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TITLE:

SCREENING OF ANTIBIOTICS FROM ANIMAL HUSBANDRY IN THE AGRICULTURAL ENVIRONMENT

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ABSTRACT BODY:

The targeted use of antibiotics in farming systems is essential for animal health. But at present there is still a lack of information about the amount of applied antibiotics and the impacts on environment. We do not know, if there is a relationship between the status of hygiene in the stables and the application of antibiotics. Because of insufficient information about the amount of antibiotic in manure, in soil or in plants it is also not possible to make a risk assessment concerning antibiotics in the environment.

Therefore in 2012 an investigation has been started to screen the situation in pig- and cattle-farming and in the agricultural environment around this farms in Saxony (Germany). The aim of the study was to quantify the applied veterinary antibiotics, to quantify the antibiotics in the manure and the environment and to quantify the relationship between hygiene status and the applied antibiotics.

The investigation includes 27 cattle- and 16 pig-farms. We are able to identify up to 40 antibiotic agents in manure and the corresponding fertilized soil, the surface-water and the plants. Based on detailed plan of investigation the gathered data were collected in a common database. In all farms the status of hygiene has been analyzed. To estimate the resistance situation ESBL and MRSA samples were collected in faeces, in dust and with sock probes. In 20 of the 43 farms samples have been taken to test for antibiotic agents in manure, soil and plants. The fertilized soil was investigated before fertilization and 14 days after fertilization. If possible also a sample of surface water was collected.

The investigation isn't finished up to now and will be going on. Only in farms with a higher level of antibiotic agents in manure we could also find residues in soils, but only on a very low level, nearly or below the limit of determination. Further conclusions are not possible so far.