

# Monitoring antimicrobial consumption in Swiss dairy farms



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## BACKGROUND

Monitoring antimicrobial consumption is crucial for the interpretation of data on antimicrobial resistance in bacteria from farm animals. WHO and OIE recommend to record data at the farm, veterinary practice and pharmacological industry levels.

## OBJECTIVES

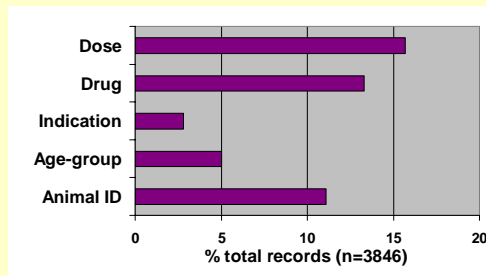
- 1) to evaluate data quality of farm records on antimicrobial use in dairy farms
- 2) to compare different recording systems
- 3) to develop a methodology for analysis of antimicrobial consumption according to international recommendations

## METHODS

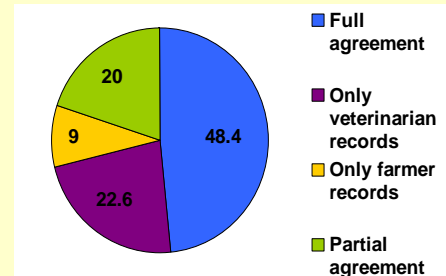
- > 97 dairy farms followed over 1 year, voluntary participation
- > Recording system chosen by the farmer:
  - handwritten journal (n = 36)
  - bovinet® (internet application; n = 27)
  - Excel®-sheet (n = 29)
  - other (n = 5)
- > Treatment data collected: drug name, quantity, indication, animal identification number (ID), age-group
- > Evaluation of data quality:
  - internal -> completeness and plausibility of records
  - external -> comparison farm vs. veterinary records (15 farms)
- > Data analysis:
  - classification of drugs -> ATCvet code
  - treatment incidence -> number of used course doses (UCD) per 100 animals and year

## RESULTS

Internal data quality: incomplete or wrong records



External data quality:  
% agreement farm vs. veterinary records (n=676)



Comparison  
of recording systems



- 1) proportion of animal ID mistakes significantly lower in electronic journals -> convenience of a menu-driven animal census
- 2) bovinet®: higher degree of agreement with veterinarian records -> user-friendly systems seem to prevent recording mistakes

Antimicrobial use in the project farms				Treatment incidence (nb. course doses per 100 animals per year)		
ATCvet code	Use	% of total amount	Main active substances	Cows	Heifers	Calves
QA07A	Intestinal	4.9	sulfonamides (96%)	0.6	1.7	7.9
QG51	Intrauterine	5.3	tetracyclines (81%)	16.0	0.5	-
QJ01	Systemic	54.7	sulfonamides (38%), penicillins (30%), aminoglycosides (15%), tetracyclines (10%)	31.1	12.4	86.6
QJ51	Intramammary	35.1	penicillins (84%), aminoglycosides (13%)	82.2	-	-
Total		100	79.8% cows, 2.1% heifers, 18.1% calves	129.9	14.6	94.5

## CONCLUSIONS

- 1) Good overall data quality, but not all treatments recorded by the farmers
- 2) Electronic systems facilitate accurate data recording and centralised data collection
- 3) ATCvet classification and treatment incidence provide a good description of antimicrobial consumption and allow international comparison