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Finding unseen risks: setting up the Dutch randomized surveillance plan

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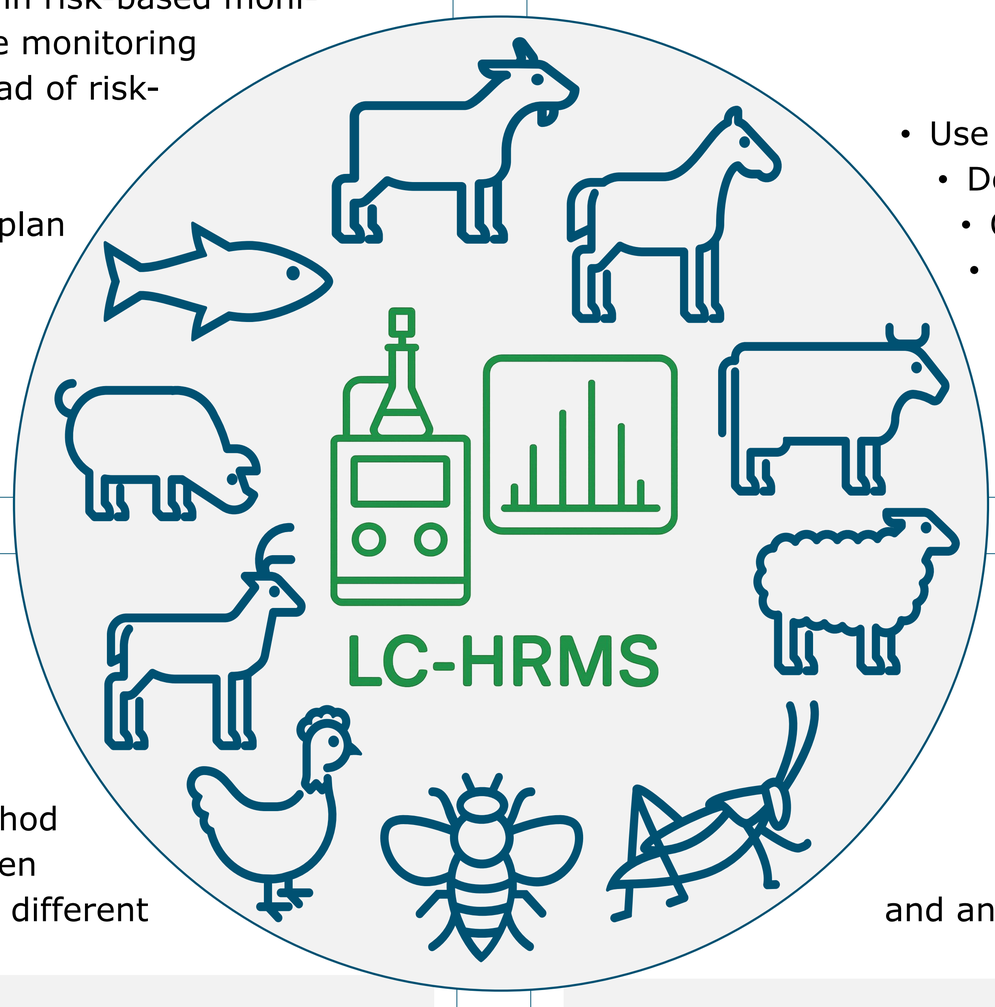
Urgency

In 2022, the EU introduced new legislation to monitor pharmacologically active substances in food-producing species (Commission Delegated Regulation (EU) 2022/1644 and 2022/1646). The randomised surveillance plan was introduced in this legislation to prevent bias due to risk-based monitoring.

Objective

This surveillance plan aims to:
(I) Find food safety risks that are unseen in risk-based monitoring and to fine-tune the latter for future monitoring
(II) Analyse in randomized samples instead of risk-based samples to prohibit bias

As the legislation on how to structure the plan is open to interpretation, the Netherlands chose to use targeted and untargeted detection methods to cover a broad range of pharmacologically active substances.



Results

Several non-compliances were detected in the randomized plan. So far, there is no indication that the current risk-based plan is missing important risks.

Challenges

- Fitting the data into standard reporting formats
- Eliminating false positives
- Large datasets

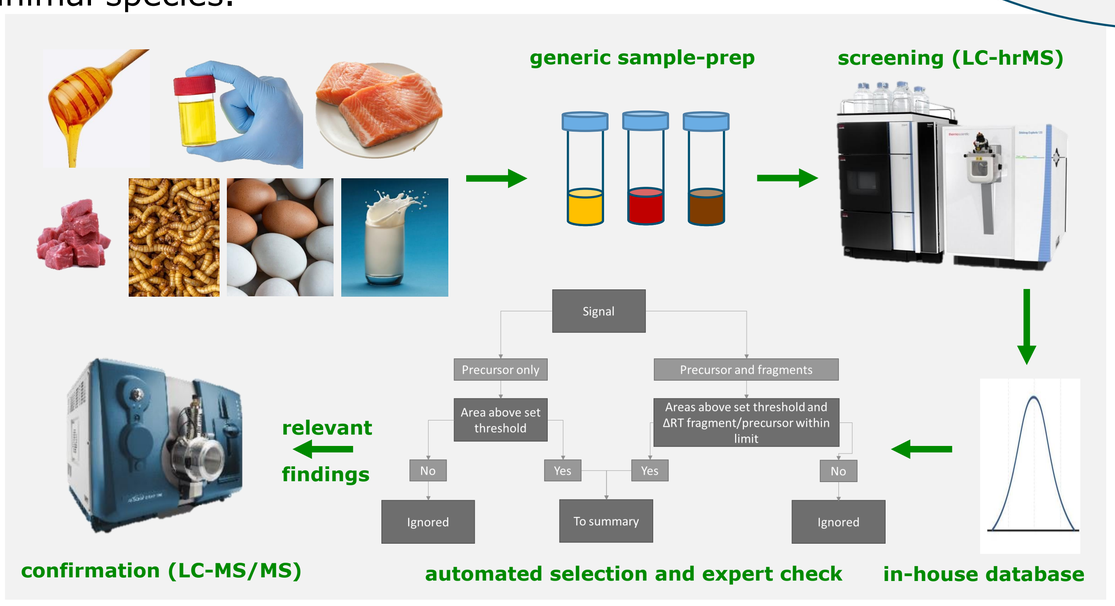
Next steps

- Use spectral librabry to reduce false positives
- Dedicated confirmation method in LC-hrMS
- Quantem software for semi-quantification
- Applying hrMS methods in the risk-based plan

A-samples (objective I)

~75 samples
One untargeted analysis

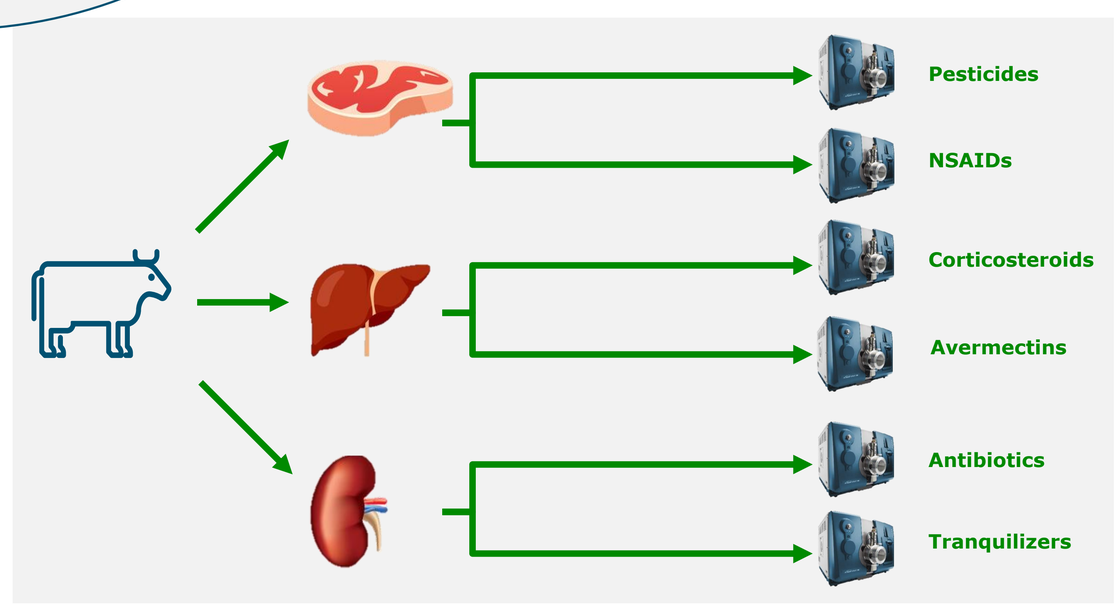
WFSR developed a suspect-screening method for 7 different matrices to search for unseen pharmacologically active substances in 10 different animal species.



(objective II) B-samples

~225 samples
Several targeted analyses

To determine more substance groups in one animal, several matrices were taken and analysed for the relevant substance groups.



Conclusions

- We successfully developed a suspect-screening method aiming to find unseen risks in a large number of animal species and matrices
- This novelty approach will make food-safety monitoring more effective and efficient in the future.

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