

Pig Farming- A Declining Remunerating Business in Assam

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Abstract

Animal husbandry and livestock sectors are crucial for rural livelihood development of a developing country such as India. Among the all-other domesticated species, pig farming or hog farming finds a new increasing demand in socio-economically weaker sections particularly in Assam and north eastern states due to its better potential to contribute in faster economic return to the rearer. In Assam pig is rear in urban area pig in intensive system and in rural as well as semi urban area pig rear in open system. Now a days, piggery farming get great importance because pig has highest fertility, highest fecundity, better-feed conversion efficiency, short generation interval and require small investment and low input.

Introduction

Animal husbandry and livestock sectors are crucial for rural livelihood development of a developing country such as India. India possesses one of the fastest growing livestock sectors, increasing agricultural domestic product. Among the all-other domesticated species, pig farming or hog farming finds a new increasing demand in socio-economically weaker sections particularly in Assam and north eastern states due to its better potential to contribute in faster economic return to the rearer. Pig farming requires low maintenance and exhibits inherent traits like highest fertility, highest fecundity, better-feed conversion efficiency, short generation interval and require small investment and low input. As per Livestock census 2019, total pig population of the state of Assam is 16,36,022 which is about 15.89% of total pig population of our country. Out of total population, 70% is traditionally raised in small farms. The share of meat production from pig is 18,730 tonnes against state's total meat production of 46,870 tonnes during 2016-17 while total requirement is 3,63,000 tonnes (Integrated Sample Survey 2016-17). There are 19 Breeding Farms under AH & Veterinary Department, Assam out of which 16 farms are functional. The objective of the "Pig Development Project for the state of

Assam (2019-2024)” is to increase the income of the Pig rearing farmer/ entrepreneur/ NGO/ Cooperative Society, etc. so as to achieve the Honorable Prime Minister’s plan for doubling farmer’s income. But proper implementation of the project is still missing. In nutshell, the pig rearing is still unorganized venture that requires science and technological applications to make it rise in global market.

The total pigs in the country have been declined by 12.0% over previous Livestock Census (2012). The reasons might be due to reluctance by the entrepreneurs to start a hog farm because of socio-cultural inhibition and inadequate availabilities. But in the 20th livestock census it has increased by 28% which marks a positive rise of pig farming in Assam. With increasing demand for human feed hunger and changing trends of consuming meat, thereby, posing a great challenge for piggery industry to produce that bulky pork requirement. But the situation has even more worsened due to poor maintenance of the pig farms and low productivity per animal. Thus, to increase the pork meat production per animal, cross breeding with improved germplasm can be a key source to achieve the vision. Farmers in Assam fear threat to existence of local pigs in the state in the wake of spread of African swine fever (ASF) which has currently affected pigs in 10 districts. Doom, an indigenous breed, has a population of around 4,000 in the state. Their population is largely concentrated in Dhubri district though some of them can be found in Bongaigaon and Kokrajhar districts. It has been reported that around 5,000 of 15,000 pigs that had died across Assam were of Local breed. And as the effect of ASF has caused huge losses, so commercial farms have started rearing the exotic breeds due to their high productivity.

Management of pigs:

1. Housing Management:

Housing plays an important role in the production of a good number of piglets per sow and also in prevention of a large number of infectious and zoonotic diseases. The basic objectives of housing are – Providing a good working environment for the employees working in the farm, Providing a healthy disease-free environment for the pigs and the piglets and Integration of feeding, breeding, watering, and manure handling systems.

2. Location of building:

The pig sites should be directed towards North – South. The structures should be on a raised and well drained. Bedding material should be comfortable and light and protect the pigs against cold. The boundaries should be properly fenced. Adequate water supply must be ensured. Sunlight and proper ventilation should be provided.

Sl. No.	Name of farm and location	Functional/ Non-functional	Nos. of Animal at present	Land area (Bigha)	Animal Holding Capacity
1.	Base Pig Breeding Farm, Rani, Guwahati	Functional	83	15	80
2.	Dirpal Pig Breeding Farm, Gogamukh, Dhemaji	Non functional	Nil	22	10
3.	Small Pig Breeding Farm, Khanikar, Dibrugarh	Functional	37	111	36
4.	Govt. Pig cum Poultry Farm, Diphu, Karbi-Anglong	Functional	42	122	110
5.	Sonaigaon Pig Breeding Farm, Udalguri	Functional	23	10	18
6.	Govt. Pig cum Poultry Farm, Sontila	Functional	64	35	100
7.	Pork production cum Pig Breeding-Farm, Dongkamoham, Karbi-anglong	Functional	80	25	100
8.	Pig Shed Farm Production Project, Chotto-Lakhindong, Karbi-Anglong	Functional	24	100	50
9.	Pig Breeding Farm cum Demonstration Farm, Sonapur, Kamrup	Functional	39	5	36
10.	Pig Breeding Farm, Bhatarmari, Kokrajhar	Functional	24	5	20
11.	Govt. Pig Farm, Kathiatoli, Nogaon	Functional	36	122	100
12.	Nucleus Base Pig Breeding Farm, Morigaon	Functional	36	34	80
13.	Base Pig Breeding Farm, Bajalbari, Jorhat	Functional	24	3	24
14.	Kuchdhowa Pig Breeding Farm, Goalpara	Functional	12	50	30
15.	Kapahtoli Pig Farm, Halowating, Sivasagar	Non functional	Occupied by CRPF, stock shifted to Pig Farm, Khelua	5	12
16.	Govt. Pig Farm, Gargaon, Sivasagar	Non functional	Damaged	13	24
17.	Base Pig Breeding Farm, Khanapara, Guwahati	Functional	30	-----	38
18.	Pig Farm, Khelua	Functional	62	7	120
19.	Pig Farm, Denyangmukh, Dima Hasao	Functional	24	7.5	30



3. Building systems

Three types of building systems are employed specifically –All in one / Birth to market building system – During all phases of their life span, the pigs are enclosed within one building system only. It requires low maintenance and it is budget friendly too. But the major disadvantage of this system is that there's high prevalence of infections, two – building plan – Two types of buildings are included under this plan: farrowing shed and the growing and the finishing shed. The piglets aged between birth to weaning remains in one building and the adult ones are then later on shifted to another building and three building system – Three types of buildings are included under this plan: farrowing shed, growing and finishing shed. It is the best system to prevent infections but it requires high maintenance.

4. Environmental requirements of pigs

Temperature – It gradually decreases with age. New born piglets require 30-35°C whereas growing pigs require 18-22°C and adult pigs require 16-20°C, Humidity – Humidity above 85% is considered to be critical for pigs. The optimum humidity range should be between 60-80% and Ventilation – Three types of ventilation can be followed: (a) Natural and roof ventilation (b) Forced draft ventilation (c) Exhaust ventilation

5. Constructional details –

Floors: Should be sloping and easy to clean. Three types of floors are used – solid, partially slotted and totally slotted. Solid floors are made of concrete but manure handling is difficult in this system. In Partially slotted floors, a little bit of cleaning is required whereas totally slotted floors do not require manure handling, Walls: Height of wall should be between 0.93 to 1.22 m, Roof: Can be made of asbestos sheets, tiles or corrugated sheets and should be a bad

conductor of heat and Doors: Width should be 75-90 cm and height 90 cm. Can be prepared from metal rods.

Management of different categories of swine:

1. Care and management of pregnant pigs:

Proper nutrition and ration should be provided. Records of farrowing date from the date of breeding should be maintained properly. A separate, non-slippery and clean sty with non-slippery floor should be provided for farrowing. The amount of feed given to the pregnant sow should be increased during 70-90 days of gestation. Proper bedding should be provided with chopped straw under the covered area. Deworming must be undertaken for the pregnant females 2 weeks before farrowing.

2. Care of sow at farrowing time:

The farrowing sheds should be cleaned and disinfected properly. Should be kept vacant for week. Amount of ration should be reduced by 1/3rd till farrowing. Withdraw feed 12 hours before farrowing. Fresh drinking water should be accessible. The sow must be kept comfortable at a temperature below 24°C.

3. Care of sow after farrowing:

The sow must be cleaned with lukewarm water as well as should be given to suckle her young ones. Oxytocin injection must be given in case there is no letting down of milk. Her first meal after farrowing must be given after 12 hours and the ration must be as earlier, i.e., bulky. Ration amount must be increased 200-300 g daily until she is fully fed. Regular monitoring of sow's rectal temperature in the first 2-3 days is important. Sows must be kept under cooler conditions. The udder and teats of sow should be dry and swabbed with a saturated solution of ferrous sulphate, zinc sulphate, and copper sulphate to prevent piglet anemia.



4. Care and management of gilts and sows:

Flushing (feeding liberally) should be carried out 2-3 weeks before breeding. Heat period of sow lasts for 2-3 days and should be bred on the second day of heat. Their breeding ration must

contain 16% crude protein, cereals and oil cakes along with adequate proportion of vitamins and minerals. The breeding shed temperature should be maintained at a lower temperature of 16° C.



5. Care of piglets at birth:

The breathing passage of the piglets must be cleared. The piglets must be mucous free and dry.

The navel cord must be cut at a distance of 2.5 cm away from the body with sterilized scissors, cord clamp should be applied and disinfected with tincture iodine. After farrowing, the piglets must be transferred to a warm area of about 25-30° C temperature. Bedding material must be clean, dry and hygienic. New born piglets' temperature must be maintained by providing infrared lamps. After 4-5 days, temperature is lowered to 26-29° C by raising the height of lamps.



6. Care and management of suckling pigs:

The 'needle' teeth should be clipped so not to cause injury to the sow. Identification of piglets is important. It can be done by painting with silver nitrate solution and later by permanent marking methods such as tattooing or ear notching. To prevent piglet anemia, iron dextran injection should be given on the 4th and 14th day. At only about one and a half weeks old, they start nibbling feed. When they reach the second week, dry feed consumption can also be provided. Those male piglets not required for breeding are castrated at 2-3 weeks of

age. Conventional weaning can be done at 8 weeks or early weaning at 4 weeks or split weaning before 4 weeks can be adopted.



7. Care and management of young stock:

Birth weight of the piglets must be recorded. Record of their weekly body weight must be maintained properly too.

Deworming must be done at 5-6 weeks old age and again one month later. Ectoparasitic infestation should be controlled and eliminated. Vaccination against important diseases must be undertaken at regular intervals.

Vaccination schedules of Swine –

Diseases and Vaccine	Age	Dose and Rout	Duration
Swine fever (Freeze dried vaccine)	3-6 weeks	1 ml I/M	One year
Swine Erysipelas	2 months	1ml S/C	One year
FMD (Tissue culture Vaccine)	2 months	2 ml S/C	One year
Brucellosis	2 months	2ml S/C	Life Long
Swine Influenza	At any stage	1 ml S/C	6 Weeks

Source: Vaccines for Veterinary application. Peter A.R. (2006)

8. Care and management of growing and finishing pigs:

The males, females and castrates can be fattened for meat purpose. Upto 15 pigs can be put together in a pen. Coolers can be provided during summers. Separation of poor growers can be done at the earliest. Deworming must be done at a regular interval of 2 months.

Expected live weight gain per month

Age in months	Live weight (kg)
1st month	4
2nd month	10

3rd month	20
5th month	50
7th month	85
9th month	120

9. Care and management of boars:

Should be at least 10-12 months of age before put to service. Boar: sow ratio must be 1:20. Each boar should be housed separately and provided with 1.5-2.2 square metre of sleeping area. Optimum number of services for boar is 2-4 per week. Hand mating should be generally practiced. Coolers must be provided during hot weathers. If temperature exceeds above 27°C, mating in early morning or late in the morning must be done. Breeding areas must not be provided with slippery floors. Fertility checkup routine must be maintained. Must be dewormed before breeding.



10. Pig breeding:

Selection of Breeding stock:

Breeding of indigenous (Local) pigs with other exotic or improved breeds depends on the production of pig's population of the country. The local pigs are less prolific but well adapted to local environment and production systems. Indigenous pigs are small in size, poor in litter size, birth weight, daily weight gain, carcass weight and feed conversion efficiency. Fancy traits like coat color and other traits of least importance can be avoided during the selection procedure of the breeding stock. The animal should be free from disease and physical defects or any genetic defects. The piglets should be healthy and should be related to each other. Selected piglets should be away from sows which is consistently farrowed and weaned large litters (More than 8) and have reached market weight in minimum time.

Selection of the Boar:

Male piglets should be preferably one month older than that of the female. The selected boar must be an offspring of a better producing gilts and should have a good pedigree history.

Boar should have a good testicular development (Two equal sized testicles) with good temperament and docility. It should express good performance traits required for breeding. The piglets should have sound and strong feet and legs.

Selection of Sow/Gilt:

Sow must be selected from other pigs having good mothering ability with quite behavior. Sow should have well developed udder with 12-14 functional teats and at least 6 teats in each row evenly distributed on belly side. The gilts should have adequate length and depth of the body, thick, well-muscled hams and should have a prominent neck. The sow must be ready for repeated breeding after the end of lactation. The sows must have sound feet and legs. The sow must be free from all abnormalities.

Mating:

The average length of estrous cycle is 21 days (18-24). The length of the estrous period is 2-3 days. During estrous, the female shows following as heat signs: Frequent urination, low appetite, erection of ears and restlessness. Characteristic grunt or roar associated with heat. Swelling, reddening of vulva and mounting on pen mate. Valvular discharge and immobility (Standing reflex) when normal pressure is applied on the back. Allotted boar should be placed on either 2nd or 3rd estrous cycle. Best time for service is 2nd half of the 1st day and 2nd day of heat. The female should be double served at 10-12 hours interval and boar should be taken out from the female room. Mating can take 3-7 minutes. The gestation period is 114 days and can be rebreed after 1 month of the weaning by avoiding post-partum heat. The boar can be effectively used up to 18 months of age while female can be replaced after 4th farrowing. The normal boar: sow ration is 1: 15-20 sows

One commonly used method for mating without boar is the Artificial Insemination, a process in which semen is collected from male animal, processed in the laboratory and finally introduced to the sow under heat with the help of instruments for the purpose of making female animal pregnant. The best time of insemination in pig is after 4-6 hours of showing standing reflex (immobility) when normal pressure is applied at the back. Second insemination is successive after 10-12 hours of the first.

Marketing:

The demand for pork meat in assam is indefinite and the meat plays a major part in catering to the demand. Pork has its own high economic viability and pork business can be started with very low investment. During the festival times, the demand for meat rises up to 7 folds so pig farming can be proved as profitable business in Assam. Moreover, hog farming has created employment as a supplementary activity to the youth of Assam.



Conclusion

Pig farming business is no doubt can prove to a profitable market in Assam. However, there is a huge gap between the demand and production which need to be lesser for better and blissful future. Stakeholders of pig farming should develop serious concern to aware about its success to financially deprived sector of the society. The region's protein requirement cannot be fulfilled only by the common sources. As a result, pork processing and production has huge demands in the state. Pork is still a dominant meat among the economically and socially deprived communities under intensive management. Therefore, there is a huge scope of pork meat business in Assam. So conservation of different pig breeds can serve as a very important economic asset globally.

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