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भारत सरकार/Government of India
ग्रामीण विकास मंत्रालय/Ministry of Rural Development
ग्रामीण विकास विभाग/Department of Rural Development
ग्रामीण आजीविका विभाग/ Rural Livelihoods Division
(<https://rural.nic.in>)

सातवीं मंजिल, एन.डी.सी.सी-II भवन/7th Floor, N.D.C.C -II Building
जय सिंह मार्ग, नई दिल्ली-01/Jai Singh Road, New Delhi-01
दिनांक/ Dated: 25th May, 2023

To,

The State Mission Director/Chief Executive Officer
State Rural Livelihoods Mission
All States/ UTs.

Subject: Technical bulletin on Pig Rearing Management Producer.

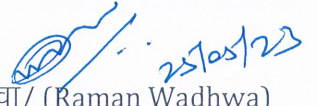
Madam/Sir,

I am directed to enclose herewith the technical bulletin on Pig Rearing & Management for information and further necessary action and sharing it with the concerned staff, CRP's and stake holders in state for enhancing their extension.

The states may also have a webinar on this so that the message reach at the level of implementation.

Yours faithfully,

Encl.: As above.


रमन वाधवा/ (Raman Wadhwa)
उप-निदेशक (प्रशासन)/Deputy Director (Admin)

Copy to: PPS to AS, RL, MoRD

Pig Rearing & Management

Volume -1: Breeding Management



National Rural Livelihood Mission Ministry of Rural Development

Table of Contents

Major aspects of Care & Management of Pigs:

Breeding Management:

Selection of Breeds:

Major Breed's:

Management of Boar:

Selection:

Management:

Management of Sow:

Selection:

Management:

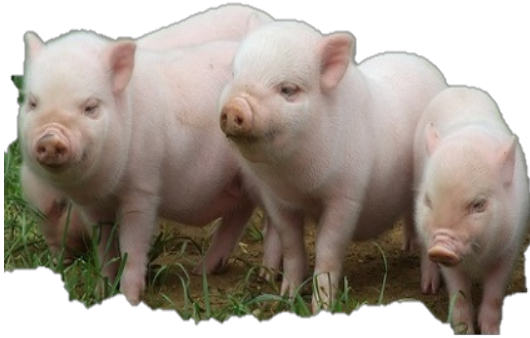
Care for Pregnant sow/gilt:

Signs of approaching 'farrowing

Care at and after farrowing:

Care and Management of Piglets:

Introduction



Pig farming has several advantages and can play a crucial role in progressive agriculture. India, for instance, has a population of pigs that contributes to the country's economy by providing pork and bristles, a valuable export commodity. Pigs are capable of converting inedible feeds, forages, and certain grain byproducts obtained from mills, meat

byproducts, damaged feeds, and garbage into valuable nutrition. Their adaptability to diversified and intensified agriculture makes them a popular choice for farmers. Moreover, pig manure is a nutrient-rich fertilizer that can enhance soil fertility, promoting sustainable agriculture practices.

Pig meat is a very big source of animal protein. Due to some biological advantages like prolificacy, faster growth, short generation interval, dressing percentage etc. pigs can play an important role for increasing meat production.

The principles of modern livestock management are based on the fact that production characteristics of livestock are not entirely dependent upon heredity, but it is influenced by environment also. Heredity provides the ability to exhibit certain characters and the environment provide the opportunity to express these characters.

Major aspects of Care & Management of Pigs:

The four pillars of livestock management include breeding, feeding, Housing and disease management.

- **Breeding Management:** it is very important management aspect which affects the economics of the farm.
- **Feeding Management:** is the most important pillar of livestock management because it constitutes 70-80% of cost of milk: or meat production.
- **Housing Management:**
- **Prevention and control of disease:**

Breeding Management:

Breeding management plays a crucial role in the success of pig farming ventures by ensuring the production of high-quality piglets that meet market demands. With the increasing demand for pork products in India, it becomes essential for farmers to focus on effective breed management strategies to maximize their profits and contribute to the sustainable growth of the industry.

In this technical bulletin, we will cover various aspects of breed management, including the selection of breeding stock, breeding methods, estrus detection, proper timing of mating, and genetic improvement. We will also discuss housing

requirements, nutrition, health management, and record-keeping, all of which are vital components of successful breed management.



Selection of Breeds:





Selection of breed is the key activity of the farmers. The productivity of a farm depends on both foundation stock as well as on the management. The breeding stock should have the quality of high litter size, strength and vigor of litters, good mothering ability, temperament, grain and feed efficiency of the progeny.

The following points are important for selection of a breeding stock:

- Select from known stock and should be free from disease and physical defects.
- Select from sows, which wean 9 -10 or more piglets per litter and are known to be good mothers and first farrowing at one year of age and farrowing interval of seven months.
- Select at weaning period (3-5 months of age).
- Male and female should not be from same parents.
- Select fast growing weaners.
- Select biggest male from the litter.
- Avoid gilt having supernumerary or inverted teats, and fat deposited at the base of the teats.

Major Breed's:

Breed Name	Use	Characteristics	
<i>Hampshire</i>	Meat	Black in color with a white belt across the shoulder extending up to the forelimbs. Ears are erect. Well-muscled and rapid growers.	
<i>Large White Yorkshire</i>	Meat	large sized and most extensively used exotic pig breed in India. Their body is solid white colored with erect ears, dished face and snout of medium lengths. Excellent pig breed for the purpose of cross breeding.	
<i>Large</i>	Meat	With its lop ears and long, deep body, the	

<i>Black</i>	<p>Large Black is Britain's only all-black pig .</p> <p>Extremely docile, and very hardy, it is ideally suited to simple outdoor systems. Ideal for a wide range of climatic conditions.</p>	
<i>Duroc</i>	<p>Meat Moderately red colored with shades varying from a golden to cherry red color with medium length and drooping ears. Duroc pig is well-known to have excellent weight gain rate and a high feed converter.</p>	
<i>Ghungroo</i>	<p>Meat Black colored with typical Bull dog face appearance.</p> <p>Popular in north Bengal because of high prolificacy and ability to sustain in low input system.</p> <p>This breed/strain produces high quality pork utilizing agricultural by-products and kitchen wastes.</p>	
<i>Doom</i>	<p>Meat black in color and have a short, concave snout</p> <p>indigenous germplasm of Assam which is adaptable to local climatic conditions and thrives with very low to negligible nutritional input and is capable of surviving in a migratory scavenging system. Very popular among local communities of the Assam for rearing.</p>	

Management of Boar:

Selection:

When selecting boars for breeding purposes, several important criteria should be considered. These criteria are crucial for ensuring the production of high-quality offspring and maintaining genetic diversity within the breeding program. The following points outline the key factors to consider:

Genetic Background:

- Boars should be the offspring of superior producing gilts and sows.
- Selecting boars with a strong genetic lineage helps ensure desirable traits are passed on to the next generation.

Litter Size and Weight:

- Boars should come from litters with a minimum size of 8 piglets.
- The weaning weight of the litter should be at least 72 kg.
- These criteria indicate good litter performance and demonstrate the potential for optimal growth and development.

Preliminary Selection at 5 Months:

- Boars meeting the above criteria should undergo preliminary selection at 5 months of age.
- The boars must have a body weight of at least 60 kg at this stage.
- This selection step identifies boars that exhibit adequate growth and development, ensuring their suitability for further evaluation.

Final Selection at 7 Months:

- The final selection of boars should take place at 7 months of age.
- Boars should have attained a body weight of at least 90 kg by this stage.
- This ensures that only the most robust and mature boars are chosen for breeding purposes.

Physical Soundness:

- Selected boars must be free from any physical defects or abnormalities.
- Physical soundness ensures optimal reproductive performance and the transmission of desirable traits to their offspring.

Avoiding Inbreeding:

- Breeding males and females should be selected from different litters.
- Boars should be periodically changed, preferably every two years, to avoid inbreeding.
- This practice helps maintain genetic diversity within the breeding program and reduces the risk of detrimental genetic traits.

Management:

Proper management of boars and gilts assist in the maximization of fertility and longevity. To develop physical hardening and to stimulate sexual arousal and libido boars can be shifted to different locations and provided fence-line contact with cycling females. In addition to these:

- Housing in individual pen with free access to water but avoid dampness
- Scrub and wash the boars daily
- Perform periodic trimming of feet and tusks. The bolt cutters can be used to remove tusks of boars to avoid injuries to sows and attendants.
- Boar should be put in service when it attains 8-9 months of age.
- Additional feeding 2 weeks prior to breeding season
- Provide feed after service not before service

- Boars should be fed at a level of energy that will prevent excessive fat deposition. The feed requirements include both the demands for maintenance and reproduction. During off-season the boar should be given plenty of grasses and legume hay and 2kg of concentrate mixture. An additional 0.5 kg of concentrate may be given 2 weeks prior to breeding season. This practice should help ensure that they are physically adept and sexually active.
- Boar should have a good libido i.e he should be aggressive in desire to mate. He must have the ability to mount correctly, erect the penis properly and properly enter the gilt.
- Periodical tests for Brucellosis, Leptospirosis and other sexually transmitted diseases should be conducted.
- Boar sow ratio should be 1:3
- Allow one service per day and provide outdoor exercise regularly
- Boars must be replaced when they become too large to serve most of the sows on the farm.
- Boars usually have a maximum working life of between 18 and 24 months. This means they should be replaced when they are 30 to 36 months old.

Management of Sow:

Selection:

When selecting gilts for breeding purposes, several important factors should be considered. The goal is to choose gilts with desirable traits that contribute to successful mothering ability and overall reproductive performance. The following points outline the key criteria for selecting breeding gilts:

Mothering Ability:

- Gilts should be chosen from mother pigs with a proven track record of good mothering ability.
- This is demonstrated by large litter size and optimal weight at weaning, indicating their capacity to raise healthy and thriving piglets.

Teat Quality and Quantity:

- Gilts should possess 12-14 evenly spaced and sound teats.
- The number and quality of teats are essential as they determine the gilt's ability to nurse and provide adequate milk supply to the piglets.

Growth Rate:

- Select gilts that exhibit a good growth rate during their rearing period.
- This indicates their ability to reach sexual maturity in a timely manner and contribute to the breeding program at the appropriate age.

Femininity:

- Gilts should display femininity in their physical characteristics.
- This includes a well-developed, feminine appearance, indicating their potential for successful reproduction and the production of healthy piglets.

Management:

The breeding sow should be very carefully raised to become a mother and that too very good at that. This can be achieved by carefully following certain guidelines which will help achieve the purpose. Some of salient raising techniques include:

- Gilts should be bred in such a way so as to get first litter by 12-14 months of age and they achieved a body weight of 100 kg.
- At the end of the breeding test, energy intake of selected gilts should be restricted to prevent overweight conditions. For these gilts can be moved to new pens and exercise daily.
- Exposure of gilts to boars daily, beginning between 160 and 180 days of age will help stimulate the onset of estrus.
- Breeding should be delayed until the second or third estrus to increase the probability of large litters and prevent dystocia.
- Breeding sows may be fed with grains, fish meal. skim milk or, butter milk may be given 2-3 weeks prior to breeding to allow a body weight gain of 200-300 gm/day.
- Just prior to breeding enhanced feeding will increase ovulation rate and fertility rate.
- Older sows may be used for breeding season.
- Older sows may be used for breeding with younger boars.
- Gilts that do not conceive after mating at two estrous periods should be removed from breeding cycle.
- Likewise, gilts that have not expressed heat by 9 months of age should be culled.

Care for Pregnant sow/gilt:

- Pregnant gilts/sows should be housed in groups at initial stage and later on shifted to separate pens just prior to farrowing.
- Pregnant gilt/sows should be fed balanced ration, 3-5 Kg concentrate (with 14 – 15% Cp) during last part of pregnancy to recoup loss, for foetus growth and maintenance of themselves.
- The sow/gilt should be dewormed 15 days before the expected date of farrowing and prior to admitting into the farrowing pen.
- Pregnant sow should be shifted to clean, dry farrowing pen 2 weeks before the expected date of farrowing. The farrowing pen should be cleaned and disinfected properly before transferring the pregnant sow/gilt. Clean and disinfect the farrowing pen with a solution of 2 % of phenyl lotion and keep it vacant for a week.
- Before transferring, animal as well as should be cleaned and thoroughly disinfected. Scrub the under surface, sides, interdigital space and udder to

remove dirt, eggs of parasites, disease germs etc. with soap and water just before moving into the farrowing pen.

- The farrowing pen should be dry, well ventilated and lighted. Bedding material should be provided in the farrowing pen for which chopped straw can be added. But un-chopped straw is not advisable as piglets get entangled. Light bedding materials should be provided during winter season.
- Arrangement of heat may be made in extreme cold.
- Pregnant animals should be exercised regularly.
- Farrowing sty should contain guard rails to prevent mortality of new born piglets from crushing by mother.
- Sufficient clean water should be supplied throughout the day and night
- Observe the sow/gilt constantly during the last 2-3 days of expected date of farrowing and allow her to farrow normally.

Signs of approaching 'farrowing

Signs of approaching 'farrowing are restlessness and abdominal contractions, attempts make nest from bedding material, the sow tends to paw the floor, teats become prominent with a change in texture of udder, teats are filled with colostrum, chewing any objects in pen due to nervousness and frustration, expulsion of the blood-stained fluid from the vulva, slight increase in rectal temperature and twitching of tail.

Care at and after farrowing:

- Prior to farrowing time, the ration of sow should be reduced to half and should contain laxative ingredient like wheat bran. Feed should not be provided to the sow before 12 hours of farrowing. The sow should be left undisturbed at farrowing and may be helped during emergencies.
- Veterinary aid should be called for only when there is farrowing problems.
- Wipe the piglets with a clean cloth to remove the phlegm.
- The Naval cord should be tied and cut at 2.5 inches away from the body and apply Tincture Iodine.
- Normally piglets start suckling within 10-15 minutes after birth. Immediately after farrowing, teats of the sow should be cleaned with dilute Potash solution and allow new born to suck colostrum's sufficiently. Their sucking will encourage the sow to let down her milk.
- Remove piglets from a nervous sow and allowed to suckle under supervision. Weak piglets should be assisted/helped to suckle the mother.
- Attendants should be ready to save the piglets from crushing.
- If the milk produced by the sow is too little to meet the needs of the piglets or the sow completely neglects the piglets, they should be put on another sow or reared on cow or goat's milk.
- Artificial heat may be provided by using an infrared lamp / ordinary electric bulb during cold and rainy season to avoid death due to chilling.
- Once the farrowing is over, the placenta should be removed from the pen and the animal and pen are to be washed with a mild disinfectant solution. The time

taken for expulsion of litter vary from 1 hour to 5 hours. The interval between the birth of the first and that of successive piglets vary from a few minutes to 3 hours. Generally, placenta is shed only after all the piglets are born. Expulsion of placenta is usually within 3 hours after expulsion of fetus.

- Brood sows should be given well-balanced rations. Feeding should be started in small quantities of concentrate mixtures along with laxatives like wheat bran. Half of the ration can be given to the mother 12 hours after farrowing and full ration can be provided after 24 hours.

Care and Management of Piglets:

- Piglets should be nursed after birth. They nurse 8-10 times in a day. Ensure that all the piglets get colostrum for the first five days of life.
- Take care of new born piglets by providing guard rails.
- Inject 0.5 ml of injectable iron (Inferno) to each piglet on 4th day and 1 ml on the 14th day. The ideal method of administering Oral Iron Supplement, to the newborn piglet, is to rub the liquid iron onto the udder of sow. For this udder is swabbed with concentrated solution of FeSo₄ (0.5 kg / 10litres of water) or 2.1% FeSo₄ in creep mixture. When the piglets move from teat to teat they will slowly absorb the iron thus reducing the chances of any toxic reaction due to excessive amounts of iron.
- Needle teeth (4 pairs) of the piglets should be clipped at least 12 hours after birth with the help of a tooth cutter (Nipper) to prevent teat injury of the mother.
- Vaccinate the piglets as per recommended vaccination schedule.
- Piglets should be kept under strict hygienic condition to protect from piglet scour.
- Starter ration should be provided from 3rd week onwards.
- Weaning should be done at 30 - 42 days of age.
- Castration of male piglets should be done 10 days before or after weaning, preferably at the age of 3-4 weeks