Higher Adaptability and Economic Return from Pigs Overshadows Social Taboos

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ABSTRACT

Pig farming has a significant place in improving the socio-economic status of weaker sections of the society. But the majority of pigs reared in rural areas are poor productive and non-descript (local). Keeping in view, Ministry of Agriculture, New Delhi sanctioned a project on 'Intensive Pig Production' to KVKs for popularizing the Large White Yorkshire (LWY) breed at farmer's field during 2000. KVKs produced 1041 piglets of LWY breed and provided to 170 interested farmers @ 1:4/5 to establish the piggery units. This programme has significantly improved the productivity level (e.g. age of puberty 235±5.85 days, body weight at puberty 75.0±1.70 kg, age at first farrowing 401.33±2.50 days, litter size 8.33±0.35 and birth weights of piglet 0.97±0.05 kg) and their herd quality in economic terms (body weight at 12 month for slaughter 80.0±1.75 kg and net profit Rs 1461 /head/year). Comparatively LWY breed took 28.7% less time and gained 50% higher body weight during sexual maturity as compared to the local breed. Number of piglet produced per farrowing was 41.9% higher in LWY than local. The net profit per pig was also 79.0% higher in LWY than local. The, pig farming is still less constrained with social taboos, costly ration, high piglet mortality and lack of good marketing facilities. However, numbers of entrepreneurs are coming forward who need support to venture into this sector. The establishment of processing units for surplus pork may also be a positive step.

Key words: *LWY; Productivity; Economic return;*

Pig farming has become a profitable enterprise since it possesses many economic traits e.g. high prolificacy, faster growth rate, shorter generation interval, low cost of rearing and high dressing percentage with better feed conversion efficiency. Pigs give quick return, convert inedible feed into valuable products, require less labor, adopt most types of farming systems, aid soil fertility, supplement other enterprises, etc. It is still considered as backward profession and unorganized rearing largely dominates the sector, and it is primarily in the hand of poor, landless and weaker section of society. Although during the last decade, there has been a tremendous positive growth of pigs in urban than rural areas due to changing attitude towards pigs and its products (BAHS-2003). Pork and its products achieved a compound growth rate of 3.13% and 8.00% per annum respectively (*Tiwari and Arora 2001*). But, the majority of poor productive, *desi* breed (> 84 %) reared in rural areas are major constraint (*Kaul and Tripathi, 1993*) in piggery development. Keeping in view, an attempt was made to study the superiority of new breed of pig viz. *Large White Yorkshire* (LWY) at farmer's field in selected districts of eastern Uttar Pradesh.

METHODOLOGY

Krishi Vigyan Kendra (KVK) viz. Gonda, Allahabad and Chitrakoot implemented a project of Government of India to popularize the *Large White Yorkshire* (LWY) breed of pig in eastern Uttar Pradesh. These KVKs established piggery units of LWY breed at its campuses during 2000-01, with financial assistance of Ministry of Agriculture, New Delhi and technical guidance of IVRI, Bareilly. KVKs produced a total number of 1041 piglets up to 2008. After weaning, these piglets were distributed to interested farmers (@ 1: 3 or 4) on return back basis in respective

districts. As a result a total number of 170 units of LWY breed were established in villages. The pigs were reared under free range system, scavenging in the surroundings of houses, community waste land, farmer's fields and on garbage obtained from city hostels, restaurant, hotels, etc. Animals were also supplemented with little bit feed materials like cooked rice mixed with rice polish, rice bran, wheat bran and other domestic waste as per availability. Incidence of swine fever, foot & mouth disease, pneumonia, nutritional anemia, etc. was observed in herd. Vaccination and deworming was followed by KVKs. Farmers constructed separate thatched shed (sty) with *kachcha* floor for pigs, near by their houses. The old men or women took care of their herd during scavenging. It was reported that 50% farmers sold their pigs in villages to pork consumer, 30% to middle men and 20% near by/distant market.

RESULTS AND DISCUSSION

The data pertaining to various production traits viz., age of puberty, body weight gained at puberty, age at first farrowing, gestation period, litter size, mortality of piglets, farrowing intervals and slaughter weight at 12 months age were collected from entire 170 LWY pig units as well as *desi* pigs in same villages under identical management conditions and analyzed as per the procedure prescribed by *Snedecor & Cochran (1967)*.

Age at Puberty: The age at puberty in LWY gilts ranged from 210 to 260 days with a mean value of 235 ± 5.85 days. It took longer age to achieve sexual maturity as compared to the observations of *Babu et al (2004)* as 176.7±3.41 days and ranged from 160 to 195 days. The age at sexual maturity in present study was mainly due to poor nutrition. Pigs were mostly maintained on scavenging. Concentrate was given only on some occasion i.e. during sickness, farrowing, etc.

Body weight at Puberty: The average body weight in gilts at puberty was recorded as 75.00 ± 1.70 kg and ranged from 72.50 to 77.50 kg. However, higher body weight (82.25±1.78 kg) at puberty was recorded by *Babu et al (2004)* and lower body weight (63 kg) by *Serdyuk and Tkachuk (1984)*.

Age at first farrowing: The mean age at first farrowing was 401± 2.50 days, which was higher than the observations of authors cited above. In fact, these economic traits in present study were inferior mainly due to inadequate nutrition and poor management.

Gestation period: The overall least-squire mean of gestation period of LWY pigs was 114±0.15 days (Table 1), which, was almost similar as reported by *Babu et al* (2004) as 113.25±0.50 days and *Prakash et al (2008)* as 113.83±0.22 days.

Litter size: The average litter size was 8.33±0.35 which ranged from 7.0 to 10.00. Similar ranges for litter size 7.09 to 10.10 and 7.11 to 7.83 were also reported by *Singh et al (1989) and Prasad et al (2006)*.

Birth weights: The average birth weights of piglet in gilts were 0.97±0.05 kg which is comparable with the reports of *Singh et al (1989)* 1.00±0.02 kg and *babu et al (2004)* 1.06±0.05 kg.

Piglet mortality: In present study, the pre-weaned piglet mortality was higher (20.16%). Most of the mortalities were due to pneumonia in winter or by crushing beneath

Table 1. Performance of Large White Yorkshire (LWY) pigs at farmer's field

S. No.	Particulars/ Districts	Gonda	Allahabad	Chitrakoot	Mean/ Total
1.	No. of piggery units	75	40	55	170
2.	Age of puberty (days)	229	230	246	235±5.85
3.	Body weight at puberty (kg)	75.0	72.5	77.5	75.0±1.70
4.	Age at first farrowing (days)	345	470	388	401.33±2.50
5.	Gestation period (days)	114.5	114.0	113.5	114 ± 0.15
6.	Litter size	10	7	8	8.33±0.35
7.	Birth weights of piglet (kg)	1.06	0.88	0.92	0.97±0.05
8.	Preweaned piglet mortality (%)	17.5	20.0	23.0	20.16
9.	Farrowing intervals(days)	205	194	244	214.33±3.70
10.	Body weight at 12 month (kg)	85	75	80	80.0±1.75
11.	Net profit (Rs./pig)	1446	1590	1348	1461

the mother. This fact was supported by *Kaul and Tripathi (1993)* for pre weaned crossbred piglets (deshi x LWY). However, the lower mortalities (13.93%) were reported by *Kumar et al (2004)* for LWY piglets.

Farrowing interval: The mean farrowing interval in sow was observed to be 214.33±3.70 days. Comparatively, shorter farrowing interval was reported by *Babu et al (2004)* as 180 ± 1.03 days. The longer farrowing interval in present study was mainly due to not following the weaning practice by the farmers.

Net profit: The surplus/ culled male piglets reared for slaughter purpose, attained a body weight of 80 + 1.75 kg in 12 months and gave a net profit of Rs 1461 per pig. Similar net profit of Rs. 1444 per annum per pig was reported by *Kumar et al (2004)* for the breed. The profitability in present study could not be achieved as expected was due to lack of organized market facilities in districts.

Non-Descript (Local) vs. Large White Yorkshire: Both, the local and LWY breed of pigs were reared in same location (villages), under identical prevailing condition of feeding (scavenging) and management. The comparative economic traits recorded for both the breeds are given in Table 2.

It is evident (Table 2) that the LWY breed could not achieve the genetic potential mainly due to inadequate nutrition. Even though, its performance was much superior to local breed under identical feeding and management. The average age at first estrus was higher in local (10.80±1.52 months) than LWY (7.70±1.05 months) breed. Comparatively, the body weight at puberty was significantly (P<0.01) higher in LWY (75 ± 2.70 kg) than the local (50±2.59 kg). The age at first farrowing and its intervals were significantly lower (P<0.01) in LWY (13.24±0.97 & 15.2 ± 1.98 months) than local breed (7.02±1.65 & 7.76±1.69 months). There was highly significant difference (P<0.01) between the average birth weight of LWY piglets (0.97± 0.03 kg) vs. local (0.65±0.02kg). The body weight at slaughter age was 80.00 ± 1.75 kg in LWY and 55±1.85 kg in local. Comparatively, the higher net profit achieved by LWY (Rs 1461) as compared to local breed (Rs 935).

The superiority in economic traits of LWY breed over *local* was 28.7% less in age and 50% higher body weight during sexual maturity, 41.2% more piglet production /farrowing, 49.3% higher body weights of piglet and 45.6% at 12 month age. Over all 79% higher net return/ pig was obtained with LWY breed as compared to local breed.

Constraint : Significant improvement has been recorded in productivity level of LWY breed over indigenous. Even then pig husbandry has many constraints as social taboo, non-availability of cheap ration, high mortality and lack of good marketing facilities. In rural areas pigs are still considered as scavenge fed livestock. The impression keeps most people away to venture in this field. Standard pig rations are also very costly. Either no farm waste is available for ration or no knowledge about cheap ration is available to pig farmers. Pig farmers are also not aware about the management practices and disease control measures to check high mortality. Demand of pork is less and processing units are also not coming rapidly, so there is problem of marketing of surplus pork. Government should encourage entrepreneurs to venture in this sector. Pork market should also be labeled as farm-bred, farm-fed to attract people who otherwise shy-away to consume it.

Strategy : In case pig production has to be given a

Table 2. Comparative economic traits of indigenous and LWY breed

S.No.	Particulars	Indigenous breed	LWY Breed	% Superiority
1.	Age at puberty (months)	10.80 ± 1.52	7.70 ± 1.05	(-) 28.70
2.	Body weight at puberty (kg)	50.00 ± 2.59	75.00 ± 2.50	(+) 50.00
3.	Age at first farrowing (months)	15.20 ± 1.98	13.24 ± 0.97	(-)12.90
4.	Litter size (numbers)	5.90 ± 0.35	8.33 ± 0.65	(+) 41.20
5.	Farrowing intervals (months)	7.76 ± 1.69	7.02 ± 1.65	(-) 9.50
6.	Birth weight of piglets (kg)	0.65 ± 0.02	0.97 ± 0.03	(+) 49.30
7.	Body weight at 12 months (kg)	55.00 ± 1.85	80.00 ± 1.75	(+) 45.50
8.	Net profit/pig (Rs.)	835	1461	(+) 75.00

boost in our country and it has to be made popular, following points may be given due consideration.

- Large white Yorkshire could be successfully raised and multiplied under farmer's condition. Hence, the pure breed or improved breed needs to be made available.
- For different areas, the alternate sources of feed in-gradients (energy and protein source) need to be identified to formulate the economical ration.
- Organized marketing system should be developed to protect the farmers from middle men and private sector. Constitution of Self Help Groups (SHGs) may be the best alternative.
- The use of pork and pork products should be popularized and possibilities for the creation of export markets should be explored after the postmortem inspection system.
- Awareness should be created for effective therapeutic and preventive measures against diseases like swine fever, foot & mouth disease, pneumonia, nutritional anemia, etc.
- Training facilities should be made available for pig growers regarding proper feeding, breeding, housing, health care, etc.

CONCLUSION

The information was collected from entire 170 LWY units established in rural areas. The age and body weight at puberty, age at first farrowing, gestation period, litter size and birth weights of piglet in LWY gilts were recorded to be 235±5.85 days, 75.0±1.70 kg, 401.33±2.50 days, 114 ± 0.15 days, 8.33±0.35 numbers and 0.97±0.05 kg respectively. Similarly, the mean farowing intervals, slaughter weight and net profit /head worked out to be 214.33±3.70 days, 80.0±1.75 kg and Rs 1461 respectively. The LWY breed took 28.7% less time during sexual maturity and 50% higher body weight than local. Similarly the birth weight and slaughter weight at 12 month was 49.3% and 45.5% higher in LWY than local respectively. The net return per pig was 79% higher in LWY than local one. The LWY breed maintained as scavenge fed livestock, showed highly significant ($P<0.01$) positive economic traits at each aspect than local breed and thus, have a great scope to improve the socio-economic status of weaker sections of the society. To produce pigs with better growth rate, farmer has to maintain superior breed, having better adaptability with proper feeding and management.

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