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# Pig farming system in district of Ambala: A case study Krishi Vigyan Kendra, Ambala, Haryana

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**Abstract**

Total of 18 training programs (14 on and 04 off) covering many facets of commercial pig farming, including breeding, housing, swine products, by-products, disease prevention and management, and marketing management, were organized between 2020 to 2025. During the five years of pig farming demonstration experience. It was discovered that this method produces high-quality protein and various minerals with few inputs, particularly for malnourished and growing youngsters. In addition to giving rural residents direct or indirect jobs, the swine business is a vital source of supplemental revenue for many marginal and landless farmers. Pigs, often known as salvagers or scavengers, transform waste materials into high-quality nutrients that humans cannot use. Additionally, it offers nutritional security, particularly to the impoverished in rural areas. Insufficient technological expertise (73.60%), high mortality in early life (60.80%), Poor litter size (57.60%), Poor body weight gain (51.60%), less availability of Breed (49.20%), Economic problems (42.80) and social taboos (41.20%) were the major constrains perceived by pig farmers in adaptation of piggery farming in these areas.

**Keywords:** FLDs, Pig farming, constraints, salvagers, scavengers, benefit cost ratio

## Introduction

The swine industry holds significant potential and opportunities due to its remarkable characteristics, including high fecundity (the capacity to generate a greater number of ova, whether or not they are fertilized), prolificacy (the ability to yield a larger number of live offspring in a single farrowing), a short generation interval, rapid weight gain, superior feed conversion efficiency, and an excellent dressing percentage in comparison to other livestock. The Indian Council of Medical Research (ICMR) suggests a meat consumption level of 34 grams per person per day, yet the average availability of animal protein per capita in India is merely 12.6 grams per person per day. There exists a significant disparity between the demand and the supply of animal protein, largely due to the partial ban on cattle slaughter in several states. The rising need for animal protein in light of our expanding population cannot solely be satisfied by ruminants, which are characterized by a relatively slow weight gain and longer generation intervals. In this scenario, pig farming presents a considerable opportunity to provide protein-rich food for millions of Indians.

Among livestock, pigs are the only animals raised specifically for meat, fitting seamlessly into mixed farming systems and complementing intensive crop production operations. Their remarkable capacity to effectively transform swill (leftover food), tankage (slaughter waste), and agricultural by-products into high-quality animal protein and other essential nutrients makes them the preferred choice for profitable livestock enterprises and for combating malnutrition among those living below the poverty line. Additionally, pig farming offers valuable opportunities for the unemployed rural population. As a result, pig farming has established a strong presence in the northern and northeastern states and is gaining popularity in many southern regions of the country.

Forage feeding involves allowing pigs to eat natural vegetation like grasses, herbs, roots, and shrubs found in pastures or forests. This method serves as an alternative to the conventional grain-based diets typically provided to pigs in commercial farming operations. By adopting this approach, it encourages more natural feeding habits and can deliver various advantages for both the pigs and the ecosystem. The integration of forage into a pig's diet is especially common in systems that prioritize animal welfare, sustainability, and a reduction in reliance on commercial feed sources. It can be incorporated into rotational grazing systems, where pigs have the opportunity to wander and forage in various areas of pasture, allowing the land to recover while providing nutrient-dense forage for the animals.

White beet (commonly known as sugar beet or fodder beet when utilized for livestock feed) is a type of root vegetable that is occasionally used as either a supplement or a primary feed source for pigs. Its high nutritional value, particularly in energy, makes it an effective choice for pig diets,

especially in areas where sugar beet is cultivated or available in excess. Sugar beets are usually cultivated for their sugar content, but their root also has substantial nutritional benefits for livestock when used as a forage or supplemental feed.

## Materials and Methods

The current study was carried out between 2020 to 2025 in the Ambala district of Haryana. From ten villages in the Sehzadpur, Ambala-II and Naraingarh blocks of the Ambala district, Pasiyala, Sabka, Panjel, Rathnedhi, Dehar, Tepla, Bihta, Samledhi, Nahoni, and Fatehpur. Small, marginal, and landless farmers were chosen at random to be interviewed. Data and information were gathered using a PRA approach. Training programs on many facets of pig farming were organized prior to the FLD and OFF campus in order to educate farmers, particularly young people from rural areas. A dual-purpose breed was chosen for the study during the FLD on large white Yorkshire's transition from traditional to commercial pig husbandry. Prior to the selection of skilled farmers, interested farmers and rural youth from rural areas received the appropriate training. Then, only farmers who had created their own perfect pig stall were given vaccinated, healthy piglets up to 2.5 to 3 months old. In addition to offering medical care and technological assistance, a KVK specialist frequently checks on the animals' performance and supplies them at the door. All of the healthy animals received vaccinations from specialists. Similarly, brucellosis, FMD, swine flu etc.

During the year 2020 – 2025 altogether 18 trainings (14 on and 04 off) programs on different aspects of Pig farming such as housing, feeding, breeding, health care management and preventive measures, swine marketing management were organized. The data of the cost and returns aspects of pig farming were collected through pretested structured interview schedule. The benefit cost ratio calculated for different years by applying the following formula:

$$\text{B. C. Ratio} = \frac{\sum n\, Bn(1-r)-n}{\sum nCn\,(1-r)-n}$$

Where B*n* represents the net cash inflows during the period n C*n* represents the net cash outflows during the same period and r is social discount rate here bank rate was considered.

## Results and Discussion

It is shown in the table no. 01, that mortality rate was highest in the year 2020 and lowest in the year 2025. After the appropriate training and regular FAS by the KVK specialist at farmers field were resulted in decreases in mortality rate significantly gradually during successive years. Reduction of mortality rate due to timely prevention and control of diseases in early life caused mortality and economical losses of the farmers. It was also observed that feeding of piglets during successive interval of 2.5 to 3.0 hours resulted in animals taking more rest as well as received extra milk at the time of feeding that converted in faster growth and helps in early life weaning. Similar trend were noticed by Boopathy *et al.,* (2019) [1] reported that rearing of pigs through scientific method improved socio-economic status and reduced morbidity percentage in early. Das *et al.,* (2021) [4] were also reported that pure-bred stock of large white Yorkshire breeds sustainable income generation of rural landless people. Modern pig farming reduced mortality rate as well as providing self-employment to the house women in villages Sasikala *et al.,* 2011 [6]. Senthil and Raja (2021) [8] reported that empowerment of rural youth through pig farming reduced un-employment of the villages people and improved nutritional security of SC community as a chief source of animals proteins of non-vegetarian being.

**Table 1:** Year wise details of FLD on Pig farming Conducted by KVK, Ambala

| Year | No. of Piglets (2.5 to 3.0 months old) distributed | No. of farmers | Mortality percentage (%) |
|---|---|---|---|
| 2020 | 100.0 | 50.0 | 11.74 |
| 2021 | 128.0 | 90.0 | 9.21 |
| 2022 | 83.0 | 34.0 | 8.70 |
| 2023 | 158.0 | 36.0 | 7.21 |
| 2024 | 160.0 | 50.0 | 7.14 |
| 2025 | 177.0 | 24.0 | 7.09 |
| Mean | 134.33 | 47.33 | 9.22 |
| SD | 37.13 | 23.17 | 1.88 |
| C.V. | 30.69 | 20.16 | 1.68 |

**Table 2:** Economics of Pig Farming

| Year | Enterprise (No. of units) | Breed type | Gross cost (Rs.) | Gross return (Rs.) | Net return (Rs.) | B.C.R. (%) |
|---|---|---|---|---|---|---|
| 2020 | Piggery (14) | LWY | 2,17,890.0 | 4,42,179.0 | 2,24,289.0 | 2.02 |
| 2021 | Piggery (12) | LWY | 2,05,700.0 | 4,39,166.0 | 2,33,466.0 | 2.13 |
| 2022 | Piggery (14) | LWY | 1,99,830.0 | 4,77,519.0 | 2,77,689.0 | 2.38 |
| 2023 | Piggery (11) | LWY | 2,01,000.0 | 5,20,903.0 | 3,19,903.0 | 2.59 |
| 2024 | Piggery (17) | LWY | 1,99,880.0 | 5,67,865.0 | 3,67,985.0 | 2.84 |
| 2025 | Piggery (19) | LWY | 2,06,720 | 6,03,104.0 | 3,96,384 | 2.91 |
| | | Mean | 204860.00 | 489526.40 | 284666.40 | 2.39 |
| | | S.D. | 7672.79 | 54871.56 | 60206.32 | 0.33 |
| | | C.V. | 6862.76 | 49078.61 | 53850.17 | 0.29 |

It was shown in table no 02, after improvements in technical knowledge and proper guidance to the farmers by the specialist to for rearing of Large White Yorkshire breed showing better performance and maximizes net return and minimized gross cost as compared to traditional breed. The gross cost were higher in year 2020 (Rs. 2, 17,890.0) and lowered in year 2025 (2, 06,720.0) gradually reduces due to better management, quality feed, timely vaccination, preventing early life mortality due to anemia and lowering feeding cost by addition of FAS and advisories on feeds sources. After addition of technical/scientific guidance to the farmers by the help of KVK expert resulted in gain more

profit and reduced cost of production and increased BCR ratio of the farmers. The above said study shown that, adaptation of scientific piggery farming by the small or medium pig farmers by standard feeding protocols and management practices succeeds more profitability and improved socio-economic status of their family. The same study were also reported that Chayavong (2011) [3], improvement of local pig production through adaptation of improved pig breed as well as proper nutritional standards improved net income per unit (Rs. 38560/ani/year) as compared to local breeds. Similar trends were also repoted by Panicker and Asha (2021) [5] entrepreneurship development of rural women through scientific pig farming net income gain was (Rs. 39168.0/ani/year) higher as compared to other enterprise dairy cows (29501/ani/year). Same results were also reported by Chabo *et al.,* (2000) [2] and Sayori *et al.*, (2022) [7].

**Table 3:** Constraints faced by Pig Farmers in Ambala district: n = 250

| Constraints | Frequency | Percentage | Rank |
|---|---|---|---|
| Lack of technical knowledge | **184.0** | **73.60** | **I** |
| Less availability of quality piglets and its feeds | 123.0 | 49.20 | V |
| High mortality in early life | 152.0 | 60.80 | II |
| Poor Body weight gain | 129.0 | 51.60 | IV |
| Poor litter size | 146.0 | 57.60 | III |
| Economic problems | 107.0 | 42.80 | VI |
| Social taboos | 103.0 | 41.20 | VII |
| Mean | 134.85 | 53.82 | |
| S.D. | 28.28 | 11.26 | |
| C. V. | 26.18 | 10.42 | |

Outcome of the present technology shown in table no. 03, it was observed that, constraints faced by pig farmers in pig farming in rural areas of the district, less availability of technical knowledge having rank (I), High mortality rate in early life (II), poor litter size per farrowing having rank (III), poor BW gain having (IV), good quality of Pure Bred animal and feed were also less availability have rank (V), economic problems (VI) and social taboos (VII) respectively. After continuous awareness in people of rural areas belongs in SC and Balmiki community the rural youths of villages shown awesome changes were observed in their social life after improvement in their income *viz.*, focusing in children education, stopped search of daily wages works and keeping happiness in their own family.

**Average performance of Growing Pigs**

It is evident from the above table 04, after training, awareness, knowledge up-gradation and skill development of pig farmers, performance pattern of pig farming body *vi z.*, weight gain and age of sexual maturity is very encouraging for the farmer due to providing proper nutrition, quality feeds and adopting scientific management practices to keep animals better performance as well as increasing herd size by the farmers due increasing market demand. FCR of the animals where reduced significantly after intervention of the KVK, poor quality of feeds resulted in retired growth and malnutrition increased in weaning period and reduced marketable weight for taking more time to sale the stock. After improvement in technical knowledge of the farmers animals are grown faster for weaning to preparing the animals for next crops. Similar trends were also observed by Boopathy *et al.,* (2019) [1] stated that Socio-Economic profile of swine farmers in Tamil Nadu improved by adaptation of good management pratices, nutrition and quality breed rearing. Sri *et al.,* (2024) [10] reported that good husbandry pratices and proper nutrition after farrowing growth of sow and piglets were improved. Sasikala *et al*., (2011) [6] concluded the adaptation of modern pig farming technologies improved the growth rate of piglets under growing stage.

**Table 4:** Productivity: Average yearly performance of Growing pigs

| Particulars | Traditional Practice | | | | | |
|---|---|---|---|---|---|---|
| | Year 2020 | Year 2021 | Year 2022 | Year 2023 | Year 2024 | Year 2025 |
| Numbers of Animals | 3.0 | 4.0 | 5.0 | 6.0 | 5.0 | 5.2 |
| Feed consumed/Day (Kg.) | 0.25 | 0.3 | 0.5 | 0.7 | 1.0 | 1.0 |
| B.W. gain (kg.) | 62.0 | 66.0 | 72.0 | 66.0 | 70.0 | 73.0 |
| Age of Sexual Maturity (months) | 12.0 | 11.0 | 13.0 | 12.5 | 13.0 | 15.0 |
| Litter size/Farrowing | 4.0 | 3.0 | 5.0 | 6.0 | 4.0 | 6.0 |
| FCR (kg.) | 6.2 | 6.5 | 5.3 | 5.5 | 5.8 | 6.1 |
| **KVK Intervention** | | | | | | |
| Numbers of Animals | 10.0 | 12.0 | 16.0 | 25.0 | 30.0 | 50.0 |
| Feed consumed/Day (Kg.) | 2.0 | 2.5 | 3.0 | 3.0 | 3.0 | 3.5 |
| B.W. gain (kg.) | 130.0 | 150.0 | 120.0 | 150.0 | 170.0 | 190.0 |
| Age of Sexual Maturity (months) | 10.0 | 9.5 | 9.2 | 9.5 | 8.5 | 8.7 |
| Litter size/Farrowing | 12.0 | 12.0 | 14.0 | 16.0 | 15.0 | 16.0 |
| FCR (kg.) | 5.2 | 5.3 | 4.2 | 3.8 | 4.1 | 3.4 |
| Technological Gap analysis (%) | 80.28 | 77.94 | 55.05 | 38.09 | 67.06 | 36.15 |

## Conclusion

The study revealed that small and landless farmers income was found to be increased due to adopting pig farming. Therefore, it may be concluded pig farming provides as ideal option for small and marginal farmers generate additional income through this low input and high output venture.

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