

A SURVEY OF CITRININ AND OCHRATOXIN A IN FOOD AND FEED IN BELGIUM

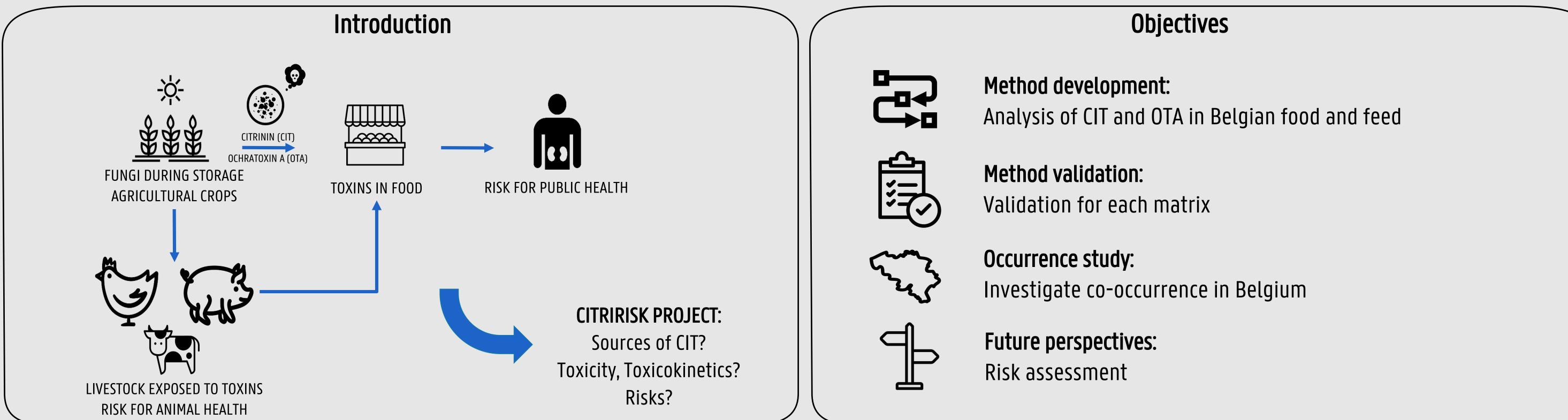
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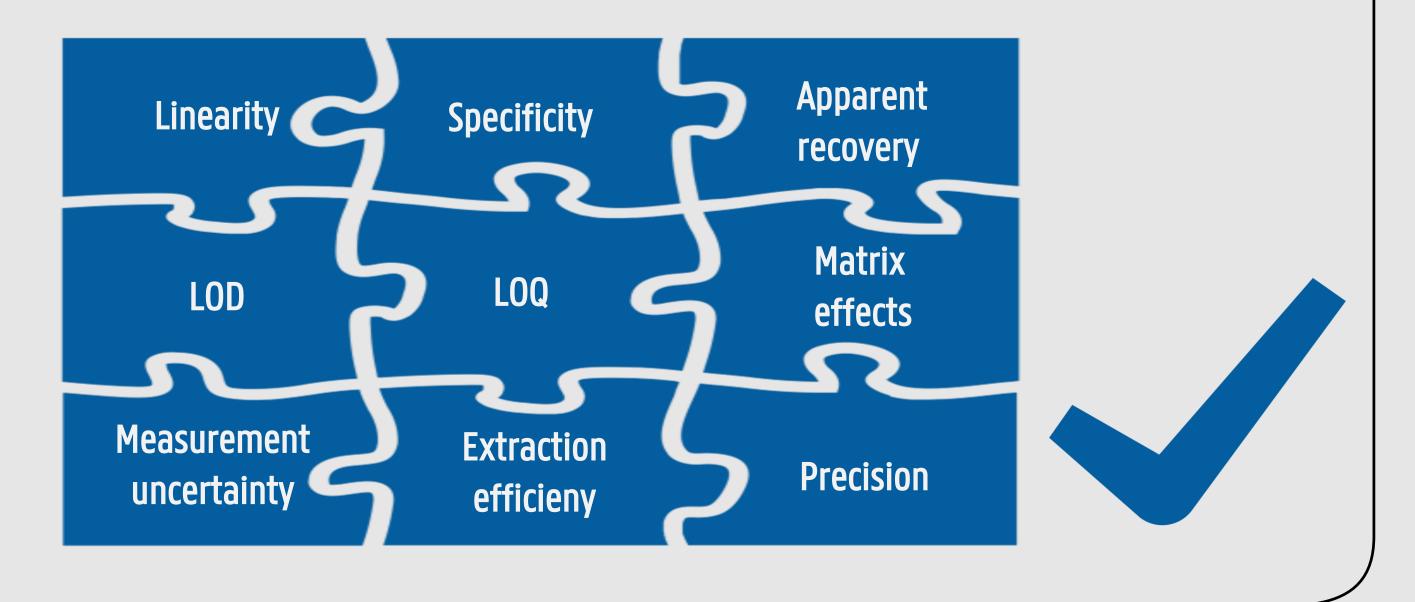


Results

Validation following

Commission Regulation No. 401/2006/EC

Commission Decision No. 2002/657/EC





FOOD

N = 146 February – April 2018 Variety of foodgroups (Figure 1 and Table 1)



<u>Matrices</u>

FEED

N = 90

and pig

March – June 2017

Chicken (broiler)



4 g of sample 10 mL acidified H_2O 20 mL organic extraction solvent (ACN) 1 h extraction

QuEChERS salts

Salting out

Evaporation of 1 mL of upper layer Reconstituted sample

LC-MS/MS analysis

Fig. 1: Presentation of selected food groups for CIT and OTA analysis

*Small modifications per matrix

Results



Food

Cereals, herbs and spices are the major source of CIT.

One food supplement containing red yeast rice (RYR) was highly contaminated with CIT in a concentration above the legal limit of 2 mg/kg.

Feed

A high percentage (> 50%) of feed samples were contaminated.

Co-occurrence

CIT and OTA co-occur in Belgium, especially in cereals and feed.

Table 1: Results of CIT/OTA analysis in a variety of Belgian food and feed samples

Matrix	Total (n)	CIT		OTA	
		Positives (n)	Range (µg/kg)	Positives (n)	Range (µg/kg)
Cereals	31	13	<l0q-1.00< td=""><td>18</td><td><l0q-0.37< td=""></l0q-0.37<></td></l0q-1.00<>	18	<l0q-0.37< td=""></l0q-0.37<>
Fruit- and vegetable juices, raisins	20	3	<l0q-0.16< td=""><td>8</td><td><l0q-11.30< td=""></l0q-11.30<></td></l0q-0.16<>	8	<l0q-11.30< td=""></l0q-11.30<>
Alcoholic drinks	8	0	<loq< td=""><td>3</td><td><loq< td=""></loq<></td></loq<>	3	<loq< td=""></loq<>
Nuts and seeds	22	3	<l0q-0.21< td=""><td>6</td><td><l0q-0.81< td=""></l0q-0.81<></td></l0q-0.21<>	6	<l0q-0.81< td=""></l0q-0.81<>
Soy and vegetarian products	8	2	<l0q-1.55< td=""><td>2</td><td><l0q-0.23< td=""></l0q-0.23<></td></l0q-1.55<>	2	<l0q-0.23< td=""></l0q-0.23<>
Baby food	10	2	<l0q-0.21< td=""><td>2</td><td><loq< td=""></loq<></td></l0q-0.21<>	2	<loq< td=""></loq<>
Meat	6	2	<l0q-0.23< td=""><td>3</td><td><loq< td=""></loq<></td></l0q-0.23<>	3	<loq< td=""></loq<>
Food supplements	12	2	<l0q-2,073.62< td=""><td>0</td><td><loq< td=""></loq<></td></l0q-2,073.62<>	0	<loq< td=""></loq<>
Olives	2	0	<loq< td=""><td>0</td><td><loq< td=""></loq<></td></loq<>	0	<loq< td=""></loq<>
Cheese	3	1	<loq< td=""><td>0</td><td><loq< td=""></loq<></td></loq<>	0	<loq< td=""></loq<>
Herbs and spices	24	15	<l0q-4.49< td=""><td>4</td><td><l0q-2.73< td=""></l0q-2.73<></td></l0q-4.49<>	4	<l0q-2.73< td=""></l0q-2.73<>
Feed	90	44	< LOQ-3.90	71	<l0q-5.60< td=""></l0q-5.60<>



Conclusions

CIT and OTA are frequently detected in food and feed from the Belgian market.

Uncertainties



Livestock is exposed: carry-over to edible tissue?



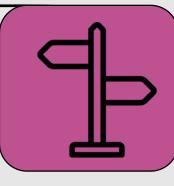
CIT contamination not regulated*: maximum allowed concentration? *Except for RYR: 2 mg/kg



Link with nephrotoxicity: public health hazard?

Use of results

- Selection of a higher number of samples of the main contaminated food groups.
- Investigate risk of contaminated feed for animal health.
- Performance of a risk assessment by using occurrence and toxicokinetic data: exposure assessment and risk characterization for both Belgian population and pig and poultry sector.



Acknowledgements

This research was funded by the Belgian Federal Public Service of Health, Food Chain Safety and Environment through the contract RT 16/6308 CITRIRISK.

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