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Monitoring the Behavior of Pigs on a Pig Farm

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Abstract: The behavior of animals is their adaptation to the functioning of the various external and internal factors of the stimulus, namely: accommodation, or living space; heat; sound; supply of food and water; fear and others. Sense of animals such as hearing, smell, sight and touch, cause different forms of animal behavior.

Modern ethology recognizes three directions:
(1) The study of behavior by observing and describing.
(2) Research and reactions in behavior using biochemical methods.
(3) Genetics of behavior including the evolution of behavior.

In our work, we tracked the behavior of pigs on a large pig farm with a capacity of 1,450 sows in parent breeding stock. On a farm, in addition to any sows and 40 boars used for artificial insemination. The farm is closed, which means that the breeding material and pigs for fattening provided from its own main herd.

The aim is that observation of the observed changes of behavior of pigs present leadership of the farm and to propose measures for eliminating the causes of changes in the behavior of pigs.

Key words: ethology, monitoring, behavior, pigs, farm

1. Introduction

Ethology is the part of biology that deals with the study of behavior of humans and animals. The name comes from the Greek word ethos, which means custom, nature or character, and logos, which means science. It is important to emphasize that this science studies only the physical elements of the habits and behaviors that people and animals develop over a lifetime. This research is based on comparing the behavior of the individual in relation to the type and in this way tries to explain the formation of specific behavior.

Ethology should enable the acquisition of knowledge/understanding of basic categories, systems, and strategies shaped the behavior of individual species of domestic animals, ethogramme some species of domestic animals, behavioral disorders in some species of domestic animals, the welfare of certain species of domestic animals and problems regarding animal welfare.

The aim of ethology is to point out the necessity of knowing the physiological and psychological status of the animals, which is linked to the type, race, gender and microclimate in indoor facilities and in the wider environment. It is exploring the psychological and physical characteristics of animals in order to secure the conditions for their welfare.The founder of modern ethology is a Nobel Prize winner Konrad Lorenz. It proceeds from the assumption that instincts should be viewed in the same way as the organs. Namely, adjustment of the animals depends on the nature of the stimulus, the animals experience and properties. It is important to know the normal behavior in the circumstances, so they could tell no discrepancies. Thus, the characteristics observed in the whole range of means as inherently behavior. Here you can include instinctive movements and reactions. In contrast to the innate behavior is instinctive actions occur as a result of external stimulation. Example easily found in

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animals, the dog will “fully commune” with objects in the apartment, the owner or foot cushion, and in dogs can occur false motherhood. The most commonly used research method is observation, which may be directly or covertly, depending on how much is visible observer. In the ecological observation the most important question is what causes a particular behavior. Observing and describing the behavior of animals is the oldest ethnological methods and still is the most important. Biochemical research is only possible in large laboratories as it is for this method require expensive equipment and specially trained personnel.

In our work, we tracked the behavior of pigs on a large pig farm with a capacity of 1,450 sows in parent breeding stock. On a farm, in addition to any sows and 40 boars used for artificial insemination. The farm is closed, which means that the breeding material and pigs for fattening provided from its own main herd.

2. Materials and Methods

Monitoring the behavior of pigs we perform on a large pig farm with a capacity of 1,450 sows in parent breeding stock. On a farm, in addition to any sows and 40 boars used for artificial insemination. The farm is closed, which means that pigs for breeding and piglets for fattening provided from its own main herd.

In this paper, we followed the following behaviors: Behavior of pigs at feeding and watering; The behavior of pigs in thermoregulation; The behavior of sows and boars during sexual activity; Behavior before farrowing, during and after farrowing; The behavior of sows and piglets during the suckling period; Social behavior of pigs; Changes in the behavior of pigs and finding of the causes of behavioral change.

The farm is divided into two parts, one part is Repro-centre, the second feedlots. Repro-centre consists of the service area, waiting area, a farrowing house and rearing. Within the facilities feedlots there is a test station.

Tracking we conducted individual observation of certain categories of pigs in their environment in the pit lane where normal, everyday there. This means that we are committed to observing facilities reprocenters and feedlots, depending on the category of pigs, age and reproductive cycle of pigs studied. Monitoring of performance we did so we disrupted their daily life events and thus influence the behavior of pigs.

3. Results and Discussion

3.1 The Behavior of Pigs at Feeding and Watering

Feeding pigs is one of the most important technological operations on a pig farm, especially when it comes to large agglomerations pigs of different categories. We know that health goes into the mouth that the diet provide nutrients that are metabolised in the building blocks of matter, hormones, certain vitamins, antibodies, etc. It is therefore necessary that all categories of pigs be allowed to get their meals and to eat undisturbed. In this sense, we have followed the behavior of the pigs at the time of feeding in all categories and in all phases of the reproductive cycle. From building for farrowing, sows farrowed and weaned are translated to the service area. In the service area and come sows are exhausted childbirth and breast feeding pigs, so they should be allowed a gradual increase in the quantity of nutrients to compensate for the lost weight and get into breeding condition. It is therefore necessary to carry out a grouping of pigs according to the time preceding the time of parturition and weaning, and their body weight. Observing sow, we noticed that the animals in these groups are not unification, or that are not classified by the approximate body weight. At the time of feeding in group pens a conflict of individual sows, harassment and other disabling smooth consumption of food. In this great agglomeration of sows housed in group pens we noticed the biggest problem in the nutrition with in repro-centre. Basically the problem is inadequate grouping of pigs according to their size or body weight. In the group housing was functioning automatic feeding, so the food being transported by trolley and hand shovel was put into a container feeding-trough.

Regarding the supply of pigs, observing the height at which the set-drinkers pacifiers, we noticed that the adequate amount and pigs freely drink of water. Always there are pigs that are played with the nipples, sprayed themselves and other pigs. It is also acceptable to fly, but winter is a problem because pigs are too cool down and form puddles of water retained in which pigs are dirty and lie. We have proposed that such pigs play with water placed in individual places on the waiting lines and that impound setting partitions.

Observing pig-sows in the farrowing pen, we noticed that in this there is a general problem in the diet of sows. If not work here via an automatic feeding dispensers, and the food is done manually, the respective blades. Here the problem is exacerbated because diet exercise female workers, but we got the impression that this way of feeding sows fostered. In some pigs, we noticed by decreased appetite and residual food from the previous feeding, which required the removal of food and if the previous day, reducing the quantity of food if the afternoon feeding.

In pigs feeding in the farrowing pen, we noticed that it does not respect the start time and the amount of pre feeding pigs. We have noticed that there are errors in equalization piglets. It happens that in a litter of 10 piglets, added two pigs. Existing piglets do not accept this, especially if you are done unification 4-5 of days after farrowing. That is why we suggested that the equalization-equalization litter by size, done immediately, the same or different days of the farrowing because equalization is done person from the Selection service.

Piglets breeding feeds with mix food, first week after moving from farrowing pens, then the arranged calendar gradually replaced starter 1, a 15 kg gain Starter 2. Exchange one nutrient is carried out gradually to piglets as soon as possible and easier to accept new feed, which is with a reduced protein content, and thus the quality. Since it is not possible to store the piglets from the same litter, and here it is necessary to make adequate equalization performed by the breeding service [1].

Boxing has been observed by the hierarchy of larger and aggressive piglets. When be noted that this harassment piglets per litter continues to be removed most abused pig or aggressive person.

The piglets are moved to feedlots facilities transporting tractor trailer after the breeding station located about 200 m. During the transport of a conflict of piglets from different boxes in an attempt to impose a hierarchical relationship, we have proposed that the batch transport in the trailer for the employee whose presence will attract the attention of piglets so that the period of transport of rearing to go feedlots with less intensity conflict between groups of pigs. Piglets are placed in group pens in the part of the building which is called before fattening. It accommodates piglets of 25-60 kg. Since pigs are housed here from several boxes in the breeding house, and here it is inevitable that additional standardization of litters that begins after removing the young pigs out of the trailer in the hallway before fattening. Here is also important to get used to feeding pigs on the floor at the entrance to the pits to get used to defecation young pigs in a part of boxing away from sustain container. Also is important to monitor the establishment of the hierarchy in the pits to avoid major injuries. We have noticed that automatic feeders here are correct, but that there are not adequate barrier to the feeders, they are broken or missing, so young pigs per feeder walk or lie in it. Boxing lacking chains or tires to play so that that can lead to increased aggression, especially if there is an imbalance in the protein composition, a reduced percentage of protein from animal feedstuffs.

Power fattening is automatic watering, pacifiers, which are at the optimum height, and are set at a height which is 5-10 cm taller than height piglets. In fattening translates young pigs from before fattening, so what boxing than 20 young pigs with an average weight mase (mass) of 60 kg of divided into two groups of 10 young pigs and translated into the following rooms for

pigs, with 10 young pigs in the pen. Since the young pigs came from before them in which there were 20 young pigs, this is reduced aggressive, competition for food is not present because the feeders are large enough and with ten compartments, from which fattened consume food (concentrated mixture) which can be 16% or 14% protein, depending on the determinations in the management of the farm.

3.2 The Behavior of Pigs in Thermoregulation

The animals are homeotherms organisms and have a constant temperature, which manage to maintain a constant and at large fluctuations of the ambient temperature. Animals born in the first days of life act as imperfect as they homeoterms thermoregulation mechanisms are not fully (7).

Therefore, it is necessary to pay attention to the farrowing house and rearing pigs because here the most sensitive to temperature fluctuations. It is important to prevent, especially in the first hours of life occurrence of hypoglycemia non-vital piglets, diarrhea, providing sufficient heat in the pit lane and buildings in general [2].

During the observation the repro-centre and feedlots, generally we found that there were problems in establishing normal body temperature of certain categories of pigs. There were individual cases in which we observed the mechanisms of thermoregulation that activates cold (shivering, increased muscle voluntary activity), which are formed by moistening pigs with splashes of defective teats and pacifiers pressing and playing and swimming with them. We also noticed the mechanisms of thermoregulation at high temperature in various diseases of pigs, for example, MMA syndrome in sows, the respiratory, gastro-intestinal tract and others. Of these mechanisms has been noticed redness of the skin, anorexia and apathy. In pigs, unlike other animals at high temperatures does not change the way of breathing from fast to slow and deep, like some other animals. Therefore, pigs with high temperature subject to stress factors, which is reflected in reduced food consumption due to reduced appetite, all of which leads to a deterioration of feed conversion.

Pigs like to lie in a position conducive to sleep and exposed nose functioning of the fresh cool air. Pigs maintain temperature and grouping into sets, especially for group housing breeding house, feedlot and group housing in the waiting area.

3.3 The Behavior of Sows and Boars during Sexual Activity

In the house the service area, we followed the behavior of boars and sows after the introduction of sows in the service area facility to translation pregnant sows in adjacent structures of individual and group waiting area. We tracked the behavior of boars during the taking of sperm in an artificial sow-phantom, the behavior of boars during their feeding and watering, the behavior of boars during a tour of the building service area and waiting area in the detection of sows in oestrus or there is a problem in maintaining pregnancy. Boars are also sensitive to sudden changes in environmental conditions, changes in temperatures, changes in feeding and watering. On the farm these conditions are largely provided which is manifested by a high percentage of entry of pigs in estrus, a high percentage of high fertility and conception of gilts and sows.

Experts at the farm shall ensure that the facilities for sows maintain optimum hygiene and macro and micro climatic conditions throughout the year. You must take into account the health status of their sows and tends to all the prescribed veterinary-sanitary measures implemented under the instruction of veterinary services [3].

3.4 The Behavior of the Sow Before, During and After Farrowing

Sows from the group and individual waiting area exaggerate, translated into building for parturation 7 days before farrowing sows and 10 days before

farrowing, in order to prepare for dusting. This earlier interpretation aims to gilts and sows to adjust to the existing conditions as well as the bacterial flora in the house, that would be bathed and freed ecto and endo-parasites and to the restricted diet before farrowing minimize the potential for MMA [4].

Before farrowing sows is restless, constantly adjusts seeking a convenient location, a dusting begins after previously occupied paragraph reliance. During farrowing not paying attention to already farrowed piglets until pollinate the last pig. After that, it becomes very caring, muzzle them into the stomach and breasts, or underscores back to the front legs. With farrowed piglets begin loudly comunication. Certain time after farrowing accepts putting under pigs from other sows. Unification or equalization of litters should be done as early as possible in order to plant the time bitch took my tit, along with pigs from our own litters [2].

On the farm we have not noticed big differences in the behavior of sows and piglets suckling period. Notice deviations suited the deviations that have arisen in terms of disrupting the macro and micro climate and the nutrition of sows and piglets.

3.5 Behavior of Piglets and Sows during Lactation

The farrowing pen on the farm has three parts with 60 boxes. Boxing are spacious with plenty of space for sows and piglets. Care and feeding of piglets are at a good level and it shows good health, good growth and a small percentage of die. It also tells us that the technology and technology-enabled good communication between sows and piglets. This connection consists of a large number of characters. The most important voice messages, body language and play a role and chemical characters. Before coming of milk sow grunting louder sounds upcoming suck, checks whether all pigs gathered around the udder, and have found a place next to your nipple. The piglets suckling in the process have developmental stages: the competition for the nipple (better closer to the chest), massaging the nipples, slowly sucking and restore massaging nipples. In the battle for warts in the first days of life, the weight of piglets coming to a better warts, but further regulation of milk depends on whether the pig sufficiently irritated nipple [2].

From this stems the conclusion that the understanding of the behavior of piglets and sows during the suckling period favorable influence on the future life by hogs.

3.6 Social Behavior of Pigs

By analyzing the social behavior of pigs on the farm, we noticed that in every segment of the pigs on farms enabled social behavior, or hanging pig certain age groups in the respective groups. Thus, in the service area was group boxes for keeping sows in the Waiting room 1. The sows are kept in groups by date of insemination and the size of the waiting area of sows. The only in Waiting room 1 with individual boxes contrary to the law on animal welfare and contrary to EU regulations which prohibits the keeping of animals individually, or preventing gatherings and the expression of social behavior.

Social behavior of pigs is not well known among the people in general, among the people who have ever watched these changes, we can easily recognize this rich social repertoire pigs. Wild boars are known to be the ancestors of modern pig farm, show different behavior in the natural environment. After farrowing, pigs quickly establish a hierarchy in terms of the timetable of the teats. It is believed that the first pair of tits behalf of more milk and pigs, which they suck become the largest of the litter. This line is formed within 48 hours and rarely changes [5].

Numerous ethnological studies showed the complexity of pig behavior and brain mechanisms that control it. This species has considerable learning ability and highly developed social behavior [6].

The pig is known to be extremely social, or social animal. Therefore, especially in intensive breeding should be familiar with the social and social behavior of pigs. Development of social dominance in pigs

begins early. Thus, the piglets fighting for breast immediately after birth. In a large overpopulation is particularly pronounced social dominance, pigs warning about the dangers, the proper orientation at the start of sexual activity and others [2].

Changes in the behavior of pigs and finding of the causes of behavioral change. Various causes can cause changes in behavior of pigs. The most important are: excessive noise, the size of the living space, insufficient quantities of food and drinking water, changing the microclimate (temperature, relative humidity and air velocity, the amount of fresh air, light), poor treatment of pigs when certain technological operations or poorly-specific technological operations with pigs.

On the farm in which the observation of the behavior of the pigs were present, to a greater or lesser extent all the above causes behavioral changes, but they were of such intensity that are not essentially disrupted progress of common technological procedures in the farm.

4. Conclusion

(1) On the farm followed the behavior of all categories of pigs within the maximum number of technological operations related to these categories of pigs. It was noted that the main problem in changing the behavior of pigs, irregular and inadequate equalization-harmonization of certain groups of pigs of all categories, from farrowing pens, rearing, feedlots and waiting room. To compare to the service area of the influence of technical defects on the appearance of changes in the behavior of pigs.

(2) We concluded that the faulty feeder-feeders may be the reason for insufficient amounts of food per animal, which can lead to behavior change of sows. Defect of barrier to the waves-vessels feeding sows a serious cause permanent presence of stress factors that disturb the normal behavior in the waiting of sows.

(3) Building of 1, in which it holds about 450 sows in individual stalls does not allow the expression of social behavior of sows.

(4) To vary of temperature regime is widespread in the winter and can disrupt the normal behavior of pigs due to cooling and inclusion of physiological mechanisms of thermoregulation.

References

[1] A. Nitovski, Health piglets with special emphasis on body weight at birth, Specialist work, Belgrade, 1986.

[2] D. Gutzmirtl and Tušek Z., *Ethology Pigs*, Croatian Institute for Agricultural Advisory Service, Zagreb, 2011, pp. 1-4.

[3] Đ. Avakumović, *The Application of Modern Scientific and Practical Accomplishment in Health Care and Reproduction of Pigs*, monographs, Velarta, 1999, p. 115.

[4] A. Nitovski, S. Stamatović, J. M. Jovanović and J. Mustard, Health problems farrow sows in industrial breeding, *Veterinary Glasnik* 43 (3-4) (1989) 247-253.

[5] Y. P. Soon, Reik out oard, Franz J. van der Staay and Rebecca Nordquist E., Monography *Social Behavior in Pigs*, Publisher Faculty of Veterinary Medicine, Utrecht University, Utrecht, 2010, pp. 4-5.

[6] S. Hristov and B. Stankovic, Faculty of Agriculture, 2001, Biosecurity and welfare of Domestic animals, *Biotechnology in Animal Production* 50 (3-4) (2001) 221-226.

[7] V. Stojić, *Veterinary Physiology*, Agriculture Faculty, Belgrade, 1996, pp. 186-191.