

THE BEHAVIOUR OF SUCKLING PIGLETS

Mihaela Liana FERICEAN, R. PALICICA, Olga RADA

*Agricultural and Veterinary University of Banat, Timișoara, Romania
E-mail: liana.fericean@gmail.com*

Abstract: *In this paper we present a few behavioral features regarding the piglets' birth process, the sow and piglets bonding, piglets investigative behaviour and care application behaviour of piglets. As biologic materials, we used piglets in extensive raising systems belonging to some households in Varfurile, County of Arad. Parturition may take up to 2-3 until 12 hours or longer; the total duration of parturition is different from race to race and from animal to animal, usually being longer with primiparous sows and shorter with multiparous sows. Most times farrowing takes place at night or in the evening. For a sow farrowing in decubitus position, expulsion interval between two piglets is between 10 and 30 minutes. At 10-20 minutes after the parturition, the piglets start to look for the sow's nipples. Fore nipples are preferred because they are rich in milk. After farrowing, sows allow their piglets to suckle and are careful not to crush them. Most of a sow's piglets begin to suckle and get settled permanently at the nipples after 2-3 days of age. Suckling frequency is on average of 25 in 24 hours, diminishing from 27 in the first week to 13 in the fifth week. The duration of suckling also decreases with age from 5 - 4 minutes in first two days to approximately 60 - 40 seconds in eight week. Hierarchical social structure is formed early in pigs, since the nursing period, when the order to the breast is formed. This hierarchy is maintained after weaning, piglets that suckled the most are stronger and more vigorous. The weaning age is important as a guide for their subsequent feeding. Now the age of weaning decreased dramatically in intensive systems as compared to pigs reared in extensive systems. Very good knowledge of the behaviour of piglets is very important to the swine rearing specialist for the following reasons: to model the rearing technology by taking into consideration the natural behaviour of pigs; to adapt pigs' behaviours to rearing conditions as far as possible. An understanding of the natural behaviour of pigs can therefore help us to identify and remedy a range of pig welfare problems.*

Key words: *behaviour, piglets, extensive raising system*

INTRODUCTION

Swine rearing in an industry of the intensive type imposed the reduction of pig rearing area and an artificial lifestyle. As a result of overcrowding and poor rearing conditions, some features of behaviour may appear that are different from those observed in pigs reared in the traditional system, which can produce some disturbances in the production process, with economic repercussions.

Compared to other mammals, pigs display complex nursing and suckling behaviour (FRASER, 1980; SIGNORET et al., 1975). Nursing is frequent, every 50–60 minutes, and the sow requires stimulation from piglets before milk let-down. Sensory inputs (vocalisation, odours from mammary and birth fluids and hair patterns of the sow) are particularly important immediately post-birth to facilitate teat location by the piglets (ROHDE PARFET and GONYOU, 1991).

MATERIAL AND METHODS

As biologic materials, we used piglets from Landrace, Duroc and Pietran race, in extensive raising systems belonging to some households in Varfurile, County of Arad.

RESULTS AND DISCUSSIONS

Farrowing is the physiological act which ends the period of gestation and during which the products of conception are removed.

Swine pregnancy (gestation) lasts for 3 months, 3 weeks and 3 days or an average of 114 days.

Parturition may take up to 2-3 until 12 hours or longer; the total duration of parturition is

different from race to race and from animal to animal, usually being longer with primiparous sows and shorter with multiparous sows.

A few hours before farrowing, sows are restless and lie down and get up frequently, become agitated, hitting parapets with the snout, and grind their teeth.

One to three days before farrowing, the sow makes a nest using straw from its bedding. The sow chooses a safe, dry place where it gathers straw with its snout and limbs, the presence of straw creating a sense of peace for the sow (Figure 1).



Figure 1: The sow makes a nest using straw from its bedding

It was observed that sows exhibit an instinct to defend their nest; if there is a foreign presence, the sow emits threat grunts and displays an aggressive attitude.

Most times farrowing takes place at night or in the evening. Sows farrow in decubitus position and the expulsion interval between two piglets is between 10 and 30 minutes. Some pigs are born with the amnion covering the nasal cavities and in this case the caregiver must intervene.

Elimination of placenta is made after completion of parturition. More rarely, the placenta is eliminated after groups of piglets or after each individual piglet. Tissues from the placenta, which nourished the piglets during pregnancy, are delivered after all the babies have arrived. It should be removed and disposed of. If the placenta is not disposed of, it is usually eaten by the sow.

During the parturition, sows lie down and rise up about seven times in the first stage. Immediately after birth, the piglets' nose and mouth should be cleaned of mucus so that they can breathe easily. The umbilical cord is cut and disinfected with iodine.

Prolonged labor is associated with overweight mothers, genetic problems and babies caught in the birth canal. It is recommended that the caregiver be available at the time of delivery to ensure there are no complications. Piglets are born wet and covered by a thin membrane.

Most will dry quickly, especially in warm weather. It is important that the piglets get the mother's colostrum for the first three days.

After parturition the sow smells the piglets without licking them. The sow knows the piglets by smell, and adopting a strange piglet is possible in the first days after farrowing. The sow sometimes displays a threatening behaviour to strangers in the first week after giving birth, being very irritable. In some cases the sow is aggressive even with caregivers.

In some cases, if the labour is extremely difficult, milk production is reduced significantly and the sow remains milkless. In this case, the piglet's skin gets wrinkled because of dehydration. Intervention is needed and oxytocin must be administered.

The sign immediately preceding parturition is the presence of milk in the mammary glands.

Labour lasts less if all the piglets come out in the normal posture, hind legs first.

Primiparous sows have fewer piglets. At the third, fourth, and fifth parturition, the number of piglets is higher.



Figure 2: Suckling at piglets

At 10-20 minutes after the parturition the piglets start to look for the sow's nipples. Fore nipples are preferred because they are rich in milk. For suckling, the sow adopts lateral decubitus position. This is preceded by the piglets' squealing, which determines the sow to adopt the decubitus position for feeding.

The nipples closer to the mother's head give the most milk, and are usually claimed by the largest, most aggressive piglets. The runts and weaklings are often left with a hind nipple. Supplemental bottle feeding could help the runts. Milk ejection takes two seconds and the sow delivers a grunt (Figure 2).

After farrowing, sows allow their piglets to suckle and are careful not to crush them. Most of a sow's piglets begin to suckle and get settled permanently at the nipples after 2-3 days of age. Suckling frequency is on average of 23 in 24 hours, diminishing from 27 in the first week to 14 in the fifth week. The duration of suckling also decreases with age from 5 – 4 minutes in first two days to approximately 60 - 40 seconds in eight week.

The order of piglets for suckling is established in the first week of life, during which the piglets fight to take the fore nipples and after these are taken, the nipples in the middle are fought for, while the rear nipples are occupied by weaker piglets.

Each piglet has its place to the breast, a social hierarchy being formed now among piglets, which is maintained later as well.

Generally, in the first month, the sow lies flat after nursing, displaying drowsiness. In the last nursing period, the sow prefers a sitting position. Suckling generally takes place on a noisy background.

It is common for piglets to be born within a range of sizes and for the smaller ones to be born last. The larger, earlier born piglets attach themselves to the more productive fore nipples, which they then vigorously defend. This means that the strongest piglets get the most food, significantly increasing their survival chances at the expense of the weakest. This ensures that, when food is scarce, there is a good chance of some of the piglets surviving. When food is plentiful, they all have a chance.

The piglets then develop a pattern of alternating between suckling every hour or so and sleeping. To begin with, the sow spends more time lying on her side and grunts softly to encourage the piglets to come and suckle. After a few days, the piglets initiate most of the suckling by coming up to the sow, squealing and attempting to massage the udder. The piglets keep warm by huddling together close to the mother's udder for the first few days of life.

After one or two days, the sow begins to leave the pigs for short periods. After a week, the piglets become more independent. During this period, the sow can become very protective and attack potential intruders.

Within ten days, piglets depart more from the sow and begin to play, manifesting exploratory or investigative behaviour. After three weeks the sow does not have enough milk for the piglets anymore. Piglets pull the nipple, massage the mammary gland of the sow intensely and cry out of hunger. At this

age they start taking other food as well.

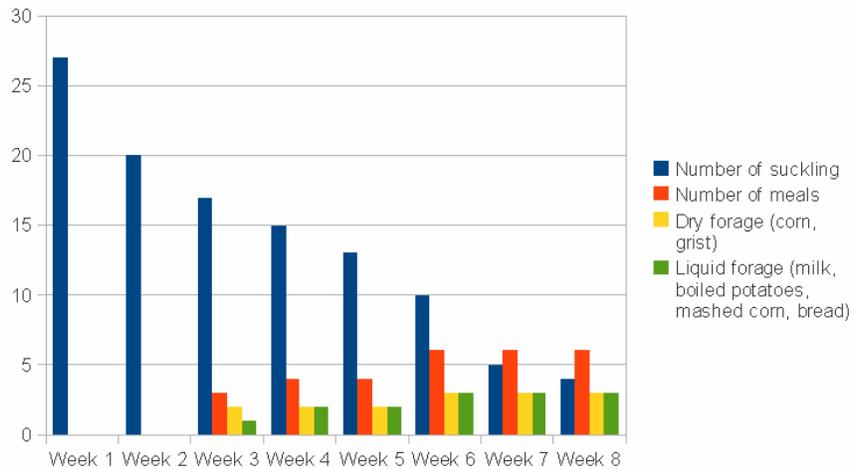


Figure 3: Piglets feeding

After three weeks, diversified food must be introduced. At three weeks piglets eat two meals of dry forage and a meals of liquid forage (milk, boiled potatoes, mashed corn, bread) Began of five weeks have three principals meals of liquid forage (figure 3).

In early life, the piglets make good use of the food received and have a fast growth rate, increasing their body weight by 5 times in one month and by 10-12 times by the age of two months.

The main particularity of feeding piglets is that food is given in early life only as a supplement to breast milk. In the first week of life, piglest must receive a sufficient amount of colostrum.

The trace of milk on the nose of piglets confirms that piglets have received enough milk. If piglets run restlessly, it means that they do not receive enough milk.

After three weeks, diversified food must be introduced successively so that the piglets shouldn't get diarrhea. Diarrhea may begin at the same time with the introduction of food at the age of three weeks or at the age of six weeks when the maternal milk is not the main meal of the piglets anymore. In both cases, the number of the portions must be reduced as well as the liquidity of the food, and the piglets suckle more from the sow.

The younger the piglets are, the higher the number of food portions is, requiring a wider trough. If the trough is small, the noise increases, the piglets run from one end of the trough to another, push each other and are aggressive.



Figure 4: Piglets crowd at feeding trough even if this is large enough

Piglet's investigative behaviour is based on odor and taste. Any new object with which a pig is in contact is initially smelled, after which it is placed in the mouth to see if it is edible. Pigs recognize the four tastes and prefer the sweet taste.

The presence in the ration of forage high in fiber, or of something sour or bitter, determines the pigs to eat less. The food with a sweet taste and the flavour of milk or meat stimulate consumption. Food consumption is stimulated by noise related to handling forage, the turning on of light or other events that coincide with feeding time.

Piglets crowd at feeding trough even if this is large enough (Figure 4).



Figure 5: Piglets are parallel to each other while sleeping

The piglets have a social resting time; they are parallel to each other while sleeping (Figure 5).

The pig is one of the cleanest and most orderly mammals when conditions allow it to manifest its normal excretory behaviour. Piglets keep the lying area clean and dry (figure 6) and move to a side or outside the pigsty to defecate and urinate. For urination and defecation, they prefer darker and wetter places. Elimination behaviour is affected when the pigsties are overcrowded or when microclimate conditions are inadequate.



Figure 6: Piglets keep the lying area clean and dry

At low temperatures, the piglets look for clean, dry and free of drafts places for resting. They prefer floors low in thermal conductivity. If the temperature is raised above the thermal comfort, piglets look for wet areas to be cool (Figure 7).

Care application behaviour. This type of behaviour occurs in suckling piglets before breastfeeding, when by a squealing they specifically ask the sow to lie in the lateral decubitus. This behaviour is also met at all categories of pigs when the usual feeding time is drawing closer. When the

animals are excited, they emit specific sounds. Given this behavior, it is recommended that feeding hours be strictly respected.



Figure 7: Piglets look for wet areas to be cool

CONCLUSIONS

Labor could last anywhere from 2-3 hours until 12 hours or longer with about 10 -30 minutes or more between birthing.

The nipples closer to the mother's head give the most milk, and are usually claimed by the largest, most aggressive piglets. The runts and weaklings are often left with a hind nipple.

Piglets investigative behavior is based on odor and taste. Any new object with which a pig is in contact is initially smelled, after which it is placed in the mouth to see if it is edible.

The piglets have a social resting time, they are parallel to each other while sleeping.

Excretory behaviour is affected when the pigsties are overcrowded or when microclimate conditions are inadequate.

Care application behaviour occurs in suckling piglets before breastfeeding, when by a squealing they specifically ask the sow to lie in the lateral decubitus.

BIBLIOGRAPHY

1. FRASER D. A Review of the Behavioural Mechanisms of Milk Ejection of the Domestic Pig. *Appl. Anim. Ethol.* 6:247-256, 1980
2. PALICICA R., I. COMAN , "Etologie" Ed. Orizonturi Universitare, Timișoara, p. 108-113, 1998
3. PETROMAN P., PETROMAN, C., PETROMAN, L., PETROMAN, I., *Psihologia suinelor*, Editura Mirton, Timișoara, 1998.
4. PETROMAN I "Reproductia suinelor" Ed Mirton Timisoara 1997
5. SALANTIU V., VANDA PETRUT, ULICI P., "Comportamentul animalelor domestice" Ed Oelty Cluj Napoca 1998
6. SIGNORET, J.P., BALDWIN, B.A., FRASER, D. and HAFEZ, E.S.E. "The Behaviour of Swine". In: *The Behaviour of Domestic Animals* (3rd edition). Ed. E.S.E. Hafez. p.295-329. Baillibre Tindall, London, 1975
7. ROHDE PARFET, K.A. and GONYOU, H.W. "Attraction of newborn piglets to auditory, visual, olfactory and tactile stimuli." *J. Anim. Sci.* 69, 125-133, 1991