SWINE (Sus domesticus) MANAGEMENT PRACTICES FROM BREEDING TO FARROWING

Arjel M. Lagungan¹, Alminda M. Fernandez², John Paul L. Matuginas³, Honorina D. Rupecio⁴, Zabdiel L. Zacarias⁵, Saikat K. Basu⁶, Peiman Zandi⁷, Carla Famela T. Suson²

¹Jose Maria College Foundation, Inc., College of Agriculture
Philippine-Japan Friendship Highway, Sasa, Davao City
²Rizal Memorial Colleges, Inc., College of Agriculture, F. Torres St., Davao City
³PFS, Lethbridge, Alberta, Canada T1J 4B3
⁴Yibin University, International Faculty of Applied Technology
Yibin, Sichuan, 644600, P. R. China;
Chinese Academy of Agriculture Science

Research Paper

Received: 30.03.2023 Revised: 15.04.2023 Accepted: 28.04.2023

ABSTRACT

This narrative was made to determine the different factors in raising Pigs: breeds, environment, biosecurity, health, and management practices. Approaching the sow or gilt for breeding is safer and more practical by enhancing artificial breeding using new technology (artificial insemination), where you can select your desired quality varieties to be produced as needed, paying attention to performing activities from the pre-farrowing period up to the farrowing process. Inquiry is done in order to attain information and knowledge regarding the selected topic. The training pertaining to the selected topic, which is swine management, was limited to some parts of the technology; thus, personal experience alone might not be a hundred percent reliable source of information. For this, inquiries while in training were performed in terms of casual conversation with the supervising officer or station trainer and technician in the production of pork (swine meat) here in the country might result into an importation, which will negatively affect our backyard or small-scale swine producers. Decrease in production is highly contributed by factors such as environment, breeds as well as mismanagement, thus, it is imperative to strictly implement standard management practices. Moreover, given the environmental factors such as disease occurrence, sanitation and proper management practices will help avoid or at least minimize disease incidence in our local swine farms.

INTRODUCTION

Swine, name for any of the cloven-hoofed mammals of the family Suidae, native to the Old World. A swine has a rather long, mobile snout, a heavy, relatively short-legged body, a thick, bristly hide, and a small tail. The name swine is applied mainly to domestic animals, which are also known as hogs. Sometimes these are called pigs, a term which in the United States is more correctly reserved for the young animals. Boar is a term for a male domestic swine suitable for breeding, but the term wild boar is used for the common wild swine, Sus scrofa, of Eurasia and N Africa. There are no true swine native to the New World, although a similar, related animal, the peccary.

Keywords: Breeding, Swine, Farrowing, Sus domesticus, Management, Pig.

*Corresponding author: alminda.fernandez@jmc.edu.ph
is found in the deserts and rainforests of parts of N and S America. The so-called wild hogs found in parts of the United States are descendants of the European wild boar, introduced for sport hunting, or hybrid offspring of escaped domestic hogs.

Swines are valuable for their flesh, prepared as ham, bacon, and pork, and for their fat (lard); they also provide many other products, e.g., leather for gloves, footballs, and other articles, and bristles for brushes. Hogs are commonly grouped as meat-type or lard-type, with the former dominating the U.S. farms. Hogs are raised in nearly all parts of the United States, but the corn belt of the Midwest is the chief hog-raising area, with Iowa by far the leading hog-producing state.

A great majority of U.S. hog production has moved from open pens to enclosed, mechanized facilities. The trend is toward huge, factory-like hog farms where swine are born and bred inside structures that feed, water, and dispose of wastes while controlling ambient temperature. Though hogs will eat almost any food, modern swine feed is nutritionally balanced to produce rapid and healthy growth (The Columbia Electronic Encyclopedia, 2012).

Generally speaking, this narrative report aims to emphasize the management practices for swine in accordance with the experience of the author during the internship program. Specifically, this narrative paper also aims to relay the following: To discuss the economic importance of raising swine; To present the management practices used for swine production; To emphasize the advantage of Artificial Insemination (A.I.) in cross breeding; and To discuss the advantage and disadvantage of swine production.

**Swine management Practices at TESDA-WNAS**
The mandated standard operational management for swine raised in the station were the following practices:

**FARROWING HANDLING**
This operation was performed three times already during the duration of the internship program. Handling pigs during farrowing is performed by assisting the pigs during the process, ensuring the safety of both the sow and the piglets. Mortality of newborn piglets is commonly associated with the farrowing stage in which most piglets were rolled over by the sow or choked by the umbilical cord.

The process starts by assisting the sow during delivery, making sure that the piglets were properly exiting the sow's body. Once a piglet is released, the umbilical cord was cut, and the piglets were wiped with a clean piece of fabric in order to remove mucus and other body fluids, particularly in the face. This fluid might suffocate the piglets if not removed immediately. After cleaning the piglets, they are separated from the sow temporarily by placing them into a separate clean pen. When all piglets are out, they are taken back to the sow in order for their first lactation to occur. The newborns were placed beside the sow's udder to receive their first dose of colostrum or the milk. Colostrum contains all the necessary nutrients they need that are very essential for their survival.

**TAIL DOCKING**
Tail docking is performed at least 6 hours after farrowing, or a day after farrowing, but not more than 2 days. In this process, the tails of the piglets were removed, leaving only 1 inch. Tails were removed using side-cutters or clippers, and sprayed with disinfectant solution (combenex).

Tail docking was performed at TESDA-WNAS in order to avoid tail biting of piglets. This natural behavior of the piglets causes damage on the other piglets, making them prone to infection due to the wound from biting. Tail biting incidents reduces the value of the piglets, causes higher morbidity, and compromises the piglets welfare.

**EAR TAGGING/NOTCHING**
Ear tagging is performed 3 days after farrowing, and so as ear notching. These are the two identification methods used in TESDA-WNAS in order to properly classify piglets. Ear tagging uses a tag that contains numeric data or code that indicate the piglet's age, batch number, and the mother (sow) number.

**TATTOOING**
Tattooing was done as an alternative for ear tagging or notching. This was performed by tattooing the ear – specifically the right ear, with a numeric code representing population number. Tattooing was performed using a tattooing stamp, and ink. The stamp contains small needles forming a designated number, which were pierced into the back of the right ear.

**CASTRATION**
Castration was performed when the piglet reaches 2 or 3 weeks after farrowing. The process was the removal
of the testicles, particularly for piglets classified for meat production purposes. Castration is required since uncastrated pig’s meat has a foul aroma, which producers or buyers avoid the most. Piglets were restrained properly by placing them in a chair/rack, or by the help of a colleague who would hold the piglet still. A knife (surgical blade) can be used to remove the testes from the piglet, or by using a banding tool called elastrator. This tool cuts the blood flow to the testes by applying pressure by installing rubber bands on the neck of the scrotum.

**Economic Importance of Raising Swine**
Swine production provides red meat for the human diet, uses less feed than is required to produce beef or lamb, and is also a source of hides and cooking fat. Swine are also scavengers, and can make productive use of many materials that would otherwise be wasted. Pigs (young swine of either sex weighing less than 120 pounds), were domesticated in China as early as 4900 B.C. Biblical writings mention them as early as 1500 B.C., and there are references to the keeping of swine in Great Britain in 800 B.C.

Today, swine are raised throughout the world. Their numbers are particularly high in countries that are heavy producers of corn, barley, and potatoes. Countries that have surplus dairy by products such as buttermilk and whey also produce many hogs (domesticated swine weighing more than 120 pounds, raised for market).

The only places where swine production is not suitable are where religious law (as in Islam and Orthodox Judaism, for example) or strong tradition forbids the consumption of pork. Even in such places, small operations serving special markets are sometimes permitted.

The technology of swine production is well developed. Feeding, management, housing, health, and marketing systems vary greatly within and between countries. In parts of the world where labor is cheap and capital is scarce, labor intensive systems tend to be used, while production methods in industrialized countries tend to be more capital intensive. Hogs in some areas are raised primarily on forage, while elsewhere large numbers are produced in total confinement without green feed.

**SWINE MANAGEMENT PRACTICES**

**Feeding Dry Sows**
Flush or increase the feed allowance of the sow about four days after weaning. This can be done by providing high energy rations. A week after breeding, stop flushing. Limit the energy feeds to keep the sow trim during the gestation period. This will prevent the sow from becoming too fat which will result in fewer and smaller piglets.

**Feeding Pregnant Sows**
Give the sow 14% crude protein ration up to the eleventh week of pregnancy. Give the animal two kg of feeds daily depending on its size and weight. Increase the feed allowance during the last five weeks of pregnancy. Give the sow plenty of green feeds like camote vines and kangkong 2 to 3 days before farrowing. Green feeds will prevent constipation during farrowing. You may also use one-third rice bran and two-thirds gestation ration.

**Feeding Lactation sow**
Feed lactating sows 5 kg of brood sow ration depending on its body size. Provide plenty of clean drinking water to improve milk secretion and to prevent constipation.

**Feeding Baby pigs**
Creep feeding may start as early as 5 to 8 days after birth if the piglets are well managed. They should be able to eat sufficient amounts of concentrate feed so that they can be weaned earlier. From the pre-starter ration, shift the feed to the starter ration after weaning. Shifting must be done gradually to avoid rejection of feeds by the piglets. This can be done by mixing the old feed with new feed little by little until the piglets learn to eat without noticing the difference.

**Feeding Growing-finishing Pigs**
When the pigs reach 30 kg, change the ration to grower ration following the same procedure of shifting. Feed the pigs punctually 2 to 3 times a day. As their weights increases, their feed allowance must also increase. If possible at this stage, feed them an average of 2.5 kg of feeds daily. At about 3 to 4 months, shift the grower ration to a fattener ration. This feed is given until the pigs reached market weight which is 90 kg or more. Provide plenty of green feeds between meal times.

**Feeding Breed Pigs**
Gilts and boars have to be hand-fed with 2 kg of feed containing 14 percent of protein every day. To improve their breeding efficiency, the fed allowance has to be increased 2-3 weeks before breeding. During the breeding season, feed the boars after service not before service. Doing this will improve the efficiency of the boar.
Farrowing Management

After breeding, the sow should be kept in a dry, clean and hygienic enclosure in a comfortable place. It should be closely observed for estrus symptoms around 20 days after breeding to assure the non-return of estrus and expect the conception. Pregnant sow should be shifted to a clean farrowing house before 3 weeks of farrowing.

Sign of Approaching Farrowing

This can be considered in three stages, the pre-farrowing period, the farrowing process and the immediate post-farrowing period when the afterbirth is expelled.

Pre-Farrowing Period

The preparation for farrowing starts some 10 to 14 days prior to the actual date, with the development of the mammary glands and the swelling of the vulva. At the same time teat enlargement occurs and the veins supplying the udder stand out prominently. The impending signs of farrowing include the following:

- A reduced appetite and restlessness, the sow standing up and lying down and if bedding is available chewing and moving this around in her mouth. If she is loose-housed on straw she will make a bed.
- Within 12 hours of actual delivery of piglets, milk is secreted into the mammary glands and with a gentle hand and finger massage it can be expressed from the teats.
- A slight mucous discharge may be seen on the lips of the vulva. If a small round pellet of faeces is seen in the mucous and the sow is distressed, farrowing has started and it is highly likely the first piglet is presented backward.

Table 1: Feed ratio for swine production (TESDA Swine Competency Module).

<table>
<thead>
<tr>
<th>Ration</th>
<th>Weight (kg.)</th>
<th>Feeding Days</th>
<th>Amount/day Kg.</th>
<th>No. of days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Starter</td>
<td>Up to 10 kg.</td>
<td>10-54 days</td>
<td>0.50 kg</td>
<td>44</td>
</tr>
<tr>
<td>Starter</td>
<td>10kg. to 25 kg</td>
<td>55-82 days</td>
<td>1.0-1.2 kg</td>
<td>27</td>
</tr>
<tr>
<td>Grower</td>
<td>25kg. to 60 kg</td>
<td>83-137 days</td>
<td>2.0-2.2 kg</td>
<td>54</td>
</tr>
<tr>
<td>Finisher</td>
<td>60kg. to 83 kg</td>
<td>125-155 days</td>
<td>2.2-3 kg</td>
<td>30</td>
</tr>
</tbody>
</table>

Estimated Number of Heads:

Pre-Starter : 44 days x 0.30 kg = 13.2 kg.
Starter : 27 days x 1.2 kg = 32.4 kg.
Grower : 54 days x 2.2 kg = 118.8 kg.
Finisher : 30 days x 2.5 kg = 75 kg

Farrowing Process

- This can range from 3 to 8 hours and piglets are usually delivered every 10 to 20 minutes but there is a wide variation.
- There is often a gap between the first and second piglet of up to three quarters of an hour.
- The majority of pigs are born head first but there are more pigs presented backwards towards the end of the farrowing period. Immediately prior to the presentation of a pig the sow lays on her side, often shivering and lifting the upper back leg.
- This is an important point to take note of because it may indicate the presence of a stillborn pig.
- Twitching of the tail is seen just as a pig is about to be born.

Delivery of the Placenta

This usually takes place over a period of one to four hours and is an indication that the sow has finished farrowing although some afterbirth will sometimes be passed during the process of farrowing. Once the sow has completed the farrowing process there are certain signs that should be observed.

- She appears at peace, grunts and calls to the piglets.
- The shivering and movement of the top hind leg ceases. If this is still occurring it is likely that a pig is still presented.

After the placenta has been delivered there will be a slight but sometimes heavy discharge for the next 3 to 5 days. Provided the udder is normal, the sow is normal and eating well ignore it, it is a natural post-farrowing process. Occasionally a pathogenic organism enters the uterus causing inflammation (endometritis). This may cause illness, requiring treatment.
Weaning Management  
Weaning is commonly thought to be the most stressful event in the life of a pig. During weaning, maternal separation, change of environment, mixing with non-litter mates, transportation, change in temperature, new sources of feed and water, handling and administration of vaccines can all coincide and put piglets under considerable stress. This is important because stress at weaning has been shown to reduce growth rates, and even cause dysfunction in the intestines that often results in post-weaning diarrhea.

Environmental Factors  
One of the key factors to ensure piglet safety during and after weaning is the environment. Environmental factors significantly contribute to the disease and mortality of weaned piglets. A piglet's stomach is much more sensitive than the older ones, thus, they are more prone to diseases. It is important to remember that the environment that the livestock lives in has to be at all times clean and orderly, especially the floor.

It's also important to ensure the temperature is correct for freshly weaned pigs. About 28°C (or 83°F) in the laying area is ideal, and if possible it's good practice to pre-warm the accommodation to avoid cold shocking the weaners. Where there's no heat source, and this applies to pigs going into straw-based finishing systems too, make sure there's suitable kenneling and plentiful bedding to allow them to keep warm.

Feed and Water Requirements  
Feed and water is another area that should be carefully considered, and indeed this is something that should be considered in the weeks before weaning when creep feed should be offered in an attempt to encourage intake before the pigs are separated from the sow. It's important that the pigs are given the same creep feed after weaning so that they get access to something they're already familiar with.

The way the feed is delivered is important too, and ideally you should provide several options of feeder type, for example a floor trough and hopper. Exposing the pigs to different feeder types at this stage will engage their curiosity and assist in helping them discover the feed on offer. The same is true for water, where arguably it's even more important that intake is maximized, as this can often be the limiting factor as far as feed consumption is concerned. Several options of water sources, including bowls and nipples, should be provided to give the pigs every opportunity to discover the drinking points and start building water intake.

Newly weaned pigs dehydrate rapidly and must have ready access to drinking water. Whether you are providing water through nipple or bowl drinkers, proper positioning and sanitation of watering devices are essential elements of proper pig hydration.

Feeder Adjustment  
Feeder adjustment must start with the first feed placed in the feeder. Regardless of whether the first diet comes in bags or bulk, the feed gate in all feeders should be closed before placement of the first pellets. The feed gate then should be opened so a small amount of feed is visible in the feed pan.

Avoid placing pelleted feed into an empty feeder with the agitation gate open, because it will result in large amounts of feed filling the trough, leading to feed wastage and difficulty in achieving the proper feeder adjustment. Although adequate amounts of feed must be present in the feeder at all times after weaning, too much feed in the pan of the feeder can also decrease growth rate.

MANAGEMENT PRACTICES GIVEN TO WEANLING PIGS  

Classification  
At weaning time, the pigs are classified according to their sizes and weights. In doing this they are given equal chances to get to the feeding and watering trough and sleeping areas.

Deworming  
The weanlings should be given a dewormer a few days after weaning. Deworming may be repeated after 30 days depending on the severity of worm infestation, deworming program and dewormer being used.

Feeding  
Give them the same feeds they have been used to while they are still sucklings. It is not good to change the ration at weaning time to minimize post weaning scours.

Vaccination  
Vaccination of the piglets against hog cholera is also done to animals after they have been dewormed. The piglets are immunized only once in their lifetime until they are sold as slaughter animals.
Sanitation
Weanlings should always be provided with plenty of clean drinking water, the pen should be cleaned daily and the pigs may be given a bath every time cleaning is being done. Maintain the pen in sanitary condition to minimize scouring. Before weaning or weanling, the flooring has to be sanitized with microban, or any disinfectant solution with water.

Castration
In big commercial piggeries under the best management, there are few pigs uncastrated in the weanling pens. These pigs should be castrated as soon as possible.

Different Stress Factors that must be minimized during the Management of Growing Pigs:

Overcrowding
Overcrowded animals are more susceptible to diseases.

Transferring of Pigs
This is another form of stress. Transferring of pigs from one pen to another is generally not recommended.

Temperature
Pigs in areas with cooler prevailing temperatures perform better than those raised in hot and humid environmental conditions.

Overexposure
Growing-finishing pigs suffer more during summer months or when the temperature inside the building is high. To minimize this incidence consider the construction of the hog house.

Feeds and feeding
Underfed animals are subjected to continuous stress. Take note of the average daily feed intake and expected average daily gain in weight or the average weight of the animals for a given age. On the other hand, overfeeding causes considerable amount of stress and discomfort to the animals.

Table 2: Nutritional requirements/feeding scheme of piglets to market age Feeding Scheme for Piglets to Weanlings (TESDA Swine Competency Module).

<table>
<thead>
<tr>
<th>Age (Weeks)</th>
<th>Grams Feed/piglet/day</th>
<th>Feed type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50-100</td>
<td>Booster</td>
</tr>
<tr>
<td>2</td>
<td>125</td>
<td>Pre-starter</td>
</tr>
<tr>
<td>3</td>
<td>250</td>
<td>Pre-starter</td>
</tr>
<tr>
<td>4</td>
<td>350</td>
<td>Pre-starter</td>
</tr>
<tr>
<td>5</td>
<td>400</td>
<td>Pre-starter</td>
</tr>
<tr>
<td>6</td>
<td>500</td>
<td>Starter</td>
</tr>
<tr>
<td>7</td>
<td>600</td>
<td>Starter</td>
</tr>
<tr>
<td>8</td>
<td>700</td>
<td>Starter</td>
</tr>
<tr>
<td>9</td>
<td>800</td>
<td>Starter</td>
</tr>
</tbody>
</table>

Castration
Castration, the surgical removal of two testicles, is a routine management practice for male piglets destined for slaughter. The testicle produces sperm and the male hormone, testosterone. Pork from boars, or uncastrated male piglets at slaughter weight, may have an odor during cooking that is very offensive to many people. This is called a "boar odor or boar taint".

There are various ways to castrate piglets. The position of the animal during surgery and the method and degree of restraint are dictated by the age and size of the animal. The best time to castrate a piglet is when it is four to 14 days of age.

Young piglets are easier to hold or restrain, bleed less from surgery, and have antibody protection from the sow’s colostrum and milk. Piglets can be successfully castrated when they are less than four days old; however, one of the major disadvantages of castrating...
very young piglets is that scrotal hernias are more difficult to detect and the testicles may not have descended.

SWINE BREED IN THE PHILIPPINES Presently, there are six available pig breeds that can be raised in the country. These are the Landrace, Large White, Pietrain, Duroc, Hampshire, and the Philippine native pig.

**Landrace**
The Landrace breed is white or pink in color and has small, droopy ears. It is also tall in stature but slender as compared to the other breeds. It is known for its mothering ability and also for converting its food well into its weight. Its feet, however, are weak so if they're to be used for natural breeding, then they would have to be kept safe from any injury.

**Large White**
Similar to the Landrace is the Large White. It is also white in color but has ears that are slightly erect as compared to that of the landrace. This breed can also convert its food well to weight and has a good mothering ability. Large Whites can easily adapt to its environment as long as they're well cared for in terms of housing. If they're in not so good conditions, this could negatively affect their performance.

**Hampshire**
The Hampshire pig breed is black but has a white or pink 'belt' that runs from its neck to its front feet. It also has erect ears and slightly small feet. Like the first two breeds, it also has good mothering abilities and is suitable for meat production even though its capacity to appropriate the food it eats into its weight is only average. Hampshire breed can adapt to any environment or living conditions without affecting its performance especially during its fattening stage.

**Duroc**
Duroc is distinguished by its reddish to dark brown color. As opposed to the other types of pigs, this breed is commonly used for reproductive purposes since it can improve the offspring from other breeds if it mates with it.

**Pietrain**
The Pietrain is a pig breed that is known for its black spots scattered around its white or pink body. It's best used for meat production since it has a higher percentage of meat rather than fat. Pietrains also adapt well to its environment and can also be used as a boar for breeding purposes.

**Philippine Native**
Lastly, the Philippine native pig is a breed that's resilient against sickness and can survive in natural environments or with natural farming practices.

**Boar Selection**
According to Aleli Jean Paulican, from the technical support staff of ATI-Regional Training Center in Region X, the best breeds to use as sows or gilts are the landrace, large white, and Hampshire. As for the boars, the Duroc and pietrain are good options.

- Grow faster than average
- Have less back fat than the average of the breed
- Have eaten less feed than average to reach a specific weight.

A good boar will reach 90 kg live weight before it is 140 days old, have a P2-backfat measurement of 15 mm or less, and require only 2,99 kg of feed or less to gain 1 kg in weight to grow from 30 to 90 kg live weight. Buy boars at least four or five weeks before they are used for the first time. This will allow you time to keep them in quarantine and the boars to adapt to the new environment.

Training and Use of Young Boars - Young boars must be carefully supervised to identify possible problems and to make sure that they will not injure themselves when serving a sow for the first time. Important considerations in selecting a boar are:

- The boar must be at least 8 months old.
- The boar and the sow should preferably be about the same size.
- The boar should work (serve the sow) in his own pen or in a pen that is familiar to him.
- The floor of the pen must not be slippery and all obstructions removed.
- A small sow and not gilt should be used to train the boar.

**Artificial Insemination (A.I.)**
Artificial Insemination or AI is the alternative for natural breeding techniques. With this technology, the livestock, especially the gilt or sow, are much safer and injuries will be prevented. However, this technology also requires skill and the adequate and right equipments to be used. In the process, the semen of the boar is deposited into the gilt/sow by the use of

Arjel M. Lagungan et al., 19
artificial penis or catheter. The main objective of this method is to increase the use of good boars thereby hastening the genetic improvement of the herd.

During the internship, artificial insemination was performed. The boars where the semen came from are of a landrace breed, and the gilts and sows are Duroc. This approach at TESDA-WNAS is much safer and manageable, considering that Duroc breed is known for having the shortest yet wildest temper. With this natural breed characteristic, it is hard to manage Duroc boars when in heat. Thus, replacing the boars with landrace became the alternative.

**Advantages of Artificial Insemination**
- Raisers are not needed to buy and maintain boar.
- A small native sow can be served by a big boar through A.I.
- Transmission of disease is greatly reduced.
- More sows can be serve by the boar throughout the breeding age.
- Prepotency of the boar can be tested in a much shorter period of time.
- Prolong the active life of a boar through regulated breeding.
- It allows the use of genetically superior boars economically by increasing the boar to sow ratio.
- It allows the rapid spread genetically superior traits of the boar in the herd for the improvement of progeny.

**Limitations of Artificial Insemination**
1. Need a properly trained technician.
2. Difficulty of storing diluted boar semen over a prolonged period of time.
3. Additional cost for laboratory chemical and storage equipment.

**Prospects and Challenges of Swine Production**

Swine production has many advantages:
- Swine convert feed to meat more efficiently than cattle or sheep do. A beef steer requires about nine pounds of feed to produce a pound of beef, a lamb requires about eight pounds, while a hog requires from four to five pounds of feed per pound of live weight. Swine are prolific, commonly producing two litters per year and from six to twelve pigs per litter.
- Swine excel in yield of useable carcass compared to other animals that produce red meat. Dressing yield is from 65 to 80 percent for swine, but 50 to 60 percent for cattle, and 45 to 55 percent for sheep and lambs.
- Hogs can convert some wastes and by-products into meat. Examples are garden waste and some types of garbage. (Garbage such as food and garden scraps should be cooked before being fed to hogs to help prevent the spread of disease.).
- Very little labor is required.
- It is possible to get by with a small investment for buildings and equipment.
- Returns come quickly. A gilt (young female swine) may be bred at eight months, and the pigs are ready for slaughter six months after farrowing.
- Hogs are an excellent source of home-processed meats. This is due to their ease of dressing and to the superior curing and keeping qualities of pork.

**There are also drawbacks:**
- A hog's diet must rely more heavily on concentrates, which are expensive, than on roughage, which is cheaper.
- Production requires fairly careful management to achieve good results.
- Swine are very susceptible to numerous diseases and parasites.
- Swine cannot utilize pasture as effectively as can cattle or sheep

**CONCLUSION AND RECOMMENDATION**

Swine / hog raising is indeed an income generating business, with an average farm gate price of 160 pesos per kilogram for liveweight, and 350 pesos market price for the pork (meat).

Technical skills and prior knowledge has to be taken into consideration before venturing into one. In contrast with plant/crop production, livestock production has its own advantages and disadvantages, thus, there is a huge difference in managing it.

Considered to be the widely consumed meat; the pork, which is the main product of swine production, a
decrease in its production might negatively affect the economy – given that this decrease might come in a large scale.

Looking into an economic standpoint, decrease in the production of pork (swine meat) here in the country might result into an exportation, which will negatively affect our backyard or small scale swine producers. Decrease in production is highly contributed by factors such as environment, as well as mismanagement, thus, it is an imperative to strictly implement standard management practices. Moreover, given the environmental factor such as disease occurrence, sanitation and proper management practices will help avoid or at least minimize disease incidence in our local swine farms.

In a backyard hog farm setting, it is important to observe and improvise, particularly on the breeding methods to be used. Specifically speaking, the selection of whether what breed will be used as a boar and sow or gilt. Environmental factors play a role in the success of breeding and swine production or business in general.

Venture into hog raising business if the capital is enough or large enough to invest into it. With higher capital comes higher profit, thus, it is important to remember that backyard hog farming is dependent not only on the management skills of the owner, but with the capacity of the owner to spend for it as well.

Artificial Insemination (AI) is highly recommended as a way for breeding. It is less risky, and more importantly, a higher chance of productivity can be attained using the technique. It is also significant since semen from a single boar can cater more than 2 sows or gilts at a time.

Boar and sow selection is very important to ensure vigorous production. Best breeds to use as sows or gilts are the landrace, large white, and Hampshire, while Duroc and Pietrain are good options for the boar.

APPENDICES

Figure 1: Duroc Sows. These sows are intended for breeding. The sows are separated on their respective pens at TESDA-WNAS.

Figure 2: Duroc Sows. These sows are intended for breeding. The main practice used is artificial insemination crossed with a landrace boar at TESDA-WNAS.

Figure 3: Feeding of swine. Swines are fed according to their age and if they are lactating or gestating.

Figure 4: Clean and sanitized farrowing pen. This pen is intended for newly born piglets.
Figure 5: Farrowing Operation. Farrowing of sows has to be attended accordingly.

Figure 6: Farrowing operations. Farrowing is performed with precaution in order to prevent injuries for both the sow and the piglets.

Figure 7: newly born piglets. These piglets are weaned after they have their first colostrums in order to prevent them from being laid by the sow.

Figure 8: Castration of piglets. Castration is performed especially for fattening pigs. Castration removes the foul odor from the meat of uncastrated pigs.

Figure 9: Piglets for weanling. Weanling is the process of separating the piglets at the right age in which they don't or the mother won't allow them to drink milk anymore. Weanling age is between 19-22 days.

Figure 10: Sanitation inside the pens. This process is performed to sanitize the flooring of the weaning pen to be used for an upcoming farrowing. The sanitary solution used is 10 ml. microban added with 16 liters of water on a manually operates knapsack sprayer.

REFERENCES


