

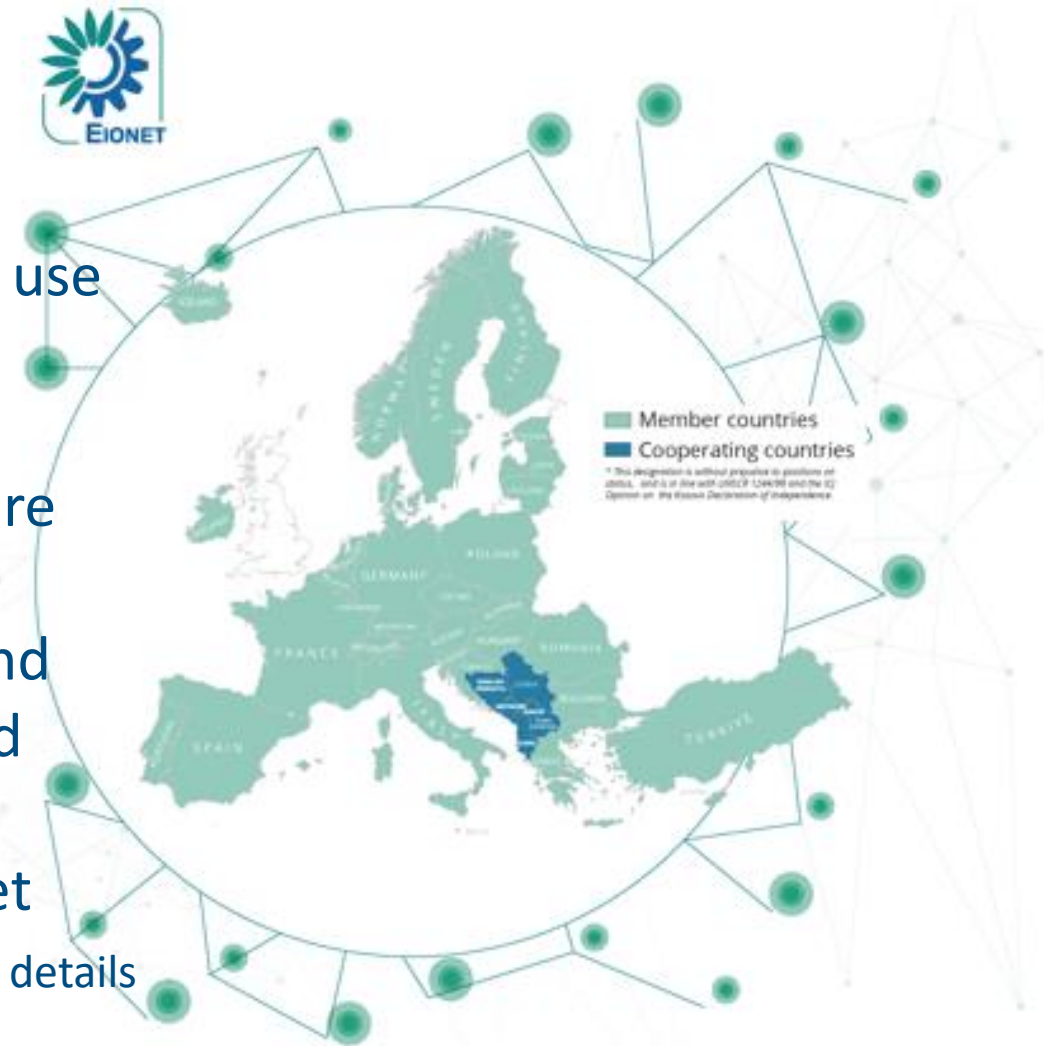
# Update on activities and potential WISE-6 developments SETAC CREED, Antimicrobial resistance, Azoles

Caroline Whalley / WISE-6 reporter webinar / 4<sup>th</sup> October 2023



# SETAC CREED initiative to improve data transparency and consistency used in environmental risk assessment

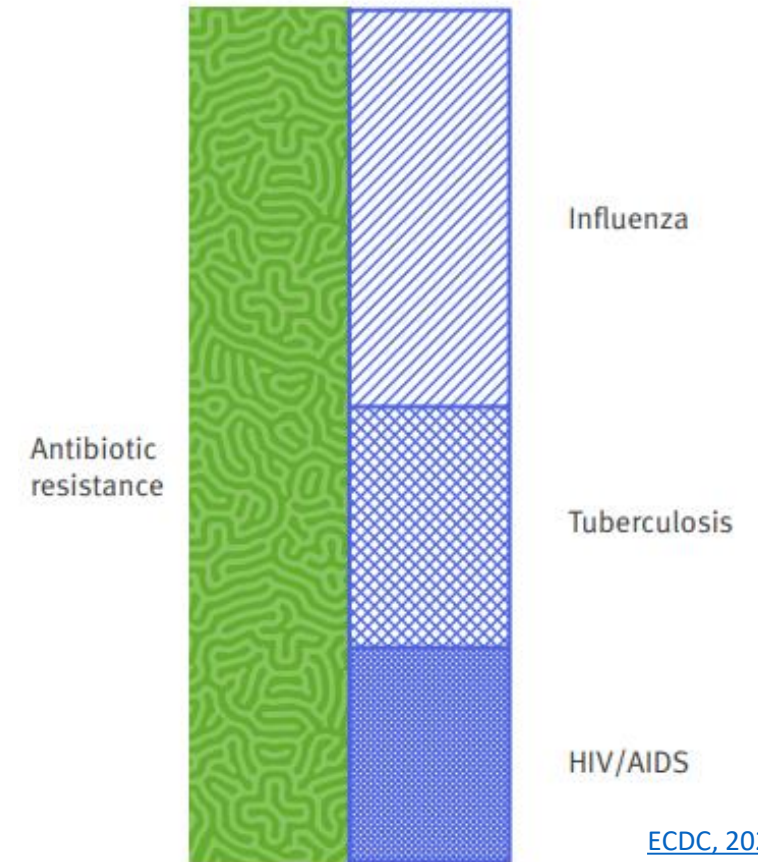
- Waterbase Water Quality is a unique dataset covering Eionet countries
- SETAC Technical Workshop, methodology to evaluate reliability and relevance of measured chemical data for use in estimating exposure in environmental assessments  
→
- Proposed “Criteria for Reporting and Evaluating Exposure Datasets” – CREED
- Process identifies key gaps in reliability (data quality) and relevance (fitness for purpose) of data being considered
- Comparison of requirements vs WISE-6 shows limited number extra fields would be required for users to meet CREED criteria eg limit of detection (LoD), Lab accreditation/method details
- Considering how to take this forward from 2024 –  
No changes to structure for 2023 datacall



# Antimicrobial resistance - AMR

- Antibiotic resistance is the ability of bacteria to combat the action of one or antibiotics. Humans and animals do not become resistant to antibiotics, but bacteria carried by humans and animals can.
- WHO has declared that AMR is one of the top 10 global public health threats facing humanity.
- Misuse and overuse of antimicrobials are the main drivers in the development of drug-resistant pathogens.
- Lack of clean water and sanitation and inadequate infection prevention and control promotes the spread of microbes, some of which can be resistant to antimicrobial treatment.

Burden of infections with bacteria resistant to antibiotics on the European population



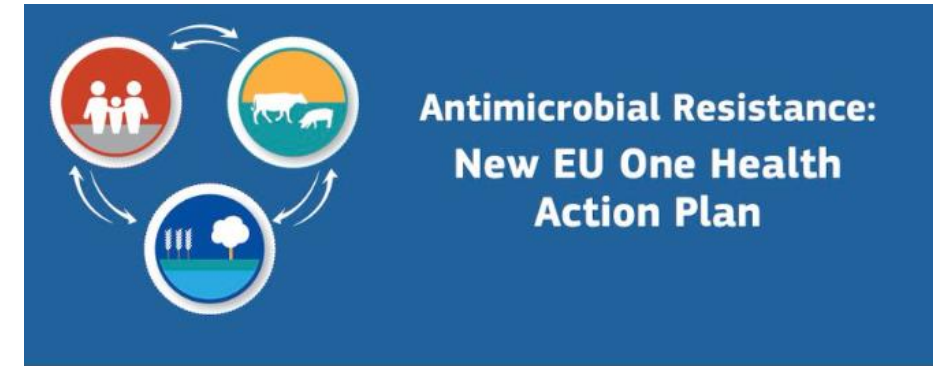
[ECDC, 2023](#)

# One Health, AMR and the environment

2023 Council Recommendation “further action is needed, in particular in the areas of human health and the environment”

“While the environmental dimension of AMR has been comparatively less in focus than AMR in human or animal health, growing evidence shows that the natural environment may be a major reservoir and driver of AMR.

In line with the One Health approach, environmental monitoring of AMR in groundwaters and surface waters, including coastal waters, wastewater and agricultural soils is essential to further understand the role played by the presence in the environment of antimicrobial residues in the emergence and spread of AMR, the levels of environmental contamination and the risks posed to human health.”



#EUAMRaction

The aims of the Working Group are:

- To conduct a pilot survey of AMR in surface waters during 2024, enabling the first harmonised data collection and reporting of the selected resistance indicators at European scale
- To build capacity and experience for more quantitative monitoring in future.



# Eionet Working Group on AMR in surface waters

Country members	Institutions
Austria	EEA
Belgium	EFSA
Czechia	JRC
Estonia	
France	
Germany	
Ireland	
Latvia	
Luxembourg	
North Macedonia	
Netherlands	
Spain	
Switzerland	
Türkiye	

# “Azoles mandate”

- DG SANTE request for Scientific Report on the impact of the use of azole fungicides, other than as human medicines, on the development of azole-resistant *Aspergillus* spp.
- ECHA, EFSA, ECDC, EMA, JRC and EEA collaborating to take a One Health approach, combining information and expertise from different perspectives
- Draft report expected January 2024.



Microscopic image of  
*Aspergillus fumigatus*

[CDC, 2023](#)



# Concentrations of azoles in surface and ground waters in Europe

- **Concentrations in water give feedback on the overall effectiveness of source control**
- In 2022, we requested countries deliver data on azoles through WISE-6
- NL and SE also delivered azoles data outside of WISE-6 dataflow

Thank you!

Penconazole in surface waters, 2021



Source: [EEA](#) 2023



substance	No. countries	No. records	No. records > LoQ
Amisulbrom	3	788	0
Bitertanol	6	18336	435
Bromuconazole	1	4173	8
Clotrimazole *	21	7985	122
Cyazofamid	2	35	0
Cyproconazole	5	11020	138
Difenoconazole	3	4249	1
Epoxiconazole	12	131476	7573
Fenamidone	2	4070	0
Fenbuconazole	1	4207	0
Fluconazole *	22	2463	599
Fluquinconazole	3	54983	17
Flutriafol	2	5294	42
Imazalil *	23	23730	619
Ipconazole *	22	6128	296
Iprodione	6	27027	2440
Mefentrifluconazole	1	745	0
Metconazole *	22	23259	427
Miconazole *	20	1675	109
Myclobutanil	2	26520	2578
Penconazole *	22	37915	5669
Prochloraz *	22	42665	3819
Propiconazole	16	177084	19242
Prothioconazole	2	4376	0
Tebuconazole *	24	59494	7671
Tetraconazole *	22	16885	478
Triadimefon	5	14436	680
Triazoxide	1	2414	0
Triticonazole	3	4118	2

## Number of records for azoles reported in Waterbase water quality

Surface water plus groundwater  
“total water” matrix (W + W-DIS)

No. countries is the number of countries reporting that substance

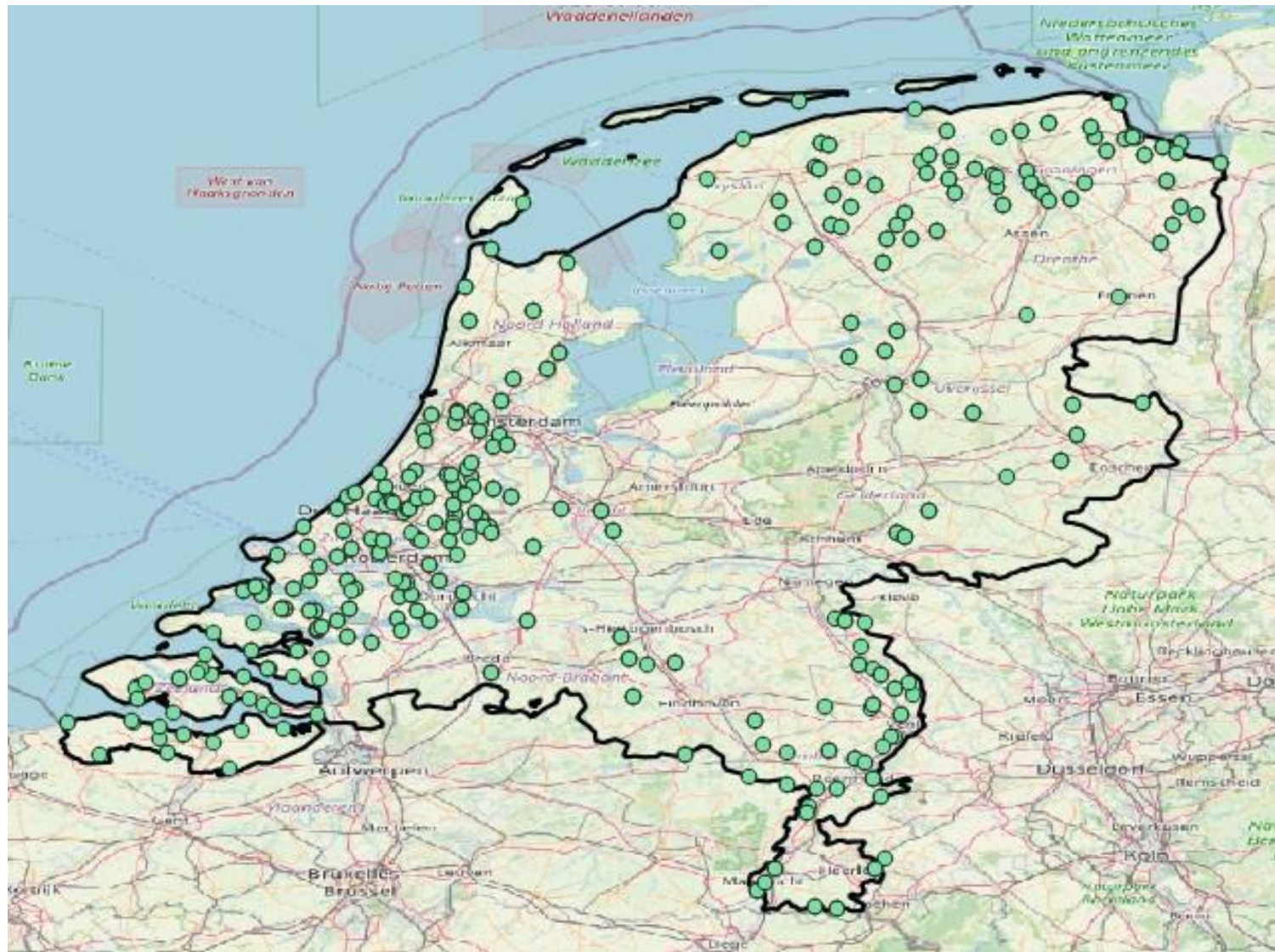
LoQ = limit of quantification

>LoQ = quantifiable concentration measurement

\* = in surface water watch list



# Netherlands sampling sites



28 azoles  
c. 400 000 records  
Some data go back to 1990s

# Propiconazole

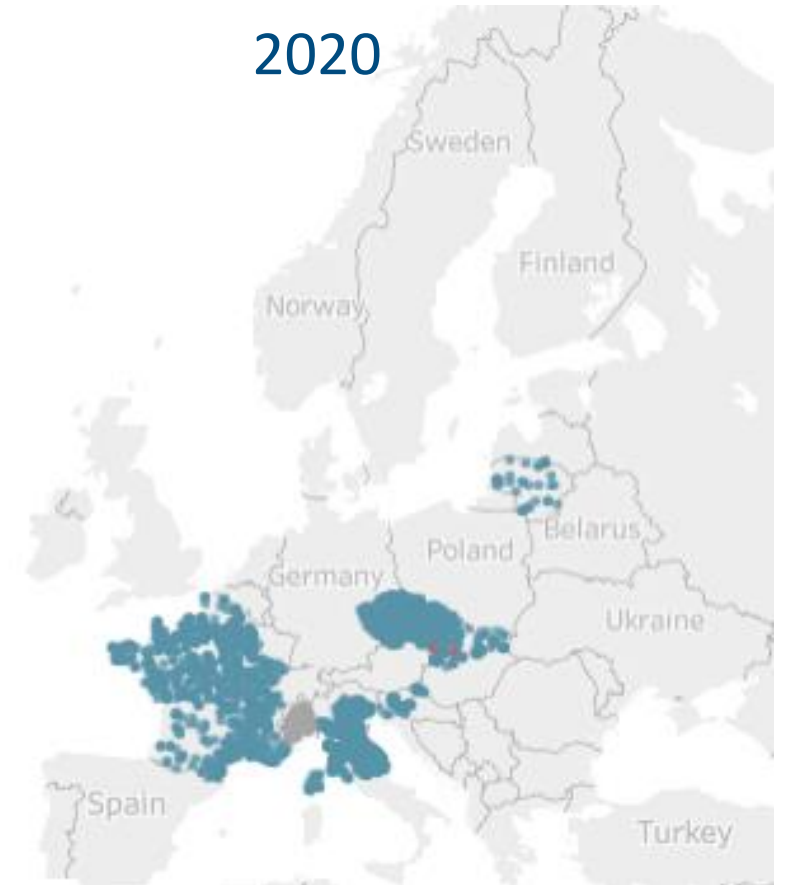
Surface water, 2021



Groundwater, 2021;



2020



# Tebuconazole

Surface water, 2021



Groundwater, 2021;



2019





Many thanks to WISE-6 reporters and data team

Eionet WISE-6 reporters

ETC – Gaspar, Jeanette, Anke, Philipp, Pawel, Carsten, Kari

JRC – Dimitar, Teresa

EEA – Jørgen, Nery, Marek, Jeanne, Ana