		14.67

Within the same column, means with different italic letters are different significantly (P <0.05)

CONCLUSION

The imported genetics of Landrace and Yorkshire pigs had good adaptability to practical conditions in South Vietnam as indicated by the stability in production and reproduction traits from generation “0” to generation “2”.

For the difference between genetic groups, the Danish and United States genetics have shown better figures for number piglet weaned in both of Yorkshire and Landrace sows.