



Review Article

SCOPE AND POTENTIALS IN PIG HUSBANDRY

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Abstract: Pig production among other species has a high potential to contribute to high economic gain. Piggery farming is one of the most important occupations which can give the returns within a very short period of time. Pigs are efficient converters of feed and capable of high rates of growth. A sow can easily produce 8-12 piglets per litter after a gestation period of 110-120 days (average 114 days) and may produce 2 litters per years, if reproduction is managed well. However, scientific management has the key role to play for overall performance of the piggery sector.

Keywords: *Pig production, Piggery farming*

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Introduction

Agriculture and animal husbandry are the backbone of Indian economy. Livestock plays an important role in the rural economy by supplementing family incomes as well as generating employment opportunity for the educated youth, retired persons, landless labourers, small and marginal farmers and women. Pig rearing is very common in India, particularly among the tribal people. After the broilers, piggery sector is known for its efficiency in being good feed converters. It is the most important source of meat production. Apart from producing meat, it is also a source of bristles and manure. According to the current census, the total pig population in the country is 9.06 million, which has declined by 12.03% over the previous Census. Pig farming in India is primarily a small scale unorganized rural activity and is an integral part of diversified agriculture sector. The performance of pig farming in Assam and other North Eastern states of India is more compared to other states in India. Pig population in the N North-Eastern (NE) region is above 38.42 percent of country's total and in Assam it is 15.89 percent. The share of meat production from pig is 17481 tonnes as against the total meat production of 44813 tonnes in Assam during 2015-16 (Integrated Sample Survey Report 2015-16). The majority of the people of the North-Eastern (NE) region of India are non-vegetarian and among them a good number of people consume pork [1]. This is because of the high proportion of tribal masses in North-East India. As such pig farming has always been an integral part of the life of these people [2]. The North-Eastern region provides ample scope for piggery development. The tribal people of the North East traditionally rear pigs. 90% of the inhabitants of this region are meat-eaters. There is no religious taboo against pork consumption in NE region. Pig farming in North- Eastern states not only contributes to the livelihood security of the rural masses but also plays an important role in improving the socio-economic status of the tribal population and weaker section of the society [3]. The meat producing animals like sheep, goat and chicken only cannot fulfil the requirement of meat. Due to some biological advantages like prolificacy, faster growth, short generation interval, dressing percentage, the pig plays an important role for increasing meat production in this region. The total pork requirement in India is around 0.88 million ton. However, the country produces 0.33 million ton of pork in 2012 (FAOSTAT, 2014). So, a huge gap lies between production and requirement. So, there is huge demand for the piggery sector in India.

As per Department of Agricultural Research and Education (DARE, India) report, during 2012-13; the average meat yield of pig in India was 35 kg per animal which is about 55% less than the world average of 78.20 kg per animal. Most of people consume pork from unorganized sector in form of locally raised fresh pork meat. The selling of pork is not widely distributed in the organized retail sector. Consumption of fresh local meat is more prefer by the north eastern people of India which may be because of cultural perceptions or consumer perceptions [4].

Demographics

There is a sharp declination in population of number of pigs. Of the total livestock production in India, pig's contribution is around 2.01%. Out of these population 4.96 million are male, and 5.33 million are females.

Pig breeds of India

Several indigenous and exotic breeds of pig are available in India. Commonly found exotic breeds are Large white Yorkshire, Hampshire, Landrace, Duroc and Large Black. These breeds are comparatively larger than the indigenous pig breeds. Registered pig breeds in India are Ghongroo, NiangMegha, AgondaGoan, TenyiVo, Nicobari, Doom, Zovawk, Ghurrah, Mali, Purnea. Out of this total of ten pig breeds registered till now by ICAR-National Bureau of Animal Genetic Resources (NBAGR) India, four breeds are from NE region viz., NiangMegha, TenyiVo, Doom and Zovawk. Production performance of indigenous pig breeds is poor, but these pigs have some good traits like good mothering ability, disease resistance, and early maturity etc. Therefore, genetic improvement of the indigenous pig breeds through selective breeding and cross breeding is urgently needed.

Pig breeding system

Pure breeding and cross breeding system are followed only in case of exotic breeds such as Hampshire, Landrace, Yorkshire, Duroc. Cross breeding among these breeds is practised for commercial pork production. Conservation and genetic upgradation of the pig germplasm in one hand and changeover to intensive system without, however, jeopardizing the zero-input system of pig rearing by the resource poor farmers.

Breeding plan for pure indigenous pigs

For conservation and improvement of indigenous pigs of Assam breeding plan would be as under with two strata only. At the top stratum elite herd of pure indigenous pig are selected. The selected breed would be maintained with a minimum of thirty breeding sows. There will be no middle stratum. The bottom stratum would be the farmers herds preferably which are maintained in designated clusters in the breeding tract. Excess progeny over the replacement requirement would be distributed to the farmers in the designated clusters. Also selected boars of the nucleus herd would be used to breed the sows in the bottom stratum i.e. in the farmers' herds. Best of the best animals found in the farmers' herds would be introduced in the nucleus herd as and when felt desirable to prevent inbreeding and to induce genetic variation and to induct good genes.

Breeding plan for crossbreeding

Separate nucleus herds, at the top stratum, one each for the male and the female line will be established. There will be multiplication farms of crossbreds at the middle stratum for distribution of their progeny at the bottom stratum i.e. the primary producers/ farmers/ entrepreneurs. The elite stock at the nucleus herds will be continuously improved upon for superior performance and better adaptability by scientific selection and breeding. Breeding plan would be devised to minimize inbreeding. In order to induce genetic variability and induction of good genes, provisions should be made to introduce few superior animals of the breed from outside the elite herd. Study would be made to carry out progeny testing for selection of superior boars. Earlier is better. Crossbreds of male and female lines of the nucleus herds will be further propagated in the multiplication farms at the middle stratum for commercial production of pork at the bottom stratum i.e. the primary producers/farmers and entrepreneurs. The breeding plan for crossbreeding of pigs should not be confused with that of upgrading. In case of upgrading, the non-descript animals maintained by farmers would simply be upgraded by crossing with designated pure breed maintained in nucleus herds.

Breeding plan for superior exotic breeds of pigs

The breeding plan for improved pure breeds of pig would be nothing different from that of the breeding plan for crossbreds except that the middle stratum would consist of the multiplication farms of the progenies of elite animals in the nucleus herd(s).

General consideration for pig breeding

1. Inbreeding should be avoided.
2. Cross breeding with proper plans can be done to get maximum heterosis.
3. First one or two heats of gilts should be skipped for breeding the animals.
4. Breeding herd should be free from leptospirosis and heterosis.
5. Proper vaccination of the animals gives better result for any breed improvement programme.

Pig housing system

Pigs are adversely affected by climatic factors viz., low environmental temperature, high wind speed, wet floor etc. A pig farm therefore should have ample protection against environmental stress, good hygienic condition and sufficient space. Pig sty should be well ventilated and properly spaced.

Management practices for pig farming

Well established scientific practices should be adopted to reap maximum benefit from pig farming. Some of the recommended practices are:

Care during Pregnancy

Pregnant sows should be given special attention one week before farrowing. Provision of adequate space, feed, water etc should be taken care of. The pregnant sows as well as farrowing pens should be disinfected 3-4 days before the expected date of farrowing. The pregnant sows should be placed in the farrowing pen after bedding it properly.

Pig Feeding

Feed plays a very important role in successful pig production. Feed alone represents about 70-75 percent of the total cost of producing hogs. The productivity and reproductive performance of pig farm depends on the quality as well as quantity of feed supplied to the pigs. The quality of the carcass produced for the market determines the profitability of the pig farm. In scientific rearing, a balanced ration contains carbohydrates, proteins, fat, minerals and vitamins with sufficient cleaned water. Maize, wheat bran, rice polish, broken rice, ground nut cake, fish meal, mineral mixture and salt are the common ingredients of feed. Price relationship vary greatly depending on seasonal availability, global and local market. Use of local and crop by-products as livestock feed is necessary for profitable production. Non-conventional feed resources (NCFR) refer to those feed that have not been traditionally used for livestock feeding. Some locally available NCFR that is used in pig feeding are Tapioca (*Manihot esculenta*), sweet potato (*Ipomoea batatas*), Colocasia (*Colocasia esculenta*), kitchen waste/food waste, juguli.

Record keeping

Record keeping of farm activities is most important for evaluation as well as for the improvement of the production. Recording of reproductive, productive performances of pig's treatment/vaccination, feed, labour etc. are very essential. Recording of pedigree are the prerequisite information for formulation of breeding plan in a farm.

Management of piglet diarrhoea

New born piglets often suffer from diarrhoea. It may be due to infectious cause or dietary cause. Dispersible Probiotics and zinc preparation help to prevent/ cure diarrhoea.

Incidence of agalactic (no milk) condition of Sow

Just after farrowing, sow shows no milk in their teat. Agalactic condition in sow is due to infectious, hormonal or nutritional causes. Frequent removal of faeces from farrowing pen right from two weeks before farrowing till weaning stage can avoid smearing teats with faeces.

Application of research

Piggery sector, which is one of the most important sectors in NE region of India is critically reviewed in this article.

Research Category: Veterinary Science

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Study area / Sample Collection: College of Veterinary Science, Khanapara, 781022

Cultivar / Variety / Breed name: Pigs

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Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

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