

8 Summary

Pathological, histological and bacteriological examination of broilers affected with ascites, hepatitis and deep dermatitis

Within a period of nine months 120 broiler carcasses affected with ascites, hepatitis and deep dermatitis rejected as unfit for human consumption at slaughter, were examined together with 40 control broiler for bacteriological, pathological as well as for histological findings. Beside the investigation of the aerobic mesophilic colony count, the bacteriological examination included further hygienically relevant microorganisms like *E. coli*, *Enterobacteriaceae*, *Campylobacter* spp., *Clostridium perfringens*, coagulase-positive staphylococci and *Salmonella* spp. The areas examined were orientated on the respective reasons for rejection. The examination of broilers with ascites focussed on the abdominal cavity liquid and on the liver, while from broilers with hepatitis only the liver tissue was selected. From broilers with deep dermatitis the affected skin and subcutis were bacteriologically examined. Additionally, the breast muscle tissue of all animals was investigated to demonstrate a possible spread of bacteria in the animal body.

In comparison to broiler carcasses declared fit for human consumption at slaughter, broiler with ascites had a lower body mass and an increased liver mass. The spleen had normal or reduced size. By pathologic-anatomical examination two different groups of animals with heart and liver findings were detected. While some broiler with typical heart and liver lesions were obviously affected by a right ventricular failure, these symptoms could not be found at other broiler. But the latter group showed obvious liver alterations, which indicated an infectious genesis of the disease. While the liver samples of broiler with right ventricular failure showed only a low bacterial load, the liver samples of broiler without heart failure were sometimes severely contaminated with *E. coli* as well as *Clostridium perfringens*.

Compared to the control group the broiler chickens with hepatitis had a lower body mass and an increased spleen mass. In some cases the livers were extremely enlarged and showed necrotic lesions and granulomas throughout the parenchyma.

Although the results of the macroscopic and the microscopic examination did support the theory of an infectious genesis of the disease, the bacteriological status of the livers of broiler with hepatitis was in most cases comparable with those of the control group. However, the livers of broiler chickens with hepatitis were significantly more frequently and severely contaminated with *E. coli*.

In comparison with the control group the broiler chickens with deep dermatitis exhibited a similar body mass and an increased liver and spleen mass. The skin lesions were frequently combined with other *E. coli*-associated lesions like pericarditis, hepatitis, perihepatitis and/or aerosacculitis. *E. coli* in very high counts could be isolated from the skin lesions. *E. coli* was also found in some samples of the macroscopically unaffected breast muscle tissues.

Irrespective of the reason for rejection approximately half of the examined broiler were *Campylobacter*-positive. Since this bacteria was found in many areas, for example, in the skin, in the abdominal cavity liquid, in the liver as well as in breast muscle tissue it could be assumed that the contamination of the carcasses and the organs was postmortem exogenic and intravital endogenic. Compared to the high level of contamination with *Campylobacter* spp. the contamination of German broiler chickens with salmonellae is insignificant. Salmonellae could only be found in three of the examined carcasses.

Regardless of the reasons for rejection, approximately half of the histologically examined liver samples showed accumulations of myelocytes within the parenchyma. This finding indicates the presence of an infection with the avian leucosis virus, subgroup J.