

7. Summary

In the present investigation from altogether 360 fattening pigs one glas-covered Infodex®-Transponder (Destron/IDI) of the size of 18 x 3,0 mm was injected to each pig subcutaneously in the area of the base of the right ear. Because of the combination of different methods of sterilization and disinfection of transponder and injection needle the 360 animals were divided into nine groups. Gassterilized, non-sterile and with 2% Savlon® solution disinfected transponders were injected with needles which were not disinfected or disinfected in 1% Savlon® solution or 70% ethanol between each injection.

During the fattening period the clinical findings at the implantation site were recorded and the size of the observed swellings was measured. The data received were subjected to a statistical evaluation, which should reveal statements about the temporal progress of healing of the tissue around the transponders and the interactions of the treatments of the injection needle and the transponder for each group. Furthermore, the functioning, the discovery and the behaviour of movement of the transponders during the period of investigation and the removal from the carcass at the slaughterhouse were investigated.

The following results were obtained:

- 1.) The injection can be carried out quickly and easily with an injection pistol in the area of the base of the ear. A competent and careful injection is an assumption for a constant non-moving positioning of the transponder.
- 2.) The results of the presented study show that the base of the ear is a suitable implantation site for the pig, as has also been previously shown in other publications.
- 3.) After implantation three series of clinical symptoms have been noticed. During the first days after implantation low-grade or medium-grade signs of an acute inflammation have been found in numerous cases. Between the day 1 and the 42 after implantation inflammatory swellings or abscesses occurred in single cases depending on the group, and from day 56 non-inflammatory, low-grade swellings were found. No statistically significant correlation was

seen between the inflammatory signs at the beginning and the non-inflammatory swellings at the end of the fattening period.

4.) The results of the statistical evaluation give strong evidence that for the implantation of transponders in pigs in practice it is necessary to sterilize or disinfect the transponder and the injection needle. A comparison by pairs of the mean values of the groups with the Tukey test showed that the group 2/2, in which the injection needle was not disinfected between the consecutive implantations of non-sterile transponders, was significantly different from several other groups. In the group 2/2 there were clearly more abscesses than in the other eight groups. It was proved that the application of a gassterilization or disinfection with Savlon® to the transponder has a positive effect on the healing of the tissue around the transponder. The disinfection of the injection needle is not nearly as important as the disinfection or sterilization of the transponder. The interaction between the treatment of the transponder and of the injection needle is statistically significant, but the results of the statistical evaluation do not give clear evidence to which method of combination of sterilization and disinfection of the transponder and injection needle has to be preferred. A positive effect could not be proved when liquid disinfectants were used for the treatment of transponder and injection needle at the same time. But considering the results of the descriptive statistics and the clinical findings it is clear that the simultaneous use for the implantation in practice seems to be recommendable. For this a combination of both disinfectants Savlon® and ethanol (70 %) can be used. The results showed that Savlon® is generally suitable for the disinfection of injectable transponders.

5.) During the whole period of investigation 41 (11,39 %) of altogether 360 implanted transponders failed. Of the failures 29 (8,05 %) occurred during the fattening period and 12 (3,33 %) during the process of slaughter. As reasons for the failures 21 (5,83 %) were registered as losses and eight (2,22 %) as defects of transponders during the fattening period and six (1,66 %) losses and six (1,66 %) defects of transponders during the process of slaughter.

6.) The calculated mean value of the distance of migration from day 0 to 14 after implantation was 1,5 cm. On average there was only a low-grade variation of the relative position of the transponder in % in relation to the mean size of the ear from day 3 to 98 after implantation.

Altogether a clear tendency of migration of the transponders to medial in direction of the neck was observed. From the 314 transponders that still existed, at the beginning of the carving of the carcasses 221 (70,38 %) transponders were visible, 65 (20,7 %) were palpable and 28 (8,92 %) were not discoverable.

7.) The presented results demonstrate that the removal of all transponders from the carcass could not been carried out quickly and reliably during the routine process of slaughter. In this study 306 (97,45 %) from 314 transponders could be removed from the carcass by cutting off the right ear. Eight (2,55 %) transponders remained for the present in the carcass in the area of the head.