

RECOMMENDED PRACTICE

PIG FARMING



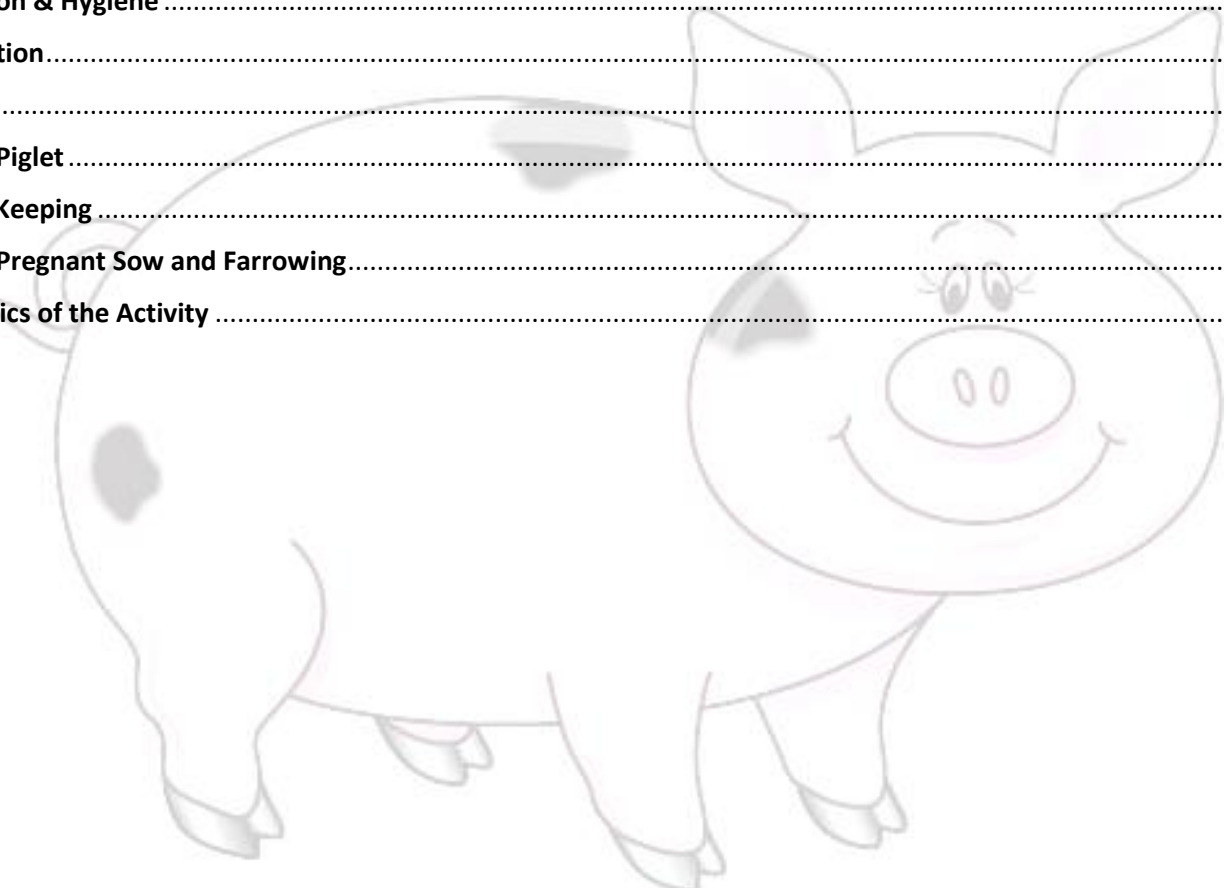
Sesta Development Services (SDS)
Guwahati, India



Mizoram State Rural Livelihoods Mission
Rural Development Department
Government of Mizoram

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Introduction

Pig is most popularly reared by the people of North Eastern Region, particularly by the tribal people of plains as well as of hills. Pig production is deeply embedded in the customs and culture of the people of Mizoram. The production system prevails in the region is the age-old system which is passed from one generation to the next. Population growth accompanied by the increase in purchasing power, the demand of animal products including pork is increasing at rapid rate in the last two decades in the region. The pig production is not sufficient to meet the demand of the region relying heavily on supply of pigs from different parts of the country.



Livestock plays an important role in the economy of Mizoram as crop production is still traditional. Pig occupies a unique place, as pig rearing is considered to be the most encouraging and appropriate livestock enterprise. The farmers mostly preferred cross-bred animals to rear. The overall adoption level of the farmers on scientific pig rearing was partial. The adoptions of recommended technologies were associated with age, education,

operational land holding, farm size, income from piggery, social participation. The high market price of piglets and feeds, lack of training on pig rearing, lack of awareness amongst farmers, etc are major constraints in pig rearing. (LAP 2014-01 - 12)

A study conducted in Aizawl District of Mizoram by S. Rahman *et. al.* (Livestock Research for Rural Development 20 (9) 2008) revealed that the farmers reared the pigs in confinement in raised platform constructed with woods and bamboos and in most of the farms (97%) the floor space was inadequate against per adult animal. Majority (92%) of the farmers' rear cross-bred pigs and (75%) follow artificial insemination (AI) practices. The average litter size at birth was 7 while that for weaning was 6. All the farmers followed stall feeding and supplied kitchen waste with certain weeds, after boiling, to their pigs while only half (50%) of them offered concentrate feeds (maximum 1kg per pig). Further, majority (61%) of farmers never used any feed supplement like mineral mixture, vitamins etc. They provided feeds twice daily, morning and evening. With regard to health care, the study revealed that majority (72 %) of the farmers used antibiotic in treating the diseased pigs whereas 64 per cent of the farmers followed deworming using either traditional or allopathic medicine. However, 82 per cent of the farmers vaccinated the pigs against swine fever. Similarly, only 12 per cent of the farmers treated their piglets against piglet anemia with iron injection and 39 per cent of them used ectoparasiticide drugs in their farms. Only 36 per cent of the farmers paid special attention to the pregnant sows but 80 per cent of them took special care of sows after farrowing. Cleaning of pigsty was done once in a week by 65 percent of the farmers.

Advantages of Pig Farming

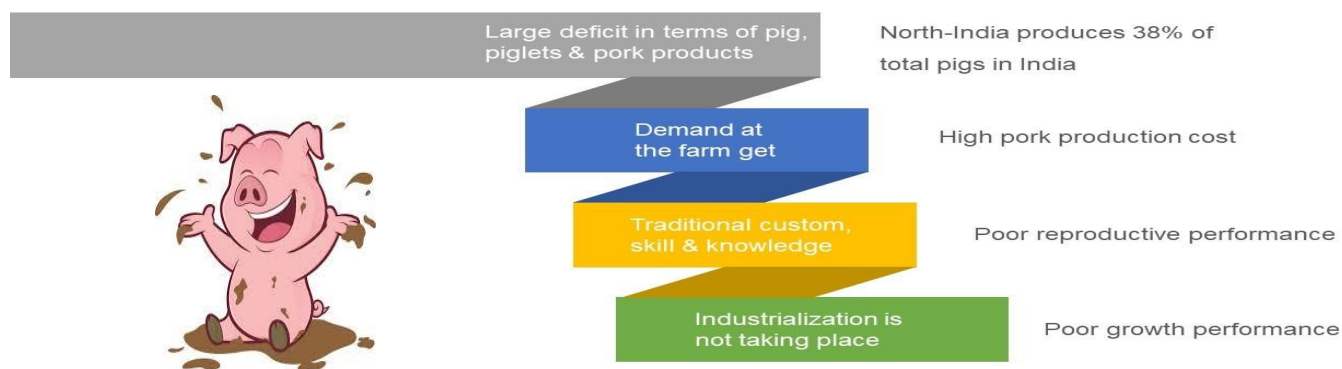
- ✚ Pigs grow faster than most domesticated animals. They have higher feed conversion efficiency. That means, they have a great feed to meat converting ratio. They can convert all types of inedible feeds, forages, certain grains byproduct obtained from mills, damaged feed, meat byproducts, garbage etc. into valuable, nutritious and delicious meat.
- ✚ Pigs can eat and consume almost all types of feed including grains, damaged food, forage, fruits, vegetables, garbage, sugarcane etc. Sometimes they even eat grasses and other green plants or roots.
- ✚ Pig is highly prolific breeder - Many offspring is possible to produce in a year per sow. A sow can be bred for first time at their age of 8-9 months. They can farrow twice a year. And in each farrowing, they give birth to 8-12 piglets.
- ✚ Pork is energy dense due to high fat percentage.
- ✚ Initial investment is very low in setting up piggery unit.
- ✚ High dressing percentage i.e. Meat to offal ratio

Market Outlook

Pigs are one of the oldest forms of livestock, having been domesticated as early as 7000 BC. Pig farming is very important component in North East India. Out of total pig population in India, 28% are grown in this region. India's imports of pig meat increased at an average annual rate of 11 percent. In 2015, the volume jumped 28 percent from the previous year. India imports about 527 tons a year which is mainly destined for hotels, restaurants and supermarkets. The major exporters to the Indian market are Belgium, Sri Lanka and Spain. The most frequently imported products are pork belly, chops, loin, tenderloin, neck, shoulder, spare ribs, bacon, ham, salami and sausages.

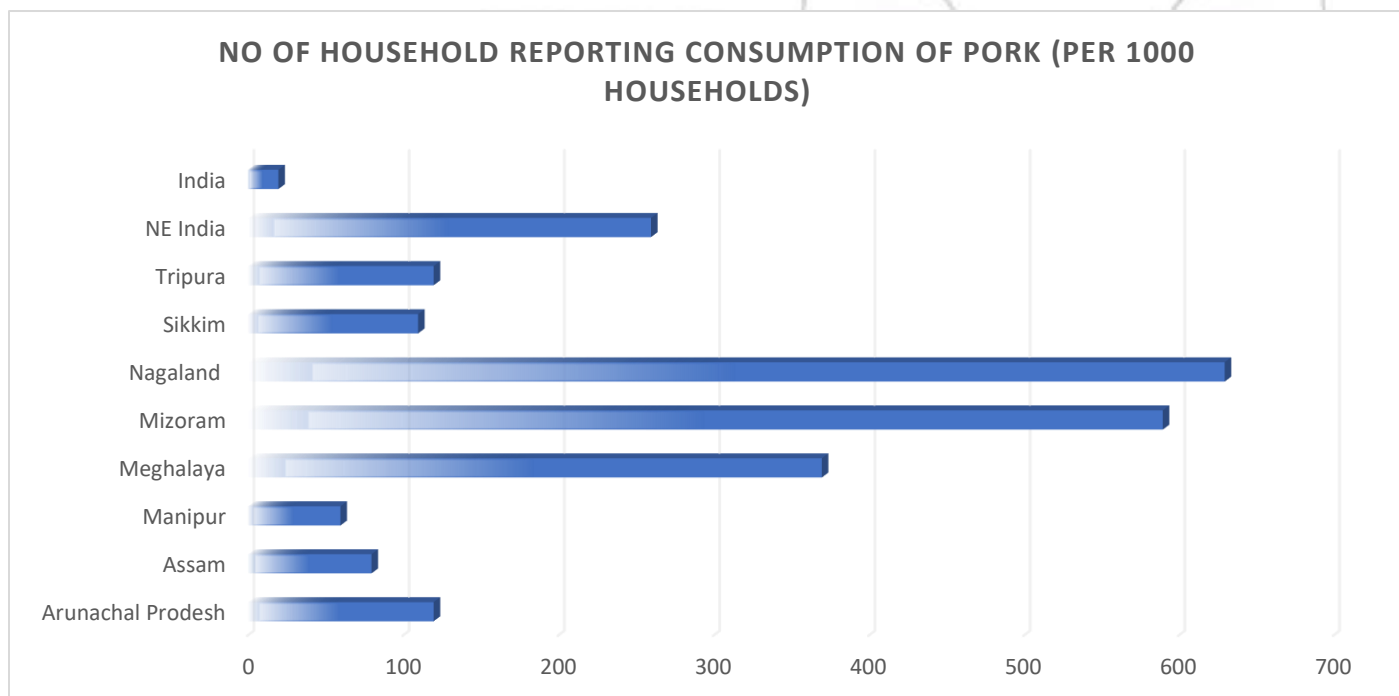
Scope for pig farming

Livestock plays an important role in Indian economy. About 20.5 million people depend upon livestock for their livelihood. Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households. Livestock provides livelihood to two-third of rural community. It also provides employment to about 8.8 % of the population in India. India has vast livestock resources. Livestock sector contributes 4.11% GDP and 25.6% of total Agriculture GDP. The total meat production in India is about 60 per cent as against small ruminants (15 per cent), pigs (10 per cent) and poultry (12 per cent).



The pig population of the country is 11.1 million as per the 2012-13 annual report of Animal Husbandry. Pork production in India is limited, representing only 7% of the country's animal protein sources. Production is concentrated mainly in the northeastern corner of the country and consists primarily of backyard and informal sector producers. According to 18th Livestock Census of India (2007), there was a marginal decline in total swine population. The Indian market for processed pork products is small, and the majority of this market is supplied through imports. Although there are some local companies which manufacture processed products such as sausages and bacon, quantities are limited and the industry is small. According to MoFPI, there are 3600 slaughter houses in India, although the majority of these facilities do not export. There are a small number of abattoirs in India which meet international standards. However, these facilities do not process pork.

According to the "household consumption of goods and services" in India, 2011-2012, NSS, India that consumption of pork (pig products) is higher than in Nagaland and Mizoram.



The table shows that the monthly consumption pattern in Mizoram and Nagaland is also very high in comparison to other north-east states. The pig farming constitutes the livelihood of rural poor belonging to the lowest socio-economic strata and they have no means to undertake scientific pig farming with improved foundation stock, proper housing, feeding and management. Therefore, suitable schemes to popularize the scientific pig breeding cum rearing of meat producing animals with adequate financial provisions are necessary to modernize the Indian pig industry and to improve the productivity of small sized rural pig farms. In view of the importance of pig farming in terms of its contribution to rural poor and possible potentials for pig rearing in our country, Government of India has initiated measures to promote the pig farming on scientific lines under its five-year plans. In order to make available good foundation stock 115 pig breeding farms were established throughout the country.



SWOT Analysis of piggery sector

<p style="text-align: center;">Strength</p> <ul style="list-style-type: none">• Traditional practices thus a large base of Growers• Extensive availability of natural resources for cheap feed• Traditional Knowledge Base• High profitability• Very Low Capital Investment• Very low rearing cost• Feed cost is lower owing to usage of locally available ingredients• Small cycle time (8-9 months from Birth of piglet to market weight & Breeding)• Large litter with every breeding (8-9 piglets in each farrowing)• Very small space requirement• Lower FCR & high meat to bone ration leading to very high meat availability per kg live wt.	<p style="text-align: center;">Weakness</p> <ul style="list-style-type: none">• Low level of breed up-gradation• Slow Growth Rate• Lack of awareness on economic potential of the activity• Lack of Extension activity• Poor growth potential of the local breed• Non-availability of Vaccines & other critical inputs• Weak supply chain and market linkage leading to poor output prices• Lack of awareness of the efficient husbandry practices• Taboo - Many societies consider breeding, pig a taboo
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none">• Deficit Market• Growing demand due to widespread consumption• High Margin• Apt for small scale & backyard• Self-employment• Industry with tremendous growth potential• Untapped local and distant markets• Lack of presence of any large enterprise thus giving space for smallholders to flourish• Inelasticity of price due to huge demand-supply gap presents a wonderful opportunity to add volume without any additional price drop• Willingness at both trader at farmer site to streamline the system• Trickle effect of women empowerment through the activity	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none">• Diseases• Unregulated Cross Border movement of animals leading to new diseases & price drop• Taboo: Pork consumption is considered taboo in many societies• Depleting forest resource• In-breeding and progressive deterioration of the breed (in terms of size, growth and genetic potential)• Prevailing high prices of Pork might prevent the demand spurt we are currently experiencing in other animal enterprises (particularly in poultry)• Increased regulation of govt. on usage of forest land• Lack of perspective in farmer's regarding the economic potential of the activity

Technical Protocol

Breed

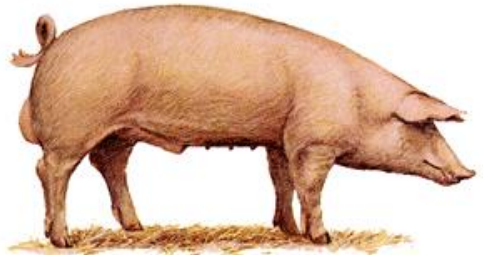
Breeds of Pigs: A breed is a group of animals that has specific traits or characteristics in common and can differentiate from one breed to another by following characteristics:

- Color: Black, white, brown, etc.
- Color combinations: Spotted, belted, etc.
- Size and position of ears: Erect, hanging, 1/4 hanging, etc.
- Length and shape of the snout
- Body length
- Weight at maturity
- Backline: Straight, swaying, curved, etc.

Pigs available in our country are of smaller size and slow in growth rate. Reproductive efficiencies are also lower in these pigs. For improvement of our pigs, different improved breeds were introduced to India from Europe, USA and Australia. Description of some of the widely used exotic breeds is given below.

Landrace

The landrace is a white-meat type of pig (freckles may appear) having large hanging ears and a small head. The neck and body are long and narrow in the withers to the brisket. It has a long deep side but is low in the back. The ham of the Landrace is square-shaped. The Landrace is highly prolific, superior in feed efficiency and daily gain. However, it lacks hardiness and has weak feet, pastern and legs.



Large White



The Large white is a white-meat type pig with medium, erect ears, curved back and body inclining forward. The face is slightly dished. It is fast growing, good feed converter, highly prolific, and excellent milkers with superior mothering ability. Its carcass is also suited for bacon production. It can adapt well in confinement but not in backyard conditions.

Hampshire

The Hampshire is a black-meat type pig with white belted body from the shoulder to the front legs.

It is smaller in size with strong, short legs and erect ears. The Hampshire is prolific shows good mothering ability, average daily gain is acceptable and it has a high lean meat percentage but lacks body thickness. They are adapted to rugged conditions.



Duroc

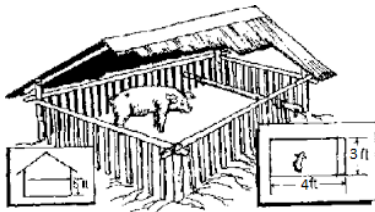


The Duroc is a meat type, red pig (gold to yellow) with a set of small, forward ears, 2/3 erect and 1/3 hanging. Black flecks may appear on the body. It has a good body constitution, strong legs, good mothering ability, a fast grower, good milker and is prolific. This-breed adapts well to rugged conditions.

Table 2. Characteristics of the Different Breeds of Pigs

Breed	Color	Ears	Type	Country of Origin	Observations
Landrace	White	Hanging	Meat	Denmark	Long face, good mothers, weak legs, prolific
Large white	White	Standing	Meat	England	Fertile, high quality meat, fast grower
Hampshire	Black with white band	Standing	Meat	USA	Short, good quality white band meat, strong legs
Duroc	Red(golden)	2/3 erect 1/3 hanging	Meat	USA	Good constitution, strong legs, fast grower. resistant to stress

The important management practices are as follows



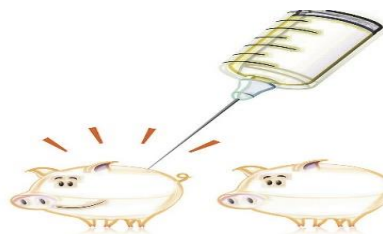
Housing



Care of piglets



Sanitation & Hygiene



Vaccination



Feeding



Record keeping

Housing

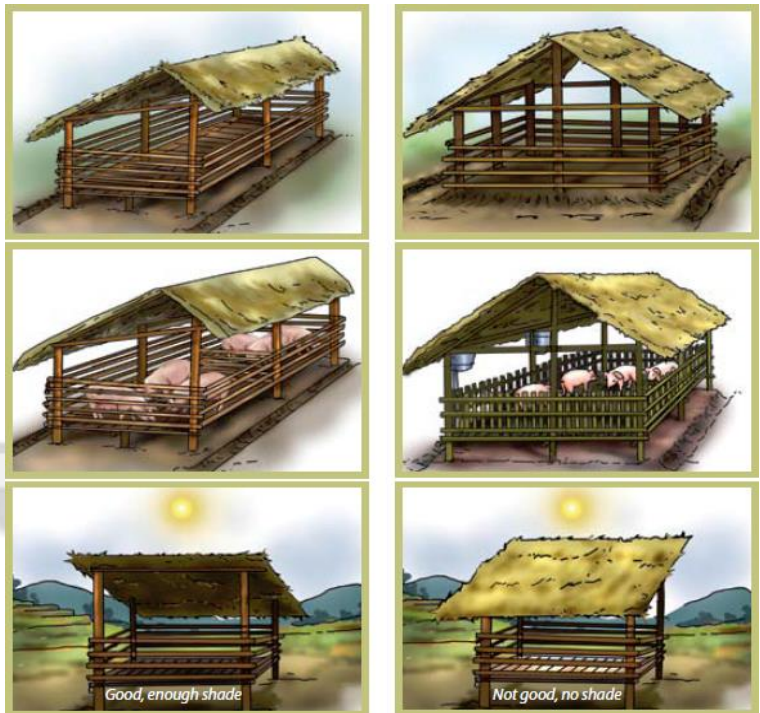
Adequate housing and equipment is very important for successful pig farming. Housing not only provide shelter but also keep them safe from inclement weather, parasites and various types of pig diseases. While building house for the pigs consider availability of all types of necessary facilities for them. Make proper ventilation system. Make proper facility for keeping the boar, farrowing, weaner and dry sow separated from each other.



- ✚ Pig shed is called Pig Sty
- ✚ 10-12 sq. ft. area per animal should be allotted
- ✚ Pig sty could be made up of bamboo, wood, concrete walls etc.
- ✚ The floor should be easily cleanable
- ✚ The floor should be sloped (5 degree would do) backward for easy removal of excreta
- ✚ Sty must be cross-ventilated
- ✚ Feeding pan must be more than 2 feet wide & 1-2 feet in length
- ✚ Adequate lighting arrangements should be there in sty
- ✚ Sty height must be at least 3 feet

Sanitation & Hygiene

- ✚ The floor should be maintained dry
- ✚ The feeder should be cleaned daily with clean water
- ✚ The feeder could be sanitized using 5% KMnO₄ (Potassium Permanganate)
- ✚ The floor & walls shall be cleaned daily with KMnO₄ (Potassium Permanganate) (2.5 gm per litre of water)
- ✚ Visit of outside persons shall be strictly prohibited near the pig sty
- ✚ The area around the pig sty (i.e. road/path) must also be sanitized regularly with KMnO₄ solution
- ✚ Keep the clothes separate while working with the animals & don't mix them with other ones



Vaccination

Vaccination is the inoculation of specific biological substance antigen to stimulate resistance or immunity to pig against diseases. Blow listed the name of the vaccination and the age for vaccination;

Sl. No.	Age	Vaccine	Route	Dose
1	30 day	Swine Fever	I/M or S/C	1 ml
2	45 day	FMD	I/M or S/C	1 ml
3	60 day	Swine Fever	I/M or S/C	1 ml
4	75 days	FMD	I/M or S/C	1 ml

Deworming

Sl. No.	Age	Dewormer Medicine	Route	Dose
1	42 days	Fenbendazole	Oral	1 Tab (150 mg)
2	63 days	Fenbendazole	Oral	1 Tab (150 mg)
3	5 Month	Fenbendazole	Oral	2 Tab (150 mg)
4	8 Month	Fenbendazole	Oral	3 Tab (150 mg)
5	11 Month	Fenbendazole	Oral	4 Tab (150 mg)

Feeding

- Feed must be nutritionally balanced containing a healthy mixture of Carbohydrates, Fat, Protein, Scavenging should be allowed
- Packed could also be provided which is nutritionally balanced but costly
- A balanced feed could be prepared at home using locally available resources
- Always add some salt (0.5=1%) & mineral mixture (1-2.5%) to the feed
- The feed must be cooked/ Steamed to allow better digestion
- Sanitized & clean potable water must be made available 24*7 in the feeding trough

Ingredients	%	Nutrients
Kitchen/ Vegetable Waste	50	Protein, Carbohydrate, Fat
Boiled Local Vegetable (like: Tapioca/Sweet Potato/ Colocasia)	30	Roughage, Protein, Carbohydrate
Cabbage	10	Roughage, Protein, Carbohydrate
Oil Seed Cake	4	Fats & Vitamins
Fish Meal	4	Protein, Vitamins
Common Salt	0.5	Sodium
Mineral Mixture	1.5	Minerals

A generic Feed Formulation

Ingredients	Unit	Price (Rs/Kg)	Current Practices		Recommended Practices	
			Quantity Per Day	Expenses Per Day	Quantity Per Day	Expenses Per Day
Kitchen Waste	Kg	0	1	0	1	0
Gren Leafy Material	Kg	0	1.5	0	1.5	0
Grain (e.g. Rice)	gm	20	250	5	500	10
Oilseed Cake	gm	40	0	0	50	2
Mineral Mixture	gm	250	0	0	20	5
Salt	gm	10	0	0	15	0.15
Formula Feed (Packed Feed)	gm	30	0	0	0	0
Total Feed Consumed	Kg/Day		2.75 Kg	5 Rs.	3.085 Kg.	17.15 Rs.

Daily Feed Requirement (Packed/Formula Feed)

Age (in Months)	Feed Consumed Per Day (Kg)
1-2	0.5
2-3	1
3-4	1.25
4-5	1.5
5-6	2
6-8	2.5
8-12	3



Care of Piglet

- The piglets should be fed on colostrum at the earliest
- Healthy piglet should weigh between 800-1200 gms at the time of birth
- The naval cord must be dipped in some antiseptic solution
- Piglets should be fed on sow milk at least 4 times a day till one-week age
- After one-week age, piglets should be kept on high protein, cooked diet
- The piglets should be weaned at 21- 35 days
- The piglets should be administered 2 Iron injections at day 4 & 14 of their life (1 ml I/M)

Growth Chart	
Age	Weight
2 Months	20-25 Kg
4 Months	35-45 Kg
6 Months	55- 65 Kg
8 Months	75-100 Kg
10 Months	100-120 Kg
12 Months	120-150 Kg

Record Keeping

- Proper record maintenance is most important to compute the economics of the enterprise
- In case of any disease outbreak/ loss, the records help to pin point the cause & rectify the same
- 2 types of records are maintained:
 - Production Records: Dealing with the production side i.e. Wt. of the piglet, Growth monitoring, Mortality, Disease profile, Vaccination record
 - Financial Records: Deals with the money matters like: Price of Piglet, Supplier of Piglet, Date of Sale, Price, wt. at sale, price of feed stuff, expenses on feed, piglet & other inputs

It is highly recommended that the records should be maintained in the Farmer's card provided by MzSRLM

Care of Pregnant Sow and Farrowing

The pregnant sow shall be accorded the best care. Main points to be kept in mind while taking care of a pregnant sow:

1. Detection of Pregnancy
2. Feeding during pregnancy
3. Care during pregnancy
4. Housing During pregnancy & farrowing
5. Signs of Farrowing
6. Post Farrowing Care

Detection of Pregnancy

- Pregnancy detection is not possible before the next heat post Mating (20-22 days)
- Check the Sow regularly after mating & if the heat is missing, there are chances that the sow is pregnant
- Hood pointing upwards (in sow, who has farrowed more than 5 times, this diagnosis may not apply)

Feeding During Pregnancy

- High Protein diet should be given during the pregnancy
- Dense energy diet leads to deposition of excess fat in the hind quarters resulting in painful farrowing & may lead to death of Piglets during Farrowing
- The diet must be adequately fortified with Mineral Mixture, Salts & Vitamins
- The rearers may go for increase Oil Seed Cake content & mixing more than one kind of grains & oil seed cakes
- A pregnant sow requires 8-12 ltrs. of water daily, clean potable water should be made available round the clock to the pregnant sow
- Thumb rule for water requirement is: 3.5-4 times the weight of feed consumed
- Most vitamins and minerals if markedly deficient in their diet will cause problems which can be severe as termination of pregnancy.
- Vitamin A alone has a permanent effect on the function of the uterus. Due to deficiency of it, embryos may die before implantation because the uterine glands do not produce sufficient fluid nutrient or the so-called "uterine milk"
- High levels of feed intake during the first 3 weeks of gestation may have a negative impact on embryo survival, particularly in gilts. Therefore, feeding must be restricted especially if a high-energy ration is used. Limiting feed intake to 4 to 4.5 lbs. per day during the first 21 days post-breeding may be a safe practice.
- The development of the mammary gland reaches the critical stage between 75 to 90 days of gestation period. During this period, the proliferation of secretory cell occurs which will



determine cell number and ultimately milk synthesis capacity in the subsequent lactation. As excess energy intakes reduce cell numbers, high level of feeding should be avoided.

- Foetal weight gain will increase substantially during 90 to 115 days of gestation period and consequently nutrient requirements of the sows also increases
- Threats of High Weight/ Very high level of feeding: Excessively fatty sows are prone to suffer from farrowing complications such as weak uterine contractions of narrow inelastic vagina; hence stillborn or weak pigs appear more frequently during farrowing. Generally, they also have poor mothering ability because they are clumsy and tend to crush their piglets. All these and other factors are suggestive of the importance of proper feeding of pregnant sows for the production of large litter. The detrimental influence observed on full-feeding pregnant gilts or sows on embryo survival is due to high energy feeding during the first three or four weeks of gestation when most of the embryo losses usually occur.

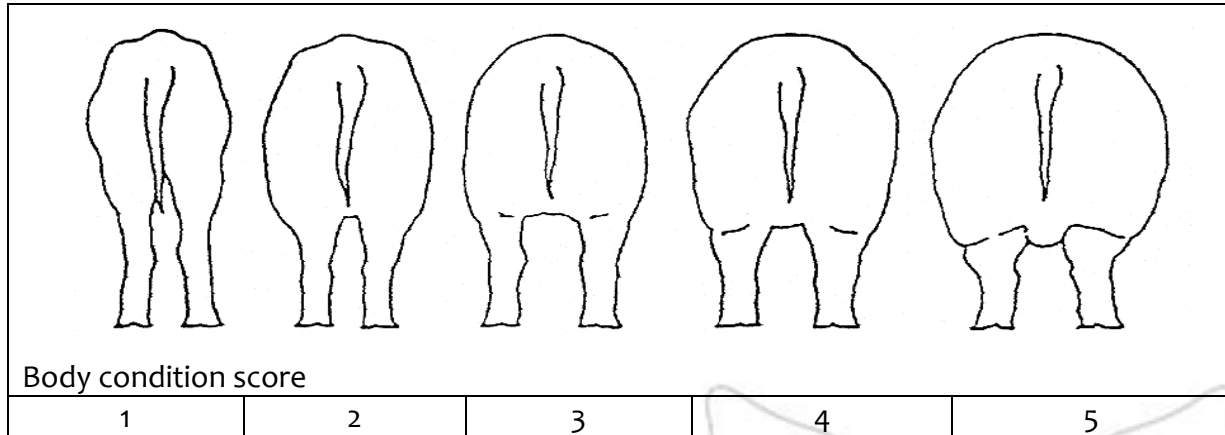
Gestation phase	Feeding level
Wean to breed	<i>Ad libitum (As much as the animal could eat)</i>
Breed to 21 days	2-2.25 kg
21 days to 75 days	2-4 Kg
75 days to 90 days	2-2.5 kg
90 days to 115 days	2.25-3kg

During pregnancy, feeding must be aimed at bringing the sow to right body condition (ideal is 3), neither thin nor too fatty, enabling her to be able to start a very demanding lactation period after the pregnancy. Feeding should also aim at proper growth of the fetuses as high birth weight is important for survival being the light-weight piglets having poor viability.

Body condition score	Condition	Body shape
1	Emaciated	Hips, backbone prominent to eyes
2	Thin	Hips, backbone easily felt without applying palm pressure
3	Ideal	Hips, backbone felt only with firm palm pressure
4	Fat	Hips, backbone cannot be felt
5	Overfat	Hips, backbone heavily covered

Source: Patience and Thacker, 1989

Body Condition Score



Care during pregnancy

- Every day at least two times, especially during feeding time (morning and evening), health of the animal should be monitored carefully. Behaviour, feed intake, hair coat, activity, color, skin, faeces, urine, eyes etc of the animal should be observed carefully to spot out any diseased animal. Suspected animals should be checked for the temperature, respiration, heartbeat, and should be observed thoroughly. Diseased animals should be shifted to isolation pen
- Always avoid stress, rough handling, fighting and other disturbances, especially in the first 3-4 weeks of pregnancy. In this period, conception and early development of the embryos take place. Stress could cause death of embryos, resulting in a small litter size.
- High temperature is a stressor that cannot easily be avoided. Bathing of the sow on hot days is advantageous.
- Sows should be thoroughly cleaned and washed before transfer on a previously cleaned farrowing pen. After washing the sow, spray her with a mild solution of an antiseptic or disinfectant. The sow should be dewormed before transferring to the farrowing pen.
- To curb the stress of farrowing, an antibiotic supplement may be given with the drinking water or with feed 3-10 days before the expected date of farrowing and 5-10 days thereafter.

List of Activities to be done during Pregnancy

Day	Activities
0	Service (normal feeding of sow: 2.5-3.0 Kg)
21 st	3 weeks(21 st day) heat control
28 th	Pregnancy testing with ultra-sonic tester (if available) at 28-35 days
28 th	Increase of feed allowance according to feeding schedule during pregnancy
42 nd	6 weeks heat control
85 th	Increase of feed allowance according to feeding schedule during pregnancy
102 nd	First mange treatment
105 th	Deworming
108 th	Second mange treatment, washing sow, transfer to farrowing pen

Attention: Constipation of the sow at farrowing is another condition which needs to be kept under control. Usually the reduction in activity of the sow when placed in a farrowing stall tends to make her constipated. If the rectum of the sow is full of hard feces, the size of the passage through which piglets are to be expelled is reduced resulting to prolonged parturition. To avoid constipation and other related complications at farrowing, provide pregnant sow with a bulky but laxative ration 3-7 days before she is due to farrow. This can be done by providing the sow with plenty of water and roughages (green feeds) such as sweet potato vine, cabbage, grasses etc.

Housing During pregnancy & farrowing

- Transfer the sow a week before end term of gestation to Farrowing pan. The one week time gives her the time to adjust to the new surrounding of the farrowing pan
- Washing the Sow: Pregnant sow should be thoroughly scrubbed with soap and water, especially in the region of the sides, udder and undersurface of the body. This removes adhering parasite eggs and bacteria that are potential diarrhea-causing agents for the piglets
- Clean & Disinfect the farrowing pan thoroughly
- If animals is farrowing in an open pen, it is advisable that guard rails be provided to prevent sows from crushing their piglets

Signs of Farrowing

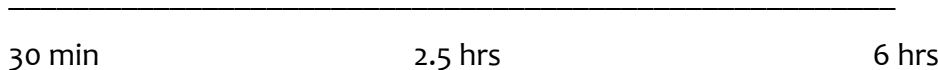
- a. Nest making, nudging of hurdles, walls and flooring, biting of hurdles and guard rails
- b. Sow always in a "sitting dog" position
- c. Distention and enlargement of the udder of the sow
- d. Enlargement and swelling of the vulva
- e. Small round size of sow's manure and frequent urination
- f. Milk letdown
- g. Mucous discharge with meconium
- h. Signs of labour
- i. If milk is present in the teats, the sow is expected to farrow within 24 hours, however, occasionally, milk is present 1 to 2 weeks before the sow actually farrows.

Assistance during farrowing

Management is most critical and time demanding at farrowing time. Anytime of the day, a caretaker has to watch the pregnant sow closely for impending delivery and be ready to assist her when necessary.

Farrowing may take as little as an hour, but may also last for several hours. Interval between piglets should not be longer than 15 minutes.

Range of Farrowing time



At farrowing time, special attention should be given to the sow, while allowing it to farrow by itself if the condition permits.

Sows seldom require assistance while farrowing, unless one observes the following: restlessness, excessive straining and the time between piglet interval is more than 45 minutes. These actions indicate that farrowing is not proceeding normally. If this is the case, one must consider manual assistance to the sow. Signs of difficult farrowing and procedures for intervention should as much as possible be discussed with a veterinarian. Older, overweight or nervous sows may have more farrowing problems.

Procedure for Assistance

- Wash the sow's vulva and the area surrounding the vulva to remove organic matter and dirt.
- Wash your hands and lubricate.
- Insert your clean hand slowly, using firm pressure, into the vagina and move slowly to the cervix. The uterus will be either straight ahead or down over the brim of pelvis.
- Once your hand is in the uterus, you can often palpate a piglet's head or hind legs. If this is the case, grasp the piglet's hind legs or head depending on the orientation and slowly pull the piglet out. If two piglets are stuck at the junction, push one back.
- If in case you cannot palpate any piglet, you may have to give oxytocin.

One must be very gentle and careful as you palpate the sow and pull piglets. If you are not careful, you may tear the vagina, cervix or uterus and you will have problems later with metritis (inflammation of the lining of the uterus).

Post Farrowing Care

- Normal body temperature of young and pigs are 103 F and 101 F respectively
- Sows with piglets may be called "lactating sows". Suckling period could be from 28 days to 56 days, depending on the weaning practice
- A short lactating period for the sows would be advantageous in terms of sow production efficiency. On the other hand, this practice requires more care and attention and special feeding for the weaned piglets.
- In the first few days after farrowing, the sow and its litter should be observed carefully for any disease condition and inadequate milk production. Often, corrective measures should be instituted.
- Special accommodation for the sow with piglets is essential to avoid high mortality among the piglets. Separate areas for both sow and piglets are necessary. Special arrangements are also needed to avoid crushing of the piglets. Using guard rails and hurdles and providing a creep area where the piglets have a warm nest away from the sow, can reduce mortality. On the other hand, it is also important to have good access to the pen to be able to feed and handle the animals.



Important considerations

- Nest temperature in the first week must be 32°C
- Creep area must have an area of at least 1 m²
- Lying space behind the trough must be at least 2 m long for the sow with 1.5 meter dunging area
- The lowest bar of the rails must have a height of 20-23 cm above the floor
- The box width must be 65 cm (Approx. 2 ft)
- The floor where the sow stays needs to be cool

Piglet Care and Management

Pigs are normally born either head first or rear feet first. Sometimes a piglet will be covered by placental membrane upon expulsion. On such cases, this should be removed to prevent suffocation, otherwise leave the piglets by itself.

Navel cord cutting. Do not clip the umbilical cord of a new born piglet or immediately after expulsion. Such a procedure may create an avenue for disease organism to enter the piglet's body. When it is dried up it should be cut about one inch away and should be cauterized with tincture iodine. If a piglet is bleeding from the naval, stop the bleeding by tying clean string around the cord approximately 1 inch from the body. It is extremely important to disinfect the naval cord.

Teeth clipping. These two procedures, as much as possible, should be done immediately after birth. The needle teeth are often clipped to prevent damage to the udder of the sow and also to avoid fighting among piglets. This can be done by cutting the sharp points of the teeth (8 teeth, 4 in the upper mouth and 4 in the lower mouth) using a tooth clipper or an electric teeth grinder. Do not clip the teeth too close from the base to avoid hitting the gums as this may cause bleeding with subsequent infection.

Brooding of Piglets. Piglets are more comfortable at a higher environmental temperature compared to sows. The ideal brooder temperature for piglets is from 30°C to 32°C. A two 75-watt or a three 50-watt electric bulb could be used as heaters, especially during early morning (1:00-4:00 AM). Other types of heaters available in the market can be used.

The right temperature for piglets is shown by their behavior. If piglets stay close to the sow or to the heat source or huddle together, then temperature is too low. If piglets stay close to the sow but stay away from the heat source and still huddle together, then the heat source might be too high. If piglets are evenly distributed in the pen and in the brooder, then the temperature is just right. Rough hair coat may indicate sickness or cold temperature. Avoid drafty condition since this has a cooling effect on piglets. Always keep the brooder or creep area warm, dry and clean.

Feeding of colostrum: All of the newborn piglet's immunity comes from the sow after birth. This is also called "passive immunity". Colostrum, provides this passive immunity to the piglets. As the absorption of immunity factors is lost after 36hours of birth, it is extremely recommended that piglets should suckle colostrum immediately after birth.

Iron Supplementation: Iron (Fe) is an important mineral necessary for the formation of hemoglobin in the red blood cells. Iron also plays a role in preventing nutritional anaemia. At birth, the piglets have about 50 milligrams (mg.) of iron reserves in the body. This amount of iron is not adequate to allow the piglet to grow at its maximum potential for about 2 weeks after birth. The piglet requires about 7 mg. of iron per day during the first week and about 10 mg. at 3 weeks. From the sow's milk, the piglets get only 1-2 mg. of iron. Therefore, if piglets are confined with no other source of iron except via the milk, serious losses from anemia may occurred. The amount of iron to be supplied can be roughly calculated as:

Needed per day	=	7mg
Iron from milk	=	1-2mg
Shortage	=	5-6mg X 30 days
	=	150-180mg needed

Injection is the preferred route of administration; however, iron can be given orally (iron paste, iron solution). Iron varies in their concentration, usually being 50 or 100 or 200 mg iron per ml. Therefore, considering above concentration, each piglet would need 4ml or 2ml or 1 ml iron injection. When 50 mg/ml preparation is used, inject 2ml two times within a gap of 10 days.

Iron concentration in the purchased product	Dose
50mg/ml	4ml
100mg/ml	2ml
200mg/ml	1ml

1ml of Feritas injection could be given agt 4th& 14th Day of age to combat the deficiency of Iron.

Signs of iron deficiency/nutritional anemia are lost of appetite, slow growth, poor hair and skin condition which cause "sluggish impression in piglets", emaciation, paleness, restlessness and hard breathing (thumping).

Crushing. Piglets crushed by the sow are commonly seen in most farms. Factors which may contribute to this are:

- Weak-legged sow, especially the hind legs, tends to fall abruptly when lying down.
- Weak piglets which may not be able to get away quickly.
- Poor pen construction resulting to slippery flooring and improperly made farrowing hurdles.
- Inadequate heating resulting to huddling near the sow.
- Poor water supply of the sow resulting to frequent standing and lying down to drink
- Disturbance of the farrowing unit causing excitement on the part of the sow.

Splay legs. Piglets are sometimes born with weak leg muscles and are not able to stand and walk properly and their hind legs are slip sideways. These piglets sit characteristically with their hind legs spread apart.



Severely affected piglets can be splayed on their front legs as well. Most of these piglets die of starvation and crushing. Splay-legged piglets can still be corrected by a special leg taping or tying technique. Slippery floors, genetics and piglets exposed to very low temperature predispose occurrence of splay leg.

Feeding during Lactation

Feeding of lactating sows. It is important to feed the lactating sows in proper way. Otherwise it may lead to udder congestion and lactation problems causing starvation or over feeding, which causes scouring or diarrhea of piglets. On the days between farrowing and weaning the daily feed allowances are as follows (based on a lactating-sow feed with 3100 - 3200 kcal DE/kg).

- 24 hours around farrowing : 0 - 1 kg
- 1st day : 2 kg
- After this first day increase the allowance gradually (daily increments of 0.5 kg) until the 'target feed allowance' is reached
- Target feed-allowance: 1.5 kg + 0.5 kg per piglet

This allowance is very high for sows with larger litters. Highly productive sows with large litters need a lot of feed but are unable to eat the target quantity. Of course, the sow's appetite is decisive for the amount you can really feed. When litter size is big and the climate is hot, sows often consume less feed than required. In such cases, it is highly important that the quality of the feed is good. Roughage and voluminous feeds are not recommended for lactating sows. The following points should be considered to increase feed consumption in lactating sow with higher litter size.

The daily feed requirement of lactating sows may vary depending on prevailing environmental conditions. It is established that sows raised under unhealthy conditions need more feed to compensate for that used up in combating the usually poorer environment. For this reason, it is apparently difficult to recommend absolute feed level. However, one should think of maintaining sows in good condition to eliminate milk problems.

Some points should be taken care off while feeding lactating sow

- It is important, particularly in the suckling period, that a sow gets sufficient nutrients for a good milk production and to prevent her from losing too much weight.
- Make sure there is a good water supply
- The temperature be made as comfortable as possible for the sow
- The sow should not have been allowed to become fat during gestation (obese sows tend to lose appetite in the suckling period)
- The practice of feeding roughage in the gestation period has a positive effect on the sow's feed intake capacity
- Use a special feed for lactation, which is more concentrated
- Make use of self feeders
- Feed more often smaller quantities and in the coolest periods (many sows might like to eat during the night)

Table: Feeding schedule of sow during entire production cycle

Sl no	Period	Qty/day/sow (kg)	No of days	Total feed (kg)	Type of feed
1	Period from weaning to 7 th day	4	6	24	Lactation feed
2	Loss days	2.5	19#	46.75	Gestation feed
3	Date of service to 28 th day of pregnancy	2.5*	28	70	-
4	29 th –85 th day of gestation	2.75*	57	156.75	-
5	86 th to 112 th day of gestation	3.25*	17	55.25	Gestation
6	113 to 114 th day of gestation	2	2	4	Gestation +Lactation
7	115 th day(day of farrowing)	1	1	1	Lactation
8	1 st	2	1	2	-
9	2 nd	2.5	1	2.50	-
10	3 rd	3.0	1	3.00	-
11	4 th	3.5	1	3.50	-
12	5 th	4.0	1	4.00	-
13	6 th	4.5	1	4.50	-
14	7 th	5.0	1	5.00	-
15	8 th	5.5	1	5.50	-
16	9 th	6.0	1	6.00	-
17	10 th	6.5	1	6.50	-
18	11 th	7.0**	1	7.00	-
19	12 th to 41 st day	7.0	30	210.00	-
20	42 nd day or day of weaning	Nil	1	0	-

* For the gilts the requirements will be reduced by 0.25 kg.

** Average litter size at birth is taken as 11.

When loss days is 19 (assuming 2 litters will be produced /year).

Feeding of Baby Pigs

When a litter size is large, the sow cannot adequately feed her piglets, and it becomes necessary to supplement the limited milk supply with a creep ration of sufficient nutrient concentration. Again, when the piglets grow, their nutrient requirement increases, whereas, the production of sow's milk is decreases gradually and extra source on nutrients should be supplied to the piglets in the form of feed.

Creep feeding is the practice of feeding a solid feed to piglets whilst they are suckling the sow from 2nd week of age. Creep feeding initiates and promotes development of both digestive system and digestive

enzymes enabling them to digest nutrients from feed sources other than that of milk. The followings points should be kept in mind while feeding creep feed to the piglets.

- Always fresh and clean creep feed should be provided to piglets away from dam.
- Creep feeding should be started at 10-14 days of age or at least 10 days prior to weaning.
- Offer creep feed when sows are feeding and always remove the uneaten creep.
- Do not overfeed the piglets, always fed to appetite. Introduce small troughs or top up the trays more often if the piglets are eating well.
- Ensure adequate supply of clean fresh drinking water.
- The creep feed bags should be stored in a cool place and closed properly to prevent feed taking up foul odour or becoming rancid.

Table: Feeding Scheme for Piglets and Weaners

Age of Piglets(in weeks)	Amounts of feed/head/day (gm)	Type of feed
2	100	Creep feed
3	150	Creep feed
4	200	Creep feed
5	300	Creep feed
6	400	Creep feed+ grower *
7	500	Grower
8	600	Grower
9	700	Grower
10	800	Grower

* Changing of feed should be gradual

Health care and Management

Economic and death losses due to diseases in young pigs are a constant risk. Maintaining herd health to assure profitability requires a working knowledge of diseases especially those affecting lactating sows and sucklings. Animal husbandry practices, building design and nutrition play significant roles in disease prevention. A combination of the proper use of antibacterial for treatment, vaccines for prevention and improved husbandry programs that reduce disease spread will lead to both a profitable pork production for producer and a safe meat nutrient for consumers.

Economics of the Activity

CBA (Cost Benefit Analysis) of Fattener Pigs			
Parameters	Unit	Existing	Recommended
No. of Piglet	No.	2	2
Age of Piglet (At the time of buying)	Months	2	2
Wt. of Piglet (At the time of buying)	Kg	12-15	15-18
Duration of Rearing	Months	12	11
Adult Body Wt.	Kg.	70	90
Feed Ingredients	Consumption Per Day		
Kitchen Waste	Kg	1	1
Green Leafy Material	Kg	1.5	1.5
Rice	gm	250	500
Oilseed Cake	gm	0	50
Mineral Mixture	gm	0	20
Salt	gm	0	15
Formula Feed (Packed Feed)	gm	0	0
Total Feed Consumed	Kg/Day	2.75	3.085
Cost of Feed Ingredients	Unit Cost (Rs./Kg.)	Cost (Rs)	Cost (Rs)
Cost of Grain (Rice)	20	5	10
Cost of Oil Seed Cake	40	0	2
Cost of Mineral Mixture	250	0	5
Cost of Salt	10	0	0.15
Cost of Formula Feed	30	0	0
Cost of Feed Per Day	Rs./Day	5	17.15
Expenses			
Piglet Cost	Rs.	5000	6000
Feed Cost (Total in Rearing Duration)	Rs.	1800	5659.5
Medicine & Vaccine Cost	Rs.	100	100
Sanitation Exp.	Rs.	0	100
Misc. Exp.	Rs.	500	500
Total Expenses	Rs.	7400	12359.5
Revenue			
Total Meat available	Kg	70	90
Price of Meat	Rs./Kg.	300	300
Sale Revenue	300 Rs./Kg.	21000	27000
Profit	Rs./Pig	13600	14640.5
Total Profit (unit of 2 fattener Pigs)	Rs.	27200	29281
Duration of Rearing	Months	12	11