**Risk management in farm animal health and welfare – current technical developments**

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With the advent of modern production systems since the beginning of the 70ies, livestock production increased considerably and the worldwide production of meat rose in about 60 years from 70 to 350 million tons following the growing demand for food from animal origin of an increasing human population of 8.2 bn people today. Citizens and consumers are increasingly concerned about the living conditions of intensely farmed animals and their health and welfare. In recent years, new technologies, also addressed as Precision Livestock Farming (PLF) tools, were developed or are in progress. They can monitor permanently and in real time the environment of animals, their behaviour, can give indications on health and welfare issues and warnings when signs of anomaly appear. The importance of an early recognition of strange behaviour or symptoms of disease can be read from the high costs that animal losses cause because of infectious diseases. The direct costs of e.g. zoonotic diseases have been estimated at more than $20 billion and indirect costs at over $200 billion to economies worldwide. New sensor systems allow early cough detection in pigs, lameness monitoring, continuous and in real time indoor climate measurement (temperature, relative humidity, wind speed, noise level, light intensity, carbon dioxide, ammonia). Such real time monitoring systems further allow permanent production transparency, can enhance the confidence of farmers in their production and helps to better understand the animals. It can stabilize and improve production and may even raise confidence of consumers in modern animal farming and its products. Early recognition of infectious diseases contributes to the One Health concept. It can reduce spread of diseases, helps reducing farm animal losses and thus the loss of resources.