

FLOOR COOLING FOR FARROWING SOWS

Farrowing sows require an ambient temperature of approximately 18 degrees, while piglets require a temperature of approximately 27 degrees.

In the past, various methods have been tried to overcome this problem. Ventilation of the nose has proved to be the most effective method so far. Research showed that food intake increased by 10kg per feeding round and again 10 kg in combination with floor cooling. In this section, the study focussed on whether extra results could be achieved by cooling the sow's shoulder.

By cooling the floor the sow rests on, the sow's heat emission is increased through conduction and therefore the animal's thermal comfort is increased. The air-cooled floor plate is placed in the farrowing pen at the level of the sow's head and shoulders. This plate is coupled to a recessed air inlet system which provides the cooling. The air inlet can also be coupled to a ground pipe ventilation system or another air conditioning system. The cooling can also be incorporated in the slurry tray.

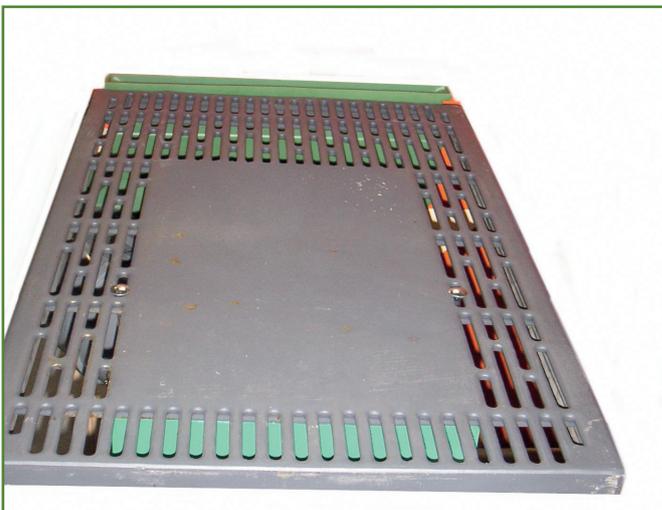
Characteristics of the system with air-cooled floor plate:

- > The floor plate is made of iron, steel or another heat conducting material.
- > The air duct under the floor plate is partially incorporated into the plate and runs parallel to the length of the plate.
- > Air is sucked into the building from outside and transported under the corridors to the farrowing pens.
- > The extra investment for air-cooling amounts to approx. €30 to €100 per farrowing pen.

Advantages of the system with air-cooled floor plate:

- > Improvement of sow welfare.
- > Improvement of food intake and milk production of sows, which leads to better condition of the animals (higher resistance).
- > Improved fertility results. (1 pig more born alive during the next round)
- > Improved technical results of the piglets (higher daily growth and higher weaning weight). This leads to improved technical results of finishers.
- > Lower investment costs and more energy efficient than water-cooled systems.
- > No annual costs for maintenance and energy.
- > Less loss caused by "bedsores."
- > Ventilation capacity can be reduced by as much as 50%.
- > Simple to integrate into existing ventilation systems.
- > Improvement of sow reproduction results due to better condition at the end of the lactation period.

Depending on the climate and application in combination with or without slurry trays an even higher efficiency rate can be made by using ground pipes or a water-cooled conditioner.



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