

6 SUMMARY

An examination of the influence of marketing organisations on animal health and meat quality of fattening pigs on the basis of collected slaughter check results, pH-values and meat temperatures of the ham.

In the production and marketing of pork, the decline in meat consumption in Germany runs concurrent with the organization of quality assurance and meat label programmes. The confidence of the consumer should be won back by the improvement in animal hygiene and the quality of the meat. The aim of the following study is to review the influence of different forms of production (meat label programme, conventional pig rearing) on the health and on the quality of the meat of pigs. Taking into consideration the structures of the producers, the influence of compulsory measures, as for example breeding programmes, maintenance and transport conditions, on the health of the animals and the quality of the meat will be studied and compared with data from conventional pig breeding. The studies were carried out in an abattoir in Lower Saxony over the course of one year (september 1997 - october 1998) in the framework of the "Project for Integrated Animal Welfare and Quality Assurance in Pigs" (**PIQ**).

1) To obtain an overview of the health of the pigs, the organs of all the animals examined were evaluated. From 584.778 pigs 69,3 % were found to have pathological-anatomical findings in the plucks. Changes in the lungs were found in 50,4 % of the animals. From these 5,3 % were classified as highly inflamed. The livers of 16,1 % exhibited milk spots. Pericarditis and pleuritis were diagnosed in 4,9 %. These data, which agree with results from similar studies, show clearly that with regard to the health and husbandry of pigs there is a serious need for action.

2a) The influence of a controlled production of fattening pigs as in meat label programmes on the health of the animals was examined in 71.068 pigs. From these 47.380 animals came from 54 units from a producer association (**PIQ 1**) which essentially laid down a specific hybrid breeding programme, a veterinary herd supervision and 12-hour fasting period before transportation. 7.464 pigs from 27 producers came from a second producer association (**PIQ 2**) which put value on farming based on animal welfare principals and which was environmentally protective, quality orientated and rural including careful transportation. As a control group (**PIQ 0**) 16.224 pigs were examined from 29 producers which were not connected to producer associations.

From the frequency of pathological organs in the pigs of farms producing quality label meat (**PIQ 1, PIQ 2**) it was clear that compared with the producers which had no connection with the meat label programme (**PIQ 0**) these had not achieved their aim of permanently improving the health of the stock and there-

fore increasing the quality of the product. Some measures, such as free range rearing systems in **PIQ 2**, improved the health of the pigs only insignificantly. Even if the percentage of organ lesions in the group without meat label programme (**PIQ 0**: 75,3 %) was higher than in the groups with meat label programmes (**PIQ 2**: 69,4 %; **PIQ 1**: 66,6 %), this was based for **PIQ 1**, however, simply on a small percentage of infected livers and for **PIQ 2** mainly on marginally healthier lungs.

The lower rate of liver problems in **PIQ 1** in comparison with **PIQ 0** and **PIQ 2** (10,8 % < 27,4 % < 28,2 %) can be explained by a more consequential herd supervision within these producer associations and better hygienic conditions due to slatted floors.

The reason for somewhat less pathological changes in the lungs in **PIQ 2** compared to **PIQ 0** and **PIQ 1** (40,4 % < 51,5 % > 53,7 %) can be attributed to the fact that the animals were reared free-range.

2b) The comparison of the quality of the meat in the three groups shows that the animals from the meat label programmes (**PIQ 1**, **PIQ 2**) clearly produce meat of better quality than the carcasses from the producers without a meat label programme (**PIQ 0**). The pH-value and the temperature of the ham were raised in 25.348 carcasses from **PIQ 1**, in 4.837 animals from **PIQ 2** and 7.644 pigs from **PIQ 0** (in total 38.829 carcasses). The PSE-rate from **PIQ 0** was more than double that of **PIQ 1** and **PIQ 2** (17,4 % > 8,3 % > 7,6 %). The meat temperature was lowest in **PIQ 2** compared with **PIQ 1** and **PIQ 0** (40,3°C < 40,8°C < 41,0°C). The regulations of the meat label programmes in relation to breeding, transport and handling of the animals before slaughter have a positive influence on the quality of meat. This applies particularly to **PIQ 2** due to the longer waiting time at the abattoir.

3) The question follows as to which business structure and management, independent of the special requirements of a meat label programme, influences the health of the herd. Findings of the organs of the 71.068 animals from the three groups examined and the data from the business records of the 110 producers were evaluated.

The farrow-to-finish-production of the units and the regularly carried out hygiene measures (cleaning and disinfection) can be conclusively taken as having a positive influence on the health of the stock.

4) Finally, independent factors influencing pH-values and meat temperature were examined. The trend that leads to rising slaughter weight and increase in lean meat content with a deterioration in the health of the animals with low pH values and raised SKT was apparent.

This study shows that meat label programmes, by means of specific guide-lines, exerts an insignificant positive influence on the health of most pigs but, however, they are no guarantee for good animal health for the consumer.