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INTRODUCTION

Pig Farming is the breeding, feeding, care and management of domestic pigs as livestock, and is a branch of Animal Husbandry.

Pig farming is a promising source of meat production with their inherent characteristics of faster multiplicity, higher growth rate and feed conversion ability. Pig farming is well adapted to both diversified and intensive agriculture in rural and semi-urban areas.

Pigs are more acceptable to rural people contributing substantially to the rural well-being and self-sufficiency due to the profitable returns to the small and marginal farmers, since pig requires comparatively small investment on housing and equipment compared to other livestock. Pigs are prolific breeders with 2 farrowing every year and commonly farrowed from 8-12 piglets every farrowing. The carcass return is quite high as 70-80% of live body weight. The faeces of pigs are useful in maintaining soil fertility and feed for fishponds.

Pig farming can be adopted by uneducated youth, part time earing for educated youth. Rural housewives. A farmer can rear pigs either for breeding or for fattening purpose. Pigs converts inedible feed products to valuable nutritious meat.

BREEDS OF PIGS REARED IN MEGHALAYA

The indigenous pigs are mostly reared by rural population or semi-urban population. Improved breeds are now being used for grading up the indigenous breeds.

Common pig breeds found in Meghalaya:

1. **Hampshire**: It is characterized by erect ear, a black body with a white band around the middle covering the front legs. It is heavily muscled and lean meat breed. Male pigs can reach upto 250 kgs and female pigs can reach upto 200 kgs. Average litter size 8-10 piglets.



2. **Large white Yorkshire**: It is large in size, has white or pink skin colour, dished face and erect pink ears. Male pigs average weight is 300-350 kgs and female pigs average weight is 250- 300 kgs. Average litter size 10-12 piglets.



3. **Landrace**: It is a long, lean and white pig. The head is long and narrow, the ears are large and heavy and hang forward close to the snout. The back is slightly arched. Prolific breeders. . Male pigs average weight is 300-400 kgs and female pigs average weight is 250- 320 kgs. Average litter size 10-12 piglets.



4. **Duroc**: It is reddish-brown in colour, muscular with drooping ears. . Male pigs average weight is 250-300 kgs and female pigs average weight is 180- 250 kgs. Average litter size 8-10 piglets.



5. **Ghungroo**: It is black in colour with bulldog like face.. Male pigs average weight is 300- 350 kgs and female pigs average weight is 250- 300 kgs. Average litter size 8-12 piglets.



6. **Tamworth & Desicross**: It is black in colour with slightly drooping ears. Male pigs average weight is 190-240 kgs and female pigs average weight is 160- 200 kgs. Average litter size 8-12 piglets.
7. **Niangmegha** : It is from Khasi, jaintia&garo hills of Meghalaya. It is reared for meat and bristles purpose. The animals have typical wild look with erect bristles on dorsal midline and small erect ear. Average litter size 5-6 piglets.



SITE SELECTION FOR REARING OF PIGS

1. The site should be at an elevated place that cannot be flooded by rain water.
2. The site should be protected from the sun (surrounded by trees) and have ample fresh air.
3. The site should be away from the residential area.
4. The site should have well connected by roads.
5. The site should be suitable for manure disposal, connected to reliable water and electricity sources.

SHED CONSTRUCTION

1. The construction of a pig sty mainly depends on the climatic conditions.
2. The pig sty should be constructed with its length axis in an East-West direction.
3. The floor of the pig sty should be hard and impervious to water and easy to clean.
4. The floor should be made up of concrete and slope towards the drainage.
5. The roof should be made up of asbestos sheet and it should be rain proof.
6. The pig sty should have good ventilation, no overheating, free from smells and dampness.
7. A pig farm must be divided into different pens/stys.
 - a) Sow sty
 - b) Stud boar sty
 - c) Dry sow and gilt sty
 - d) Farrowing sty
 - e) Fattening sty
 - f) Weaner sty
 - g) Sick animal sty
8. Strict Bio-Security measures should be followed at the farm. Footbaths must be constructed at an entrance.

Floor space requirement for pigs:

Sl no	Type of animal	Covered area per animal (m ²)	Open area per animal (m ²)
1	Boar	6.25-7.5	8.8-12
2	Fattening pig	0.6- 1.8	8.8-12
3	Farrowing sow	7.5-9	8.8-12
4	Dry sow/ Gilt	1.8-2.7	1.4-1.8

Creep Space: It is a space where piglets can enter. It must be made in the corner of the pen and should be provided with a wooden slab 25-30 cm above the floor level. Lighting can also be provided in creep area to give warmth to new born piglets. Guard rails are made up of tubular iron rod and fixed 25-30 cm away from the wall and above the floor so that the piglets can run under the rail when the sow lies down in order to avoid crushing of piglets.

BREEDING & SELECTION OF BREEDING STOCK

There are different types of breeding system namely:

- **Pure breeding:** When a male and female of the same breed undergo mating is called pure breeding. This helps in maintaining the original genetic makeup of the pure breed.
- **Cross breeding:** when a male and female of two different breed undergo mating is called cross breeding. This would increase litter size, livability and rate of growth.
- **Grading up:** when a non-descript indigenous sow is mated with boars of either Hampshire or Yorkshire breed is called grading up. This would bring about an improvement in the productive traits of indigenous pigs in graded stages.

Time of Breeding:

- Period of oestrous cycle- 18-24 days
- Length of heat period- 2-3 days
- Number of services sow- 2 services at interval of 12-14 hours
- Age to breed gilts- 8 months (it is advantageous to delay the breeding of gilts until the 2nd or 3rd oestrous since this depends more on development than on age.)
- Gestation length- 114 days
- Occurrence of heat after weaning- 2-10 days.

Criteria for selection of breeding stock:

- The important characteristics which need to be considered in developing a good sow herd are: size of litters, milking ability, temperament, weight gain, feed efficiency of the progeny, longevity, fertility and freedom from any defects.
- The selection of an individual animal from a herd is more important than the selection of a particular breed.
- Certain breeds do excel in the various productive traits. No one breed is superior in all economical traits.

SELECTION OF GILTS FOR BREEDING:

- The selection of gilts for the breeding herd should be done when the animal weighs about 90 kg.
- Selected gilt should be from sows which have consistently farrowed and weaned large litters, have reached market weight in minimum time.
- Selected gilt should have good feed conversion efficiency.
- The selected gilt should possess at least 6 pairs of evenly spaced, functional teats.

SELECTION OF BOARS FOR BREEDING:

- It is desirable to select a boar weighing 90 kg in about 6-7 months.
- The boar should have sound feet and legs with good bone.
- The herd boar should be from a dam which has consistently farrowed and weaned large litters.
- The boar should have adequate length and depth of the body, thick well muscled hams and should have a prominent neck.

RECORD KEEPING

Record keeping is necessary to improve the efficiency of technical and financial management and the ease of decision making on the farm. It is an indicator of progress and records provide at glance details of herd health, vaccination Programme, breeding etc.

Registers maintained at a pig farm:

- Herd strength register
- Stock register for sow
- Stock register for boar
- Stock register for gilts
- Stock register for growers
- Breeding register
- Farrowing register
- Medicine and treatment register
- Vaccination register
- Sale register
- Feed register
- Financial register (expenditure & income)

CARE & MANAGEMENT

CARE & MANAGEMENT OF BOAR:

- The Boar should be kept in a separate pen. The pen should be clean and dry and well ventilated. Dampness should be avoided.
- They should neither be overfed nor underfed, since both will affect its breeding capacity.
- Boars should not be used for breeding earlier than 8 months of age, and not more than one service per day is allowed during breeding season.
- Trimming of boars feet periodically will prevent lameness in boars.
- Clipping of tusk should be done for older boars in order to avoid injury to sows and attendants.



CARE & MANAGEMENT OF SOW/ PREGNANT SOWS:

- The sow/ pregnant sow should be kept in a separate pen.
- The farrowing pen should be cleaned and disinfected with a solution of 2% phenyl lotion atleast a week prior to expected date of farrowing (EDF).
- The pregnant sow should be transferred to the farrowing pen atleast two weeks prior to EDF, and it should be dry, well ventilated and lighted.
- Extra feed should be given to meet the nutritional requirement of the sow as well as the growing foetus.
- Provide calcium supplement to pregnant sow's atleast 10 days prior to farrowing.
- High roughage diet should be given to sow atleast 3 days prior to EDF, and provide light bedding of chopped straw as well.
- Feed should be withdrawn just prior to furrowing.



CARE & MANAGEMENT OF NEW BORN PIGLETS:

- The piglets are removed as they are farrowed, and wipe all the mucous with a clean cloth to ensure that the breathing passage is clear.
- The newborn piglets are kept warm in creep space until farrowing is complete.
- The navel cord should be tied 2.5 cm away from the navel, remaining portion is cut off hygienically and stumps are painted with iodine.



- Clipping of needle teeth (2 pairs on each jaw) soon after birth, to prevent irritation to sow while suckling milk. Piglets should be allowed to be nursed soon after clipping of needle teeth.



- Trampling by the sow should be prevented during the first two weeks.
- Newborn piglets should be ear notched at the time of birth for numbering.



- Taking care of piglet anemia either orally (by applying saturated solution of ferrous sulfate daily for 5-6 weeks on sow's udder) or by injection of iron-dextran on 3rd and 14th day respectively.
- **Weaning of piglets:** Separation of piglets from mother is called weaning. Usually weaning is done at 7-8 weeks. The sow should be separated from the piglets for a few hours each day to prevent stress of weaning.
- The Orphan piglets are raised by the use of foster mother or by use of milk replacers.

CARE AND MANAGEMENT OF GROWERS:

- The grower piglets should be grouped according to the size.
- Optimum floor space should be provided to minimize tail biting.
- The grower piglets should be drenched with a deworming drug after two weeks of weaning in order to control internal parasite.
- The grower piglets should be shifted from protein creep ration to protein grower ration.
- The grower piglets should be vaccinated for Swine fever.



FEEDING OF PIGS

Feed plays an important role in successful pig production. The quality of the rations determines the rate of growth in young pigs, the regularity of breeding, the litter size, the amount and quality of milk, resistance to diseases and parasite, and the quality of the carcass produced for the market. The nutritional requirements of pigs vary with sex, age and physiological status of the animal.

KEY POINTS TO NOTE:

- Feeding pre-starter rations to piglet's increases growth rate of piglets and reduced mortality among them.
- The piglets should start consuming food by third week of birth as the milk production of sow declines after third week of lactation.
- The pre-starter ration should be rich in protein and vitamins and low in fibre content.
- The starter ration is fed to pigs weighing 5-15 kg.
- The starter ration is replaced by grower ration when the average weight of pig is 15 kg.
- Boars and Gilts should be fed to keep them in thrifty condition avoiding fattening.
- About 4-5 days before farrowing the sow's ration should be reduced to nearly half, and wheat bran, linseed meal etc should be included in the ration.
- Lactating sow consume 4-7 kg of feed per head per day, and requires 14-20 litres of water per head per day.

NUTRIENTS	CREEP FEED UPTO WEANING	GROWER RATION (15-40 KG)	FINISHER RATION (40-90 KG)	INGREDIENTS
Protein %	18-20	16-18	13-14	Oil cakes
	6-8	4	2	Animal protein
Grains %	60-65	50-55	40-55	Maize, Sorghum, Millet or combination of grains
Wheat Bran/ Rice Bran %	5	10	20	
Mineral mixture %	0.5	0.5	0.5	
Antibiotic supplement in (mg)	40	20	10	

Feeding rate by age and expected body weight gain:

Age in months	Body weight gain (kg)	feed in kg/ day	Feed type
2-4 weeks	2-5 kg	50-100 gram	Pre-Starter ration
1-2 months	5-15 kg	0.2-0.5 kg	Starter ration
2-3 months	15-22 kg	0.5-1 kg	Grower ration
3-4 months	22-30 kg	1-1.5 kg	Grower ration
4-5 months	30-40 kg	1.5-2 kg	Grower ration
5-6 months	40-55 kg	1.5-2.5 kg	Finisher ration
6-8 months	55-80 kg	2.5-3.5 kg	Finisher ration

VACCINATION SCHEDULES FOR PIGS

Sl NO	Name of diseases	Age at first dose	Booster dose	Subsequent dose(s)
1.	Swine fever	2 months and above		Every six months.
2.	Foot and Mouth Disease (FMD)	2 months and above	1 month after First dose	Every Six month.

IMPORTANCE OF VACCINATION:

- *CONTROL OF ZONOTIC DISEASES.*
- *CONTROL OF EMERGING AND EXOTIC DISEASES OF ANIMALS & HUMANS.*
- *SAFE AND EFFICIENT FOOD (MEAT, MILK & EGG) PRODUCTION.*
- *REDUCTION OF THE NEED FOR ANTIBIOTICS.*
- *IMPROVES FERTILITY AND REDUCES ECONOMIC LOSSES TO THE FARMERS.*



DEWORMING SCHEDULES FOR PIGS:

- FIRST DOSE AT 2 WEEKS OF AGE.
- MONTHLY INTERVAL UPTO 6 MONTHS. THEREAFTER ONCE IN A 3 MONTHS THROUGHOUT THE LIFE.
- PREGNANT ANIMALS SHOULD BE DEWORMED A MONTH PRIOR TO PARTURITION.

IMPORTANCE OF DEWORMING:

- *TO CONTROL PARASITES.*
- *MAKES THE ANIMAL MORE RESISTANT TO DISEASES.*
- *HELPS THE ANIMAL GROW FASTER/PERFORM BETTER/PRODUCE BETTER QUALITY MILK& MEAT.*
- *ENHANCES VACCINATION.*

COMMON DISEASES THEIR CONTROL AND PREVENTIONS

A) PARASITIC INFECTIONS:

- **Roundworm:** They live in the gut and survive on intestinal contents of the pig, pig may therefore appear thin. Roundworm infection occurs by ingestion of eggs present in contaminated feed, soil and vegetables grown in infected soil.

Symptoms- Anorexia (loss of complete appetite), anemia and weight loss.

Prevention- Periodic deworming (Albendazole & Fenbendazole drugs). Provide clean and dry pens.

- **Tapeworm:** They are flat & long ribbon like organisms, they live in the gut and survive on intestinal contents of the pig.

Symptoms- Poor growth, rough hair coat, anemia and appears thin.

Prevention- Periodic deworming (Albendazole & Fenbendazole drugs) .

Note: Tapeworm causes Pork Measles in humans when humans consume undercooked pork.

- **Mange:** It is caused by small parasites called mites that live on the skin of pigs. They cause severe irritation & itching.

Symptoms- Scabs formation, itchy, thick skin and rough hair coat.

Prevention- Cleanliness of the sty and the animal. Recommended treatment with 1% Ivermectin injection S/C, once a week for 4 weeks, along with some multivitamins containing omega fatty acids.



- **Myiasis/ Maggots:** Flies lay eggs on the wounds, eggs hatch into larvae which live & feed on the flesh and develop into pupae, and finally matures and makes the wound more severe.

Symptoms- Irritation to the pig, making the wound more severe.

Prevention- Clean the wound daily with disinfectant (Tincture iodine) and apply fly repellent ointment (Himax). Maggots can be managed by using Turpentine oil, Butox, Neosporin powder, Ivermectin injection etc.



B) BACTERIAL INFECTIONS:

- **Leptospirosis-** It is an acute or chronic inapparent contagious disease of pigs, characterized by fever, anaemia, jaundice and abortion.

Symptoms- Abortion in last trimester, death of new born piglets, epileptic form of convulsion, paralysis, mummified and macerated foetuses.

Prevention/ Treatment- Strict sanitary measures should be adopted at farm.

Treat with penicillin or ampicillin injections for 5-7 days. Supportive treatment.

- **Mastitis-** It is a condition where the udder/teats are inflamed and hardened, characterized by changes in the milk such as change of colour, change of consistency (clot).

Symptoms- High temperature, off fed, respiratory distress, reduced milk secretion, udder/ teat is swollen and extremely painful.

Prevention/ Treatment- Antibiotic therapy (Ceftizoxime injection single dose), wisprec ointment, relaxant spray and MnM powder.



- **Swine erysipelas-** It is an infectious disease of pigs characterized by the appearance of diamond shaped skin (red skin).
Symptoms-Sudden death, anorexia, dark purplish discoloration occurs on the belly, ears, tail and neck. Cutaneous lesions (diamond shaped skin lesions). Arthritis.
Prevention- Penicillin is the drug of choice. Anti-inflammatory injections (inj melonex/ inj prednisolone).



- **Piglet Diarrhoea**- It occurs both at neonatal and post weaning stages. It is closely associated with poor hygiene, stressful environment and inappropriate husbandry.

Symptoms- Watery diarrhoea, partial loss of appetite.

Prevention- Anti- diarrhoeal drugs (Neblon, Diaroak, C-floxtz tablet, Oflokind-oz tablet). Provide stress free environment, maintain good hygiene.

C) VIRAL INFECTIONS:

- **Classical swine fever**- It is an acute highly contagious viral disease affecting pigs of all ages, characterized by rapid and sudden onset, high mortality with generalized haemorrhages.

Symptoms- High temperature, depression, vomiting, dehydration, severe diarrhoea, purplish discoloration of snouts, ears and inner side of the legs.

Convulsion and paralysis. Postmortem lesions are pin point haemorrhage in kidney (turkey egg appearance), button ulcer appearance in large intestine.

Prevention-There is no specific treatment. Only proper vaccination can prevent from this infection.

- **African swine fever**- It is a highly contagious fatal disease of pigs. The disease is transmitted through contact with wild pigs which remain as reservoir of infection.

Symptoms-High temperature, listlessness, incoordination of gait, purplish discoloration of the skin. Pericarditis, intestinal haemorrhages.

Prevention- There is no specific treatment or vaccination available at present. Strict bio-security measures should be taken. Dead animals should be buried or burnt. Proper disinfection of the premises using either bleaching powder or sodium hypochlorite 2%.

- **Japanese encephalitis**- It is a mosquito- borne viral disease that affects both pigs and man. It is a zoonotic disease (Animals to human).

Symptoms- Photophobia (sensitive to light), tremor, hyperaesthesia (sensitive to stimulation), animal is unable to stand, respiration is laboured.

Prevention- There is no specific treatment. Supportive treatment like antipyretics (injection melonex plus), anticonvulsants (tablet gardenal), antibiotics (injection xonecef) for prevention of secondary bacterial infection. Use of mosquito repellent (malathion).

- **Porcine respiratory and reproductive syndrome**- It is characterized by reproductive failure in sows and pneumonia in young pigs.

Symptoms- Abortion, mummified foetuses, early farrowing and delayed return to service in affected sows. Respiratory distress and increased preweaning mortality.

Prevention- There is no specific treatment. Supportive treatment like antibiotics (to suppress secondary infections), antihistamine (injection Avilin). Strict bio-security measures to be taken. . Proper disinfection of the premises using either bleaching powder, phenyl or sodium hypochlorite 2%.