

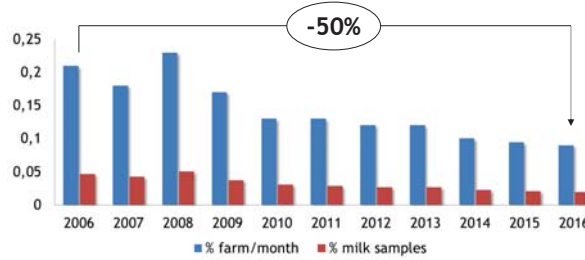
SCREENING FOR ANTIBIOTIC RESIDUES IN BAVARIAN EX-FARM MILK.

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Motivation

The use of antibiotic substances in veterinary therapy is under critical observation. On one side animal welfare of cows is entering the top themes in media and treatment of sick cows is regarded a matter of humanity, on the other side residues of drugs in food stuff of animal origin are a major concern of consumers. In addition anti-microbial resistance is one of the global threats for human health in the 21st century.

Monitoring of Inhibitors according to the MGVO.

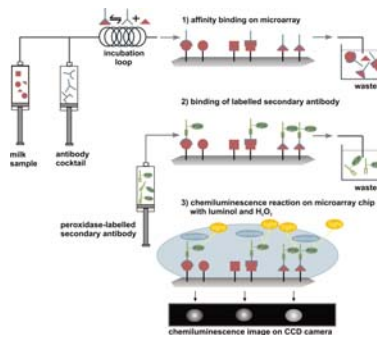


In Bavaria, Milchprüfung Bayern e.V. is responsible for executing the milk quality testing and payment regulation. Annually around 1.9 million screening tests of ex-farm bulk milk for inhibitory substances are performed (avg. 4,6 tests/farm per month). Data for the last 10 years show a reduction of positive findings by 50%, arriving at a frequency of inhibitor positive tests of 0.02% (16 positive tests per 100,000).

Aim and Methods



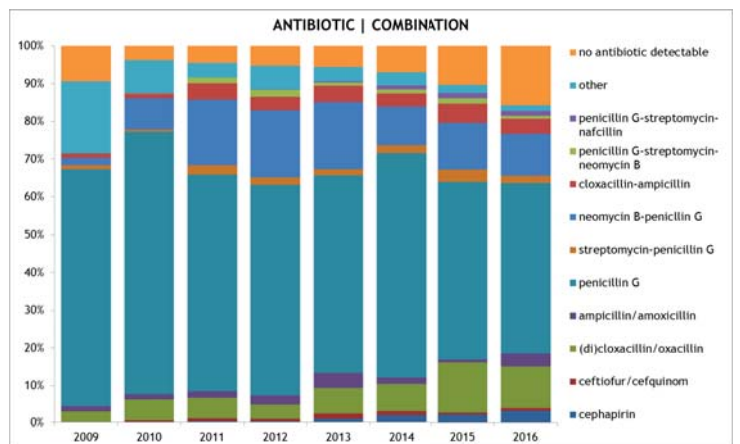
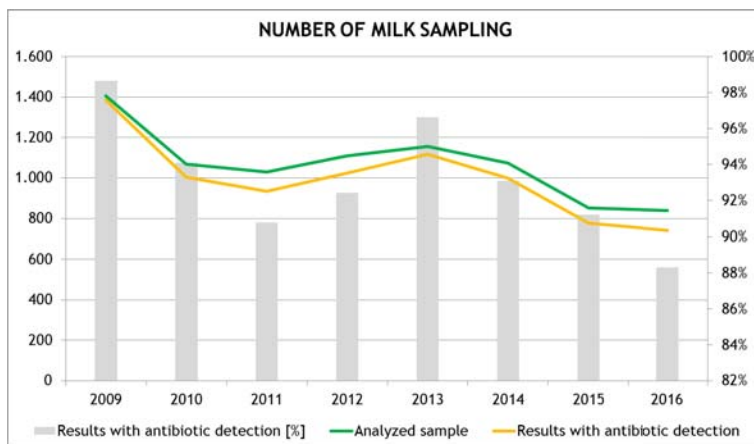
Functionality of Biosensor MCR-A.



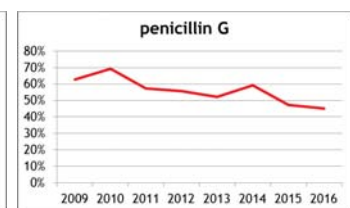
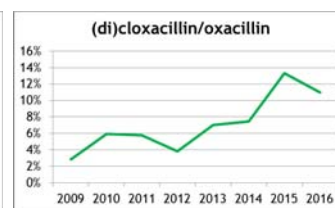
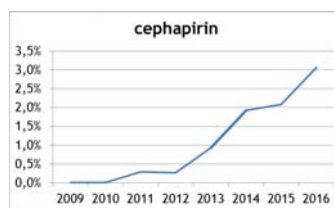
Since 2009 confirmation of the positive tests is done with MCR-A, a stand-alone platform for the parallel analysis of antibiotics in milk within six minutes by applying an indirect competitive chemiluminescence microarray immunoassay.

This MCR-A is able to detect 13 of the most commonly used antibiotics in dairy production, directly from raw milk without sample preparation.

Results and Validation



Some antibiotic substances are found more frequently today (cloxacillin, cephalosporines), whereas others are depleting (penicillin G).



Conclusion

Data prove that dairy farmers are acting responsibly in avoiding antibiotic residues in ex-farm milk and also provide information about the use of potentially critical antibiotics in dairy farming which objectifies discussions about the use of antibiotics or antimicrobial resistance.