

Introduction

Farrowing is the process of giving birth in sows. In the tropical regions, the environmental parameters such as high temperatures and humidity are common. The farrowing process requires the special attention to assure the health of both the sow and piglets. Efficient farrowing management is important to minimize the risks of complications, reduces the stress, and improves the survival rate of piglets. In the tropical climates, the temperatures are high and farrowing is associated with the environmental challenges such as heat stress and higher risk of infections. Therefore, the farrowing process and appropriate management practices are essential to optimize the production procedure in these regions.

Farrowing stages

➤ Pre-farrowing

- ✓ Signs of approaching farrowing: A sow shows several signs of approaching the farrowing such as restlessness, nesting behaviour and a reduction of appetite. In the days approaching the farrowing, the udder becomes enlarged as it fills with milk and the secretion of colostrum.
- ✓ Preparation: The farrowing area needs to be clean, dry and well-ventilated. In the tropical regions, it is essential to reduce the heat stress in the sow through providing of the shade or fans in the farrowing crate. There is access to the clean and potable water and the sow is fed a balanced feed to prepare her for the farrowing process.

➤ Farrowing or labor

- ✓ Labor onset: Farrowing starts with the sow exhibiting the uterine contractions. This is followed by the expulsion of the

piglets and one piglet in every 15 to 20 minutes.

✓ Stages of farrowing:

- ❖ **Stage 1:** In this stage, uterine contractions begin and the cervix becomes dilates. This stage is last for several hours and is marked as restlessness and discomfort in the sow.
- ❖ **Stage 2:** In this stage, the piglets are expelled out. The sow pushes the piglets through the birth canal one by one. The first piglet is born within an hour of the onset of Stage 2. The farrowing process last from 1 to 5 hrs depends upon the number of piglets.
- ❖ **Stage 3:** In this stage, the placenta is expelled out after all the piglets have been born. The placenta should be passed within a few hours after the last piglet is farrowed.

- ✓ **Assisting the sow:** In the tropical regions, the heat stress slow down the process and farrowing process needs assistance if the piglets are not farrowed within an expected time frame. If piglets are stuck or any delay, a veterinarian needs to be consulted to reduce the complications such as fetal death or injury.

➤ Post-farrowing care

- ✓ **Placenta and cleanliness:** After the piglet birth, the placenta is to be fully expelled out. The retained placentas lead to the infections and other health problems. The sow should also be cleaned to prevent the infections especially in the humid tropical environment which is conducive to the bacterial growth.
- ✓ **Monitoring piglets:** The piglets need to be encouraged to suckle immediately to



get colostrum (first milk) which is important for the immunity of the piglets. In the tropical regions, the risk of hypothermia is lower; however, it is important to keep these piglets in warm and dry conditions especially during the night time when the temperature is low.

Management challenges

- **Heat Stress:** High temperature, relative humidity and temperature humidity index are showing the significant challenges during the farrowing in the tropical regions. Heat stress affects the sow's ability to deliver efficiently leads to stillbirths or low birth weights in the piglets. Management of the farrowing stalls and maintaining a cool environment by application of shade, fans or cooling systems is important.
- **Hygiene and disease control:** The tropical humid environment of the tropical regions increases the risk of the infections during the farrowing. The sows and piglets need to be kept in a clean environment to prevent the diseases such as *E. coli* infections, respiratory problems or skin infections. Proper cleaning of the farrowing crates and pens after each cycle is important to reduce the risk of disease transmission.
- **Inadequate nutrition:** The sows in the tropical regions face the nutritional imbalances due to the challenges of heat stress and humidity. It is important to ensure that the sow is well-nourished before and after the farrowing. Special attention needs to be given to provide the adequate water, minerals and vitamins to reduce the effects of stress and improve the lactation performance.
- **Sow behaviour:** In the tropical climates, the sows are more irritable due to the heat stress. The managerial procedure of the farrowing environment to reduce stress such as giving them a quiet, secluded area helps to improve the sow behaviour during the farrowing.

Farrowing crate and housing management

- **Farrowing crate design:** In the tropical regions, the farrowing crates need to be

well-ventilated with added fans or cooling systems. The crate needs to be large enough to allow the sow to move but small enough to prevent her from the accidentally crushing piglets. The floor needs to be designed to keep the sow clean and dry.

- **Bedding:** Bedding materials such as straw, sawdust or rice husk help to absorb the excess moisture and provide the comfort for the sow. In the tropical regions, bedding helps to reduce the risk of the infections and provides the sow with a comfortable condition in which the sow farrows.

Health monitoring and post-farrowing care

- **Checking for complications:** After the farrowing, monitor the sow for the signs of complications such as retained placenta, uterine infections or mastitis. Infections are accelerated due to the hot, humid conditions; therefore, signs of inflammation or foul-smelling discharge needs to be addressed immediately with proper veterinary care.
- **Piglet care:** After birth, these piglets need to be closely monitored. Piglets with signs of weakness or failure to suckle need to be assisted. In the tropical regions, the piglets are at a higher risk of dehydration, therefore, it is important to ensure that they have adequate access to the colostrum and warmth.
- **Culling of weak piglets:** The weak or underdeveloped piglets need to be culled to improve the general health of the litter. This is especially important in the tropical regions where the high temperatures accelerate the health disorders.

Prevention and control of farrowing problems

- **Vaccination:** The sows are vaccinated against the common diseases such as porcine reproductive and respiratory syndrome (PRRS), leptospirosis and parvovirus before the farrowing process which in turn helps to reduce the risk of disease transmission to the piglets.
- **Temperature control:** With use of fans, air conditioners or cooling systems helps to

maintain an optimal temperature (18-22°C) in the farrowing house which is especially important during the farrowing process to prevent the heat stress in the sows.

- **Hygiene and biosecurity:** The farrowing area should be cleaned and disinfected along with maintaining of the good biosecurity practices which in turn helps to prevent the disease outbreaks.

Conclusion

The farrowing process in the pigs in the tropical regions presents significant challenges due to the environmental factors such as high temperatures and humidity. Correct farrowing managemental procedures such as temperature control, hygiene and monitoring of the sow health is essential to improve the survival and welfare of both the sows and piglets. Proper management of the farrowing environment effectively, the farmers optimize the production and reduce the risk of complications during the farrowing process.