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Routine Managemental Practices in Swine

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Needle Teeth Clipping:

Piglets are born with eight sharp, fully developed "needle teeth" (the corner incisors and the deciduous canines), which may be used "as weapons for neonatal rivalry among siblings" to claim "ownership" of one or more teats (Fraser & Thompson 1991). They may lacerate the faces of other littermates and the sow's udder in the course of battling for a position on the udder (Reese et al., 2005).

The sow becomes distressed by the pain from this, which makes her get up and stop feeding her young. Additionally, the sow's udder is susceptible to infection due to the incisions on it. Piglets will also bite and hurt one another as they struggle to get the teat and suckle. These issues can be avoided with the straightforward procedure of clipping the teeth as soon as feasible after birth. As soon as the piglet is born, its teeth should be clipped. When the pig is just 15 minutes old, the teeth can be removed. The amount of time the sow and her young are apart should be kept to a minimum. A set of tooth clippers, pliers, or forceps are required to clip the teeth.

Process of clipping:

- If the sow is not restrained, separate her from her young and place her in another pen. Take care as the sow with a litter can be dangerous.
- Corner the young pigs and keep them together or place them in a box.
- Hold the piglet's head and push the mouth's corner inward to open its jaws.
- Make sure the tongue is out of the way and place the clippers on either side of one set of teeth. Tilt the head so that the pieces of the teeth will fall out of the mouth.
- Cut the teeth as close as possible to the gums.
- Before using the clippers on another piglet, clean them.
- Operate on the rest of the litter and when you have finished put the piglets back with their mother immediately. Keep young piglets warm.

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In an effort to lessen piglet pain and infection from fighting among litter mates for access to a functional nipple and to lessen injury to the sow's udder, it has long been routine practice in hog production to clip the canine or needle teeth of newborn piglets (Krider & Carroll 1971). Routine canine teeth clipping has remained a recommended management technique even if sows are now more capable of milking. However, it has been noted that canine teeth clipping and other piglet processing techniques do cause distress and may have an impact on behaviour (Noonan et al., 1994). According to a study by Robert et al., 1995 allowing low birth weight pigs to keep their canine teeth enhanced their growth and reduced mortality. Fraser et al. (1991) found that pigs with intact teeth gained weight more quickly than their littermates who had their canine teeth cut in big litters.

Some authors have observed less damage to the sow's udder after tooth resection (Brookes & Lean 1993; Hutter et al 1994), whereas others have observed no difference between intact or tooth-resected litters (Brown et al 1996; Delbor et al 2000; Bataille et al 2002). Conclusions concerning the effects of tooth resection in whole litters on growth rate are also divergent: a higher growth rate (Hutter et al 1994), no difference (Fraser 1975; Brookes & Lean 1993; Brown et al 1996) and a lower growth rate (Delbor et al 2000) have all been observed. When selective tooth resection was carried out within litters, growth rate was lower in clipped than in intact piglets (Robert et al 1995; Weary & Fraser 1999; Bataille et al 2002). However, this effect was not found in piglets submitted to grinding (Bataille et al 2002). The reduction in growth rate after clipping seems to depend on litter size, being more marked in large litters (Fraser & Thompson 1991)

According to several research, piglets develop more facial lesions when teeth are left unaltered. In some herds, greasy pig disease is more likely to develop as a result of facial lesions from intact teeth. In newly formed gilt herds, greasy pig disease is frequently an issue. The bacteria enter the body through cuts in the skin caused by teeth that are still in place. Following the discovery of more piglets with greasy pig illness, some farmers who had stopped teeth clipping have started again. For intact teeth and clipped litters, the average facial injury scores during nursing were 0.31 and 0.03 (0 = no wounds and 3 = multiple wounds), respectively (Reese et al., 2005).

In a commercial furrow-to-wean facility, there was no appreciable difference in the nursing variability and nursery growth of pigs with intact or clipped canine teeth. Pigs with cut or undamaged canine teeth have equivalent nursing and nursery growth rates. Pigs nursing either first parity dams or dams of parity 6 or above who had undamaged canine teeth had a decreased percentage of nursing mortality. The number of face abrasions was higher in pigs with intact canine teeth than in pigs with cut teeth, although growth rate was unaffected. By not clipping canines, labour requirements for farrowing processes should be reduced, freeing up labour resources for other, more important tasks (Bates et al., 2003)

Animal welfare implications:

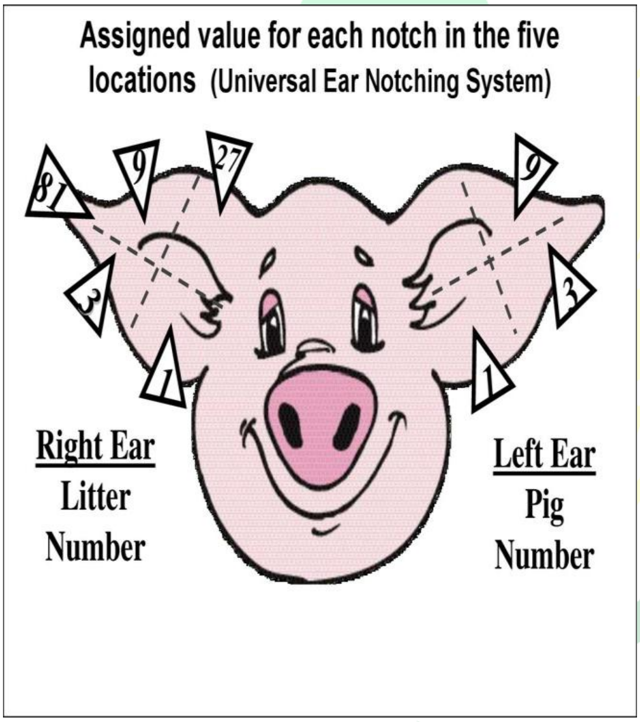
Major dental lesions are brought on when piglet teeth are cut down, either with clippers or a rotating grindstone. These lesions are probably going to hurt and make animal sick. Consequently, the implementation of this approach in commercial pig farms needs to be properly evaluated; taking into consideration both the potential benefits (reduced harm to the sow's udder and other littermates) and concerns (pain and health disorders). When breeders continue to remove teeth, they should do so using rotating grinders rather than clippers because the latter method results in fewer lesions (Hay et al., 2004)

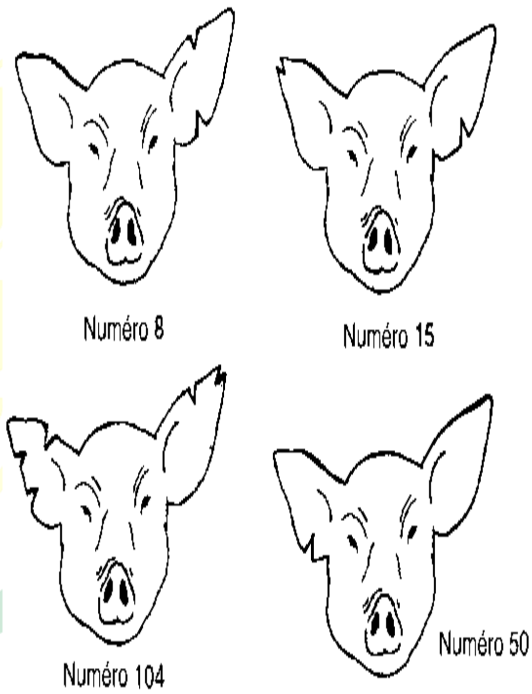
Identification of Pigs:

For specific care, medications, separation or sorting from the group, or to maintain consistency, it is crucial to be able to identify the individual pigs within a group of pigs or pen. Individual animals can now be identified using electronic devices that use touching, image processing, code reorganization, scanning, and trans-receivers (Vranken et al., 2017). The swine sector is also seeing increased use of techniques like RFID and facial recognition systems to identify a specific pig for farm management or research purposes (Benjamin et al., 2019). Animal identification systems that are automated and reasonably priced for farmers are a requirement for the linking of animal data to precision livestock farming systems as large-scale pig production expands (Banhazi et al., 2012). Currently employed in the swine sector or under investigation include radio frequency identification, optical character recognition, and facial recognition.

Notching the ear:

A V-shaped notch can be cut out of the edge of the ear using a pair of clean scissors. Make the notch a few centimeters deep so that in future you will be able to read it from a distance.





Radio Frequency Identification (RFID):

Extensive studies revealed that the best method currently being used to identify pigs in contemporary swine farms is an RFID chip (Brown et al., 2017; Hansen et al., 2018). Information can be stored on the chip of the gadget, which is put into the ears. Tags and RFID chip readers communicate with one another using various radio frequency waves. The device has the ability to produce signals that send data to nearby readers. The data can then be kept and analyzed, and the animals are identified using the RFID chip (Ariff et al., 2014). Additionally, low-frequency RFID technology was used for electronic sow feeders in group pens, sow visitation times, feeding time limits, and identification. Low-frequency RDIF has several drawbacks, though, such as a smaller reading range and the inability to identify multiple animals simultaneously. As a result, modern swine farms now employ ultra-high-frequency readers to recognize groups of animals at a greater range of around 3 to 10 m. Due to their sensitivity and close attachment to swine ears, UHF readers can detect tension, discomfort, injuries, and other things. RFID has other drawbacks, such as tag loss and tag removal before to slaughter. Alameer et al., 2020 indicated that video imaging that uses 2D or 3D camera-based deep learning can be an excellent substitute for RFID for detecting the feeding behaviour of pigs because it is inexpensive and simple to use and requires no special equipment.

Optical Character Recognition:

A low-cost identification system, optical character recognition, is the recognition of printed, stamped, or written text characters (e.g., license plates, barcodes, and QR codes) by a computer. In pig production, optical recognition includes characters on ear tags or painted symbols and numbers (Figure 2). Optical character recognition is performed with a digital camera and data is developed with machine learning to provide remote identification (Mittek et al., 2017). Depending on the clarity and color of the markings, there is the capacity to identify large permutations of animals and, with the exception of optical character recognition on tags, the identification may not need to be removed from pigs prior to slaughter. When the characters are painted, visual identification patterns can fade within a day and when pigs lie close to or on one another, pattern recognition is occluded (Lancaster et al., 2012).

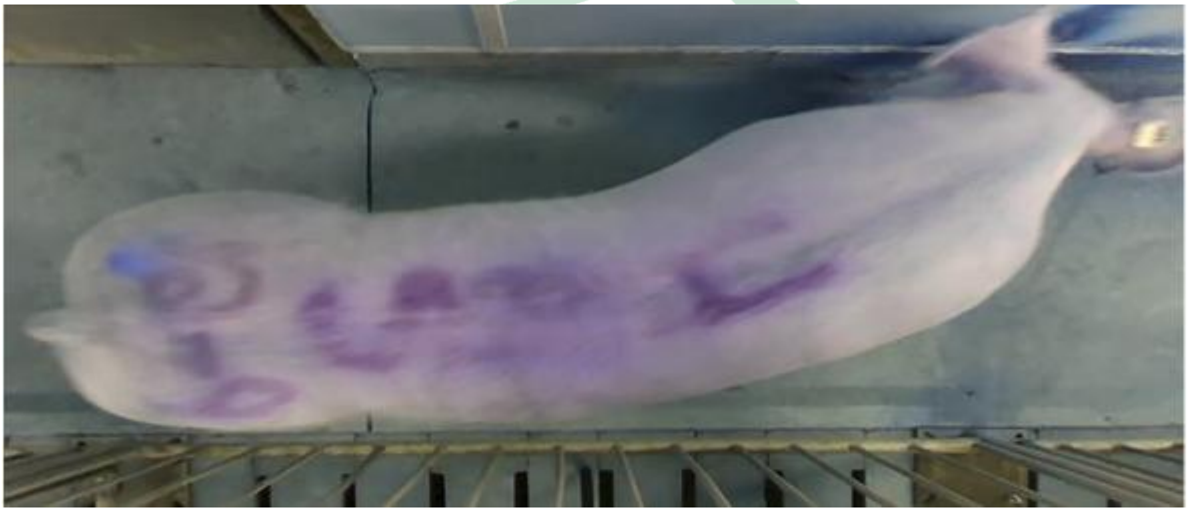


Figure 2. Painted numbers and ear tag for optical character recognition on a sow.

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Facial Recognition:

Facial recognition is one method of marker-less individual pig identification. It was first created for human identification, monitoring, and surveillance needs (Allaf, 2014). Wada et al. (2013) studied frontal pictures of 10 pigs using techniques that are effective at recognizing human faces, and they were able to distinguish 77.0% of the faces when reading the whole face and 97.9% while reading the area around the eyes. Hansen et al. (2018) created a programme that differentiated 10 pigs with 96.7% accuracy using digital images from a camera set on a water drinker (Figure 3). Three areas were used by Hansen's algorithm to identify pigs: the snout and wrinkles above the nose, common markings at the top of the head, and the eye regions. Due to the identification speed of this technology (620 photos per second) and the application of human recognition algorithms for pig faces.

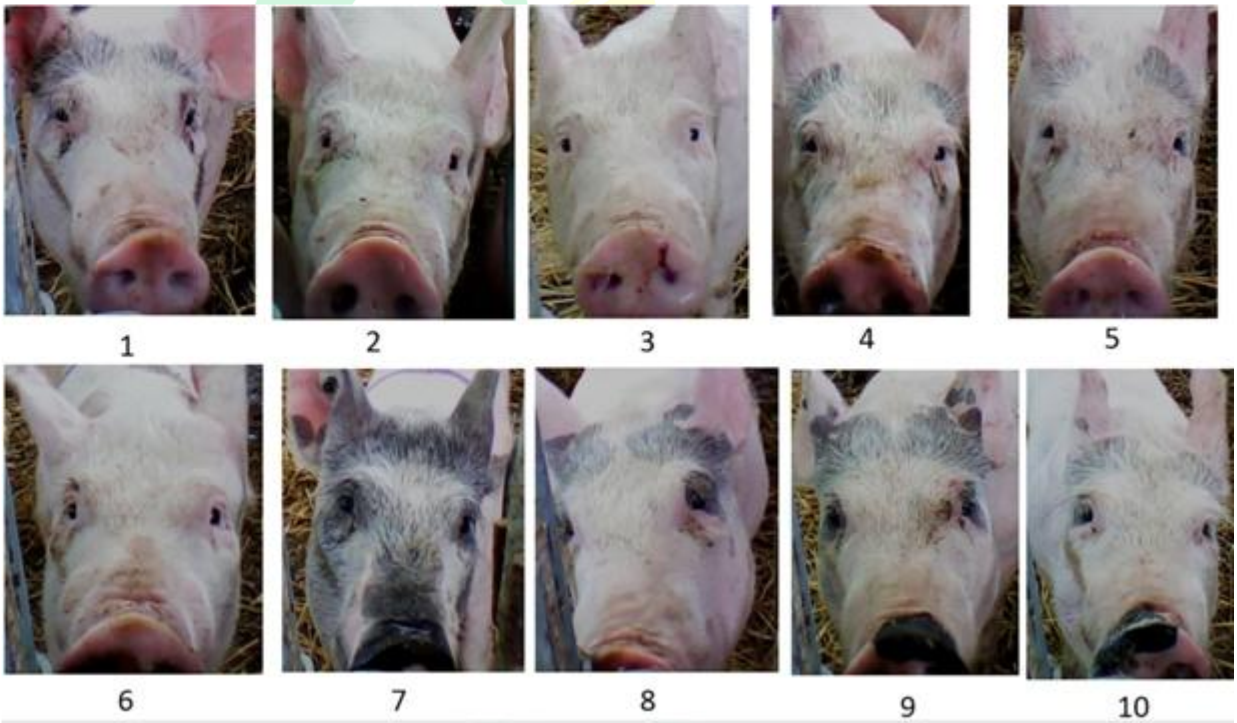

Figure 3. Set of images used for facial recognition training.

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