SUMMARY

Several studies have shown that weaning pigs are in great need of heat. The reason for this is mainly because the pigs are given very little feed just after weaning. Some of the pig producers of today have tried to get along with these problems by building some kind of hut for the pigs. Some of these pig houses have been included in this study. The study has shown shortcoming functions for the pig cottage. The expected heat increase has not occurred. This is so mainly because the cottages is not sealed enough and therefore the heat in the cottage leaks out.

A prototype of a heat hut have been made with space for 10 weaning pigs. Different heights of the roof (opening area), and different amounts of insulation have been studied for the effect of differences in air temperature, outside the cottage compared to the inside of the hut, ΔT. Roof heights between 400 mm and 700 mm have been studied. Roof heights about 700 mm is a common height for the huts that are produced nowadays. Roof heights below 400 mm is not considered relevant because at that height there is a problem for the pigs to get into the hut.

It has been shown that the opening area had most effect on the increase of ΔT. The study showed that it’s possible to get a ΔT of more than 12°C with an uninsulated hut without any additional heat. If you in addition to that add insulation on the roof and the walls you get a ΔT of further 1°C. This increase in temperature is often not enough for weaning pigs that often get little feed.

Houszka (2001) showed that the wall- and roof materials in the cottage have great influence on the operative temperature of the cottage. By combining a small opening area and the use of materials that reflects the heat well in the hut you are probably able to reach expected temperatures, without additional heat, for the weaners.

A methodology is presented which determine different values of the floor thermal resistance of floors. The methodology is based on a simple well insulated heat vessel witch is filled with hot water and whose only possibility to release heat is to the floor surface. By studying the temperature decrease process you can determine the thermal resistance of different floors without knowledge of the floor insulation, thickness of the concrete and the surface temperature at the time of the study.

This value of the floor thermal resistance for the floor is used to determine the lower critical temperature for the weaning pigs by using a methodology that was presented by Bruce & Clark (1979). Those lower critical temperatures are presented in table 10, given weight of the pigs, part of maintenance energy requirement and the thermal resistance of the floor.