EU Food Safety Platform

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My idea is to extend predictive models into early-warning tools by adding forecasting capacity. The approach is to adapt the AFLA-maize model to work with freely available global meteorological datasets, improving both spatial and temporal resolution. We combined ERA5-Land reanalysis with seasonal forecasts in hybrid strategy for in-season risk assessment.

By relying on freely available meteorological data and integrating forecasting with uncertainty quantification, this work provides risk assessments that can guide management strategies and reduce exposure,

The impact I would like to have on food safety is to develop user-friendly systems that allow timely interventions before mycotoxin contamination reaches the food and feed chain.

In the long term, this approach can be applied in regions with limited monitoring capacity and extended to other toxins and crops. My ambition is to contribute to more resilient food systems and support food safety under changing climate conditions.

The results show that these datasets reliably reproduce station-based simulations and provide risk predictions 3–8 weeks before harvest. Earlier forecasts offer longer decision windows but lower accuracy, while later forecasts increase accuracy at the cost of lead time. Additionally, forecasts capture uncertainty and enable probabilistic risk assessments for decision-making.

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