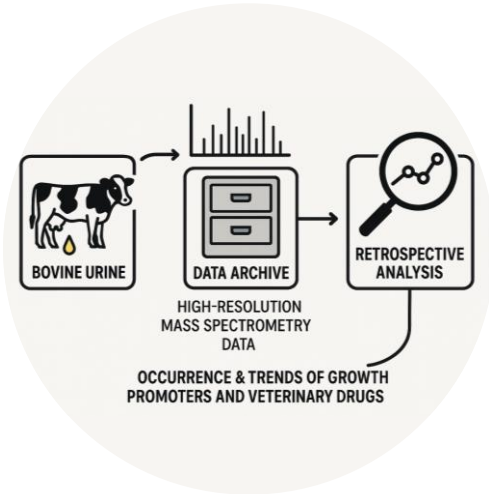


Retrospective LC-HRMS analysis

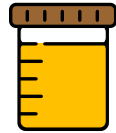
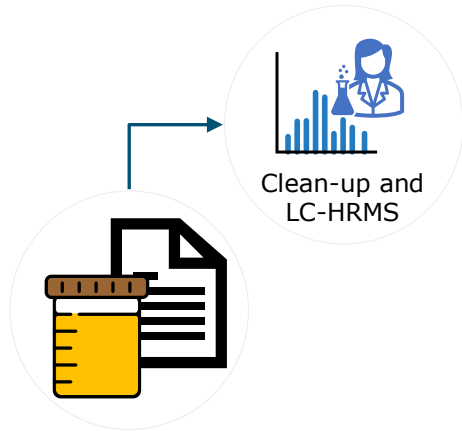
Trends of growth promoters & veterinary drugs in bovine urine



Ulrik PEDERSEN – NurPhoto/Getty Images

Ben STANSALL - WPA Pool/Getty Images

Methodology of Retrospective Analysis

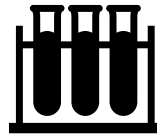


Sample – 500 μL



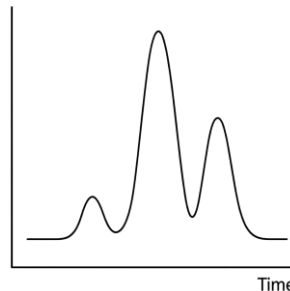
Phosphate buffer – 500 μL

- pH 6.8, 50 mmol L^{-1}



SPE – Oasis HLB 96-Well Plate

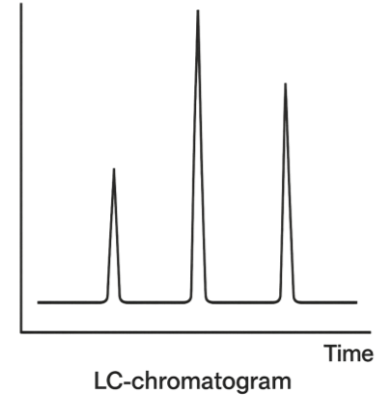
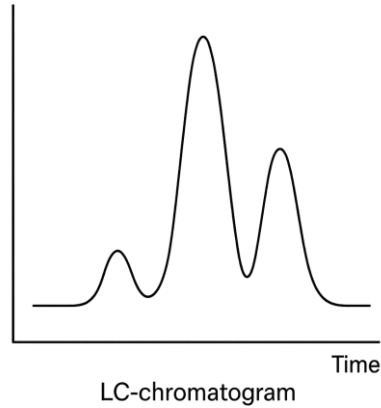
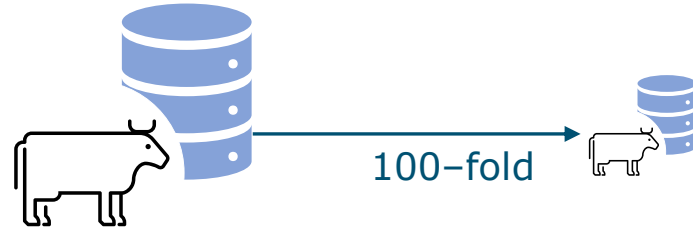
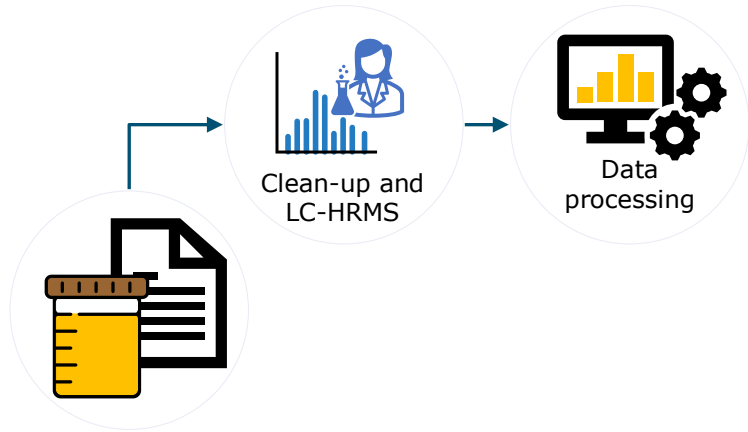
- Wash: 200 μL water
- Elute: 1 mL water-ACN (10:90, V/V)



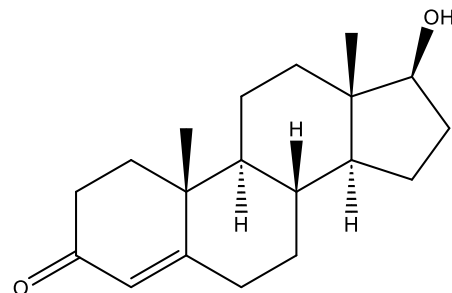
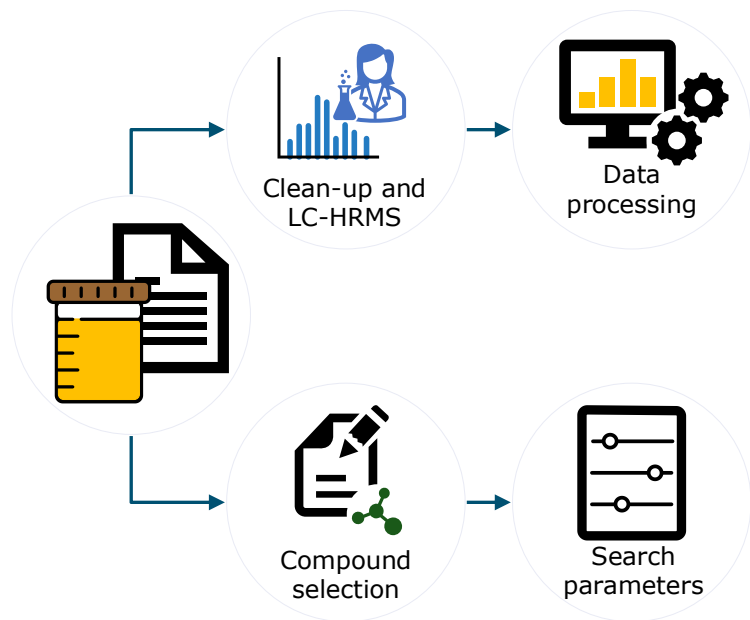
Analysis with LC-Q-Exactive

- Acquity UPLC BEH C18
- Resolution of 140,000 FWHM
- **Full scan only!**

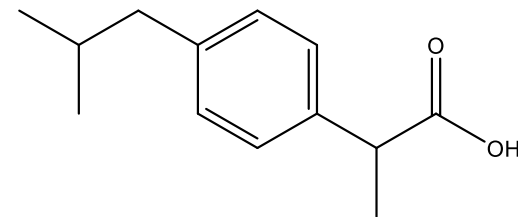
Methodology of Retrospective Analysis



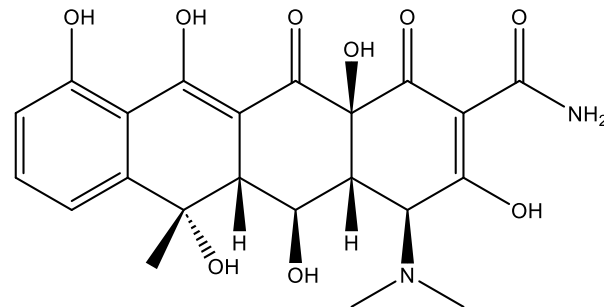
Methodology of Retrospective Analysis



Chemical Formula: $C_{19}H_{28}O_2$
Exact Mass: 288.2089
testosterone

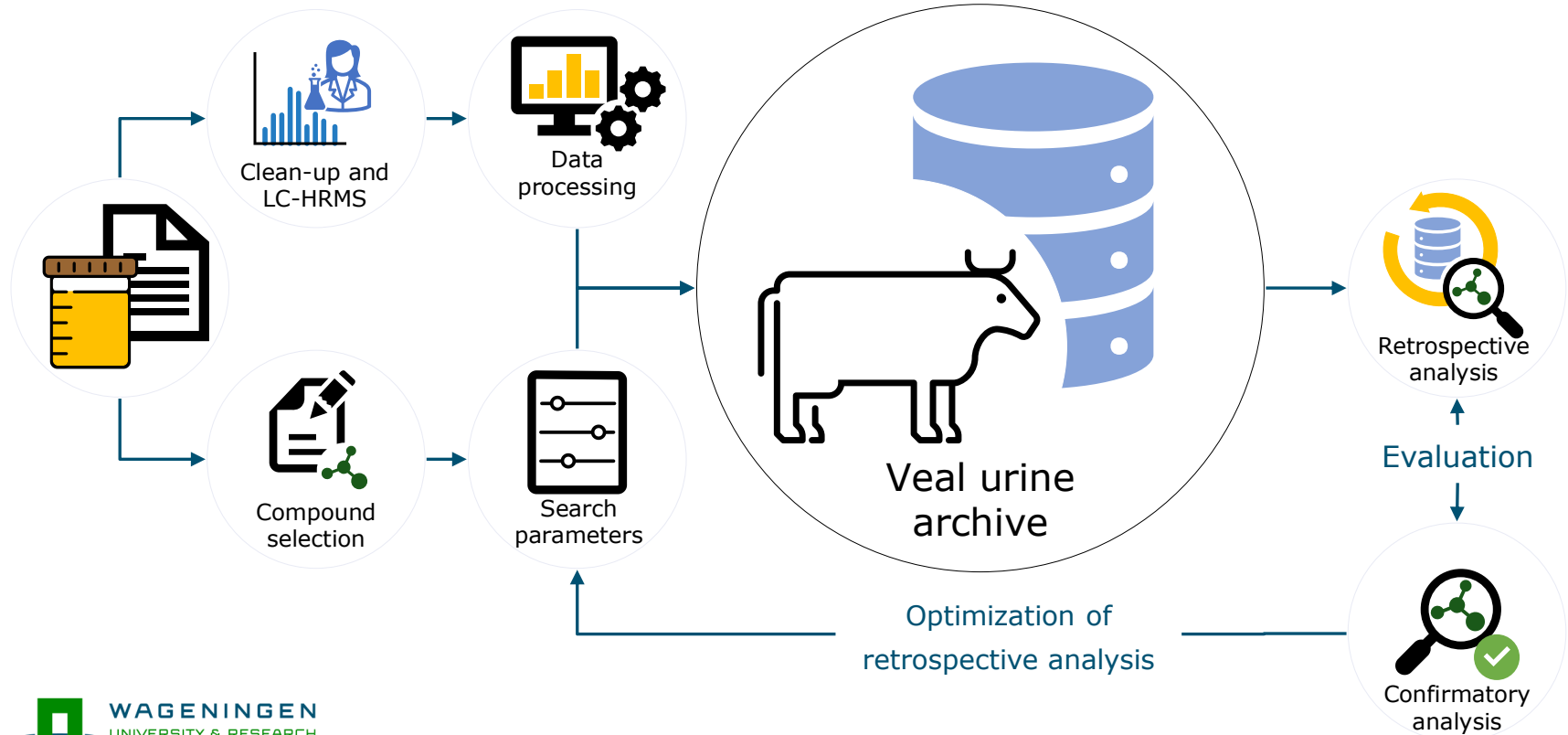


Chemical Formula: $C_{13}H_{18}O_2$
Exact Mass: 206.1307
Ibuprofen

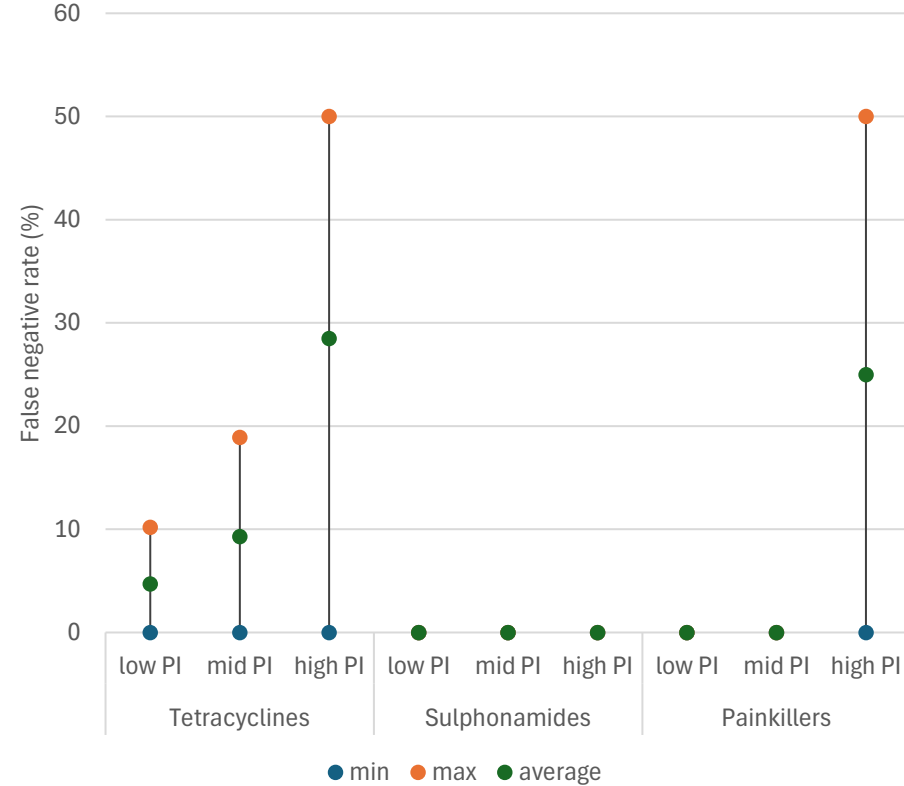
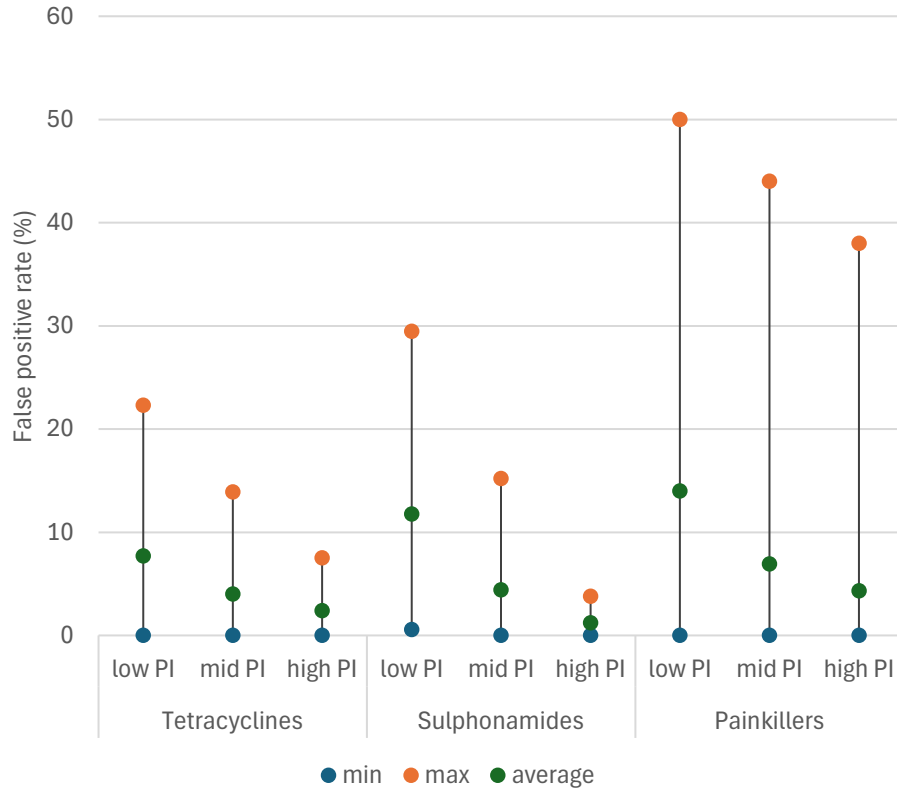


Chemical Formula: $C_{22}H_{24}N_2O_9$
Exact Mass: 460.1482
Oxytetracycline

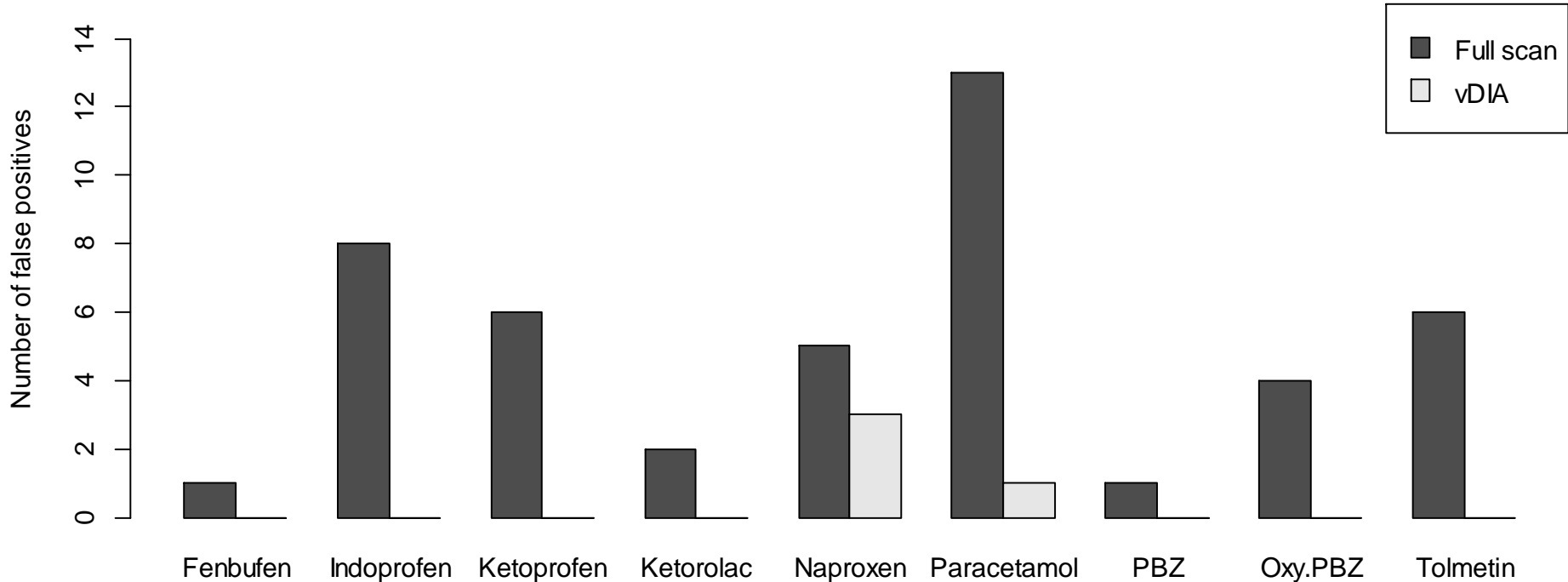
Methodology of Retrospective Analysis



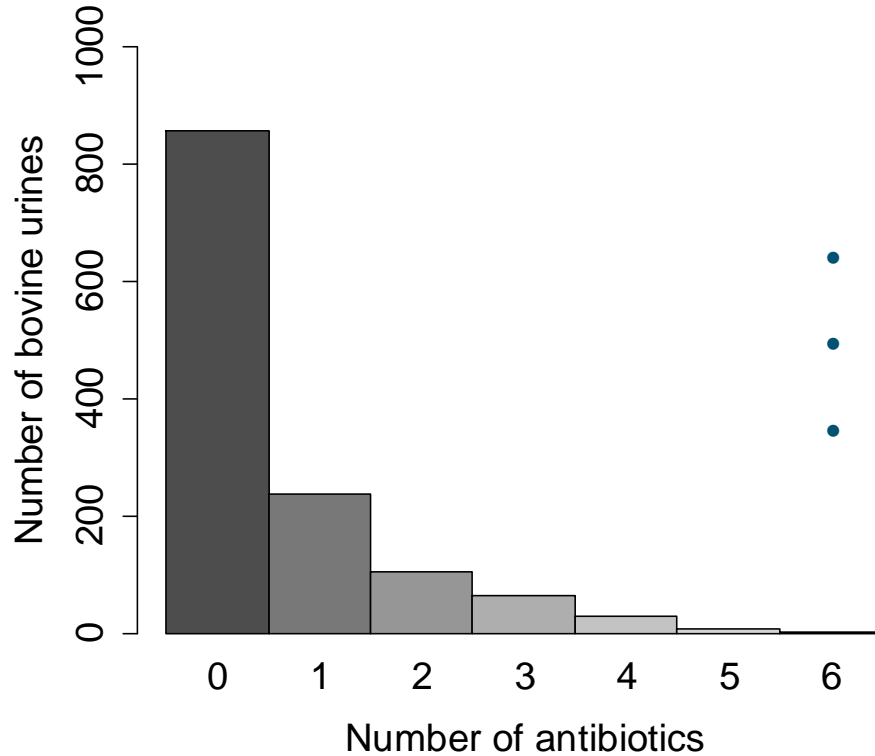
Evaluating the Retrospective Analysis



Evaluating the Retrospective Analysis

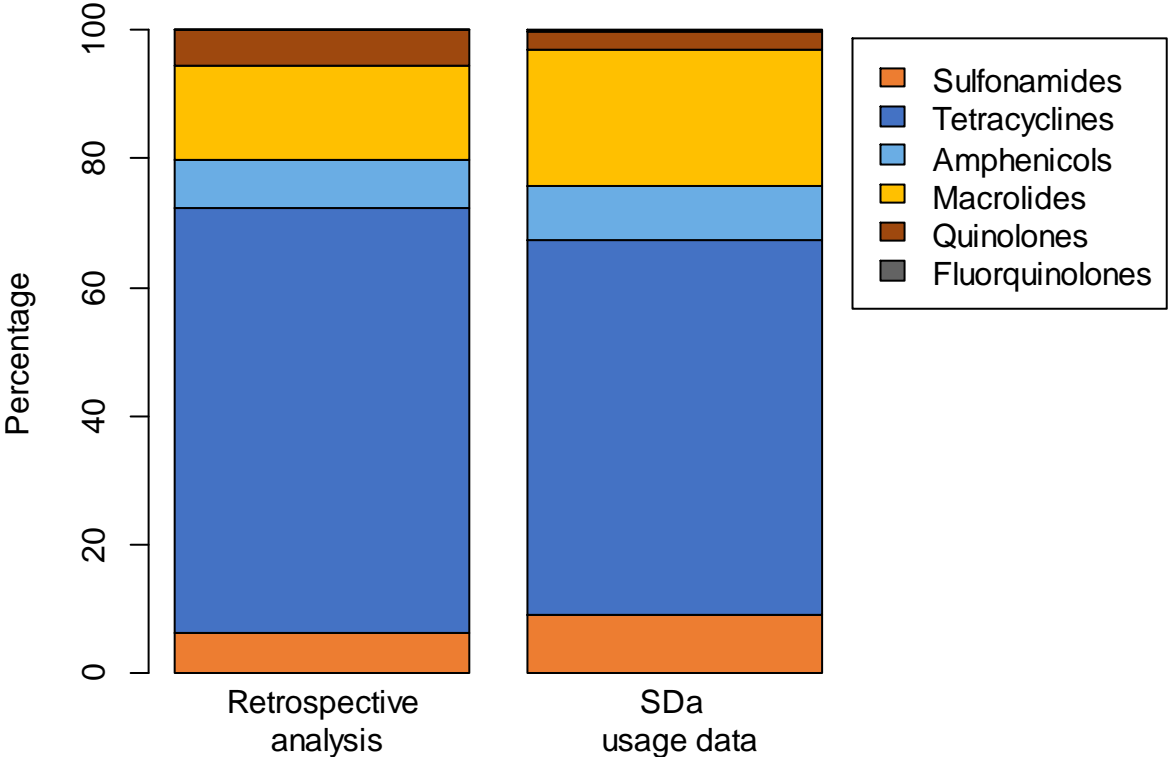


Occurrence of veterinary drugs



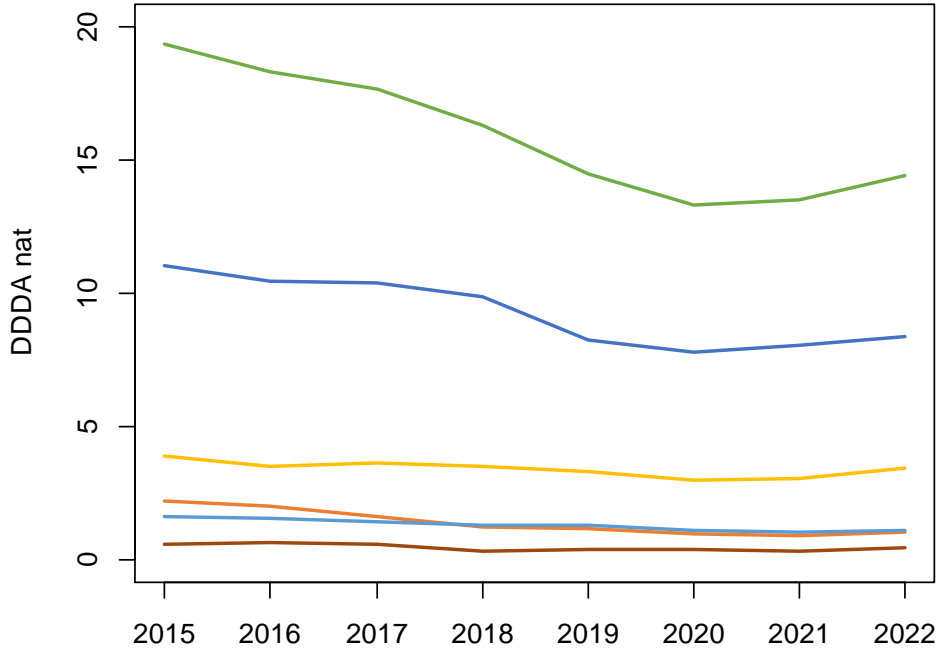
- Administration of multiple antibiotics
- Impure compound preparations
- Cross-contamination

Occurrence of veterinary drugs

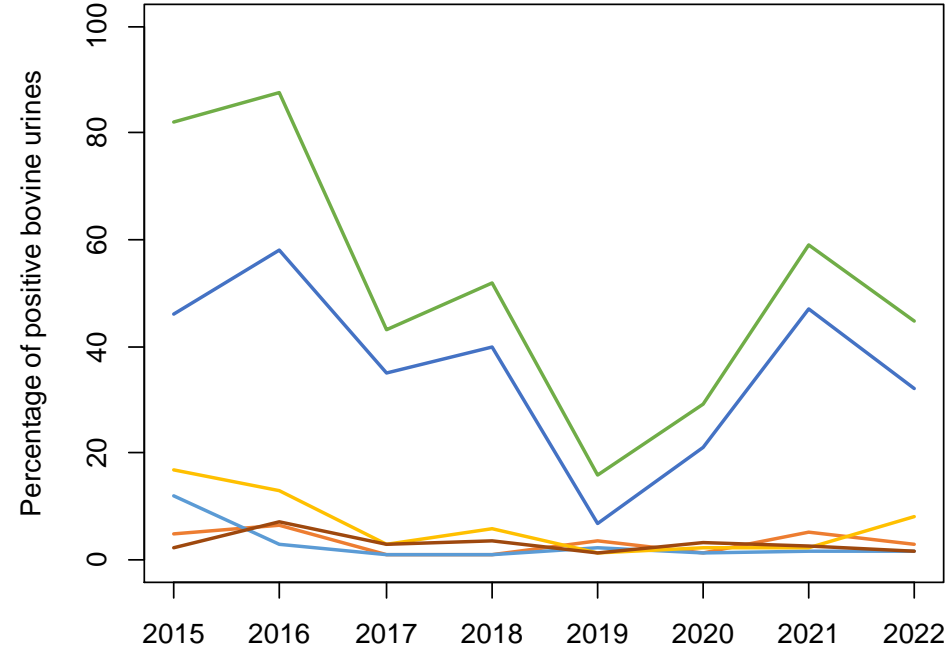


Insights in trends

Antibiotica usage data



Retrospective analysis



Conclusion

- The retrospective approach is suitable for studying the occurrence of veterinary drugs and growth promoters in bovine urine
- The results of our retrospective analyses were comparable with the antibiotic usage data of the veal sector
- A representative dataset is a requirement for Retrospective Analysis
- Huge opportunity if we apply Retrospective Analysis on all food samples analysed

Thank you!

- Milou van de Schans
- Frederike van Tricht
- Esmer Jongedijk
- Ron Berentsen
- Marco Blokland



Scientific posters

