** Draft Proposal **

Food-Microbiology Intelligence Network (F-MIN)

Name - Food-Microbiology Intelligence Network (F-MIN)

F-MIN Objective - To create a trusted network of food businesses that share and co-analyse data on microbial risks to reveal sector-wide insights that enable collective actions to safeguard consumers.

Outcomes from business-to-business integration of datasets

The joint analysis of microbiology testing datasets directly between food business operators would enable the visualisation of food safety trends and the discovery of new insights to manage risk, providing:

- Increased product confidence (i.e., providing knowledge where food safety risks were not detected);
- Earlier awareness of emerging risk (i.e., warning of where a new or heightened risk has entered a system);
- Advanced capability to identify recurrent risks (i.e., evidence of a previously unknown risk using newly compiled datasets from multiple members across time points), and;
- Collective awareness of perceived or future risks (i.e., sharing the rationale and results of where enhanced testing is/should occur due to changes in supply chains, processes, or horizon scanning)

In each of these risk assessment scenarios, members of F-MIN can use the resulting information to increase resilience in their supply chains by supporting their business and suppliers to focus activity and resourcing on the areas of highest risk or changing risk. These activities could include a refined approach to testing of a particular food product or process, or alternatively, the de-escalation of testing if historical risks are no longer observed in a setting / food category.

Constitution - Governance Board, Technical Committee and Members Forum.

- *Governance Board:* Constituted from members of F-MIN. Develops the terms of reference including membership of F-MIN, the Board, Technical Committee and Members Forum. Manages service providers and strategic alliances with stakeholders.

- *Technical Committee:* Constituted from members of F-MIN. Oversees information collection, analyses, and scheduled publication of insight reports; mobilises efforts to address identified risks.

- *Members Forum:* Open to all Members of F-MIN to receive updates on insight and identified risks.

Membership - F-MIN is open to food industry companies only, is subscription based and membership is conditional on submission of insights to the F-MIN insight portal per an agreed data reporting framework and frequency.

Preparatory activities and resourcing - An initial Steering Committee will develop the F-MIN draft proposal and an associated engagement strategy to further develop the proposal with key stakeholders (e.g., identify key benefits and barriers to participation) and grow the nascent membership in F-MIN. The Food Safety Research Network will support ~£25K to the end of March 2024 for activities of the initial Steering Committee and F-MIN will feature in the business case to UKRI for renewal and extension of the FSRN.

Core Data Inputs

Data synthesis and creation of insight between members can occur after sharing of anonymised microbiological testing data and associated supply chain metadata into a secure portal. It is anticipated that F-MIN will start at an overview level, and then with time becoming more granular, with data fields such as:

- [target microbe / indicator],
- [test methodology / accreditation],
- [test result / date],
- [ingredient / product],
- [origin / distribution]
- [single / multicomponent],
- [processing stage: raw / intermediate / finished],
- [related production process / equipment],
- [usage: RTE / to be cooked]
- [routine / follow-up testing]

Other strategic and operational considerations

- Secure discussion board / forum for knowledge transfer between members on sampling strategies, testing methodology, and data management tools (i.e., promoting members to collect and analyse data in new ways)
- The objective to trend data seeks to establish a baseline / benchmark and then divergencies (e.g., what does 'normal' look like; what causes shifts from that baseline?);
- Frequency of data submission (e.g., monthly vs quarterly) versus frequency of data analysis and reporting/summarisation of key trends and observations (e.g., produced when a signal is observed, or at a regular reporting interval)?
- Tiered access (e.g., regular members with access to the full aggregate dataset and all resulting trends and summaries; versus restricted access to a top-level synthesis to those making minimal contributions)?
- Communication of critical risks to other businesses to protect the consumer (e.g., dissemination offers opportunity to reach 'hidden markets' and the 'missing middle')?
- Incentivisation of SME's and primary producers to contribute, and/or develop capacity for enhanced sampling and data management and analyses?
- Food integrity and food safety are overlapping objectives ('If it's not safe, it's not food' – FAO) and having singular portals with related initiatives would favour efficiency for members;

Risk register

Data access	Exclusive to food industry members (e.g. producers, retailers) and not regulators
Liability	Nil transferred responsibilities and no negative consequence to sharing anonymised microbiology data between FBOs, as findings or incidences from individual FBOs that

	were reportable to regulators or authorities would occur independently outside of F-MIN
Workload	Ability and capacity of businesses to import data to the secure portal; develop a common terminology and provide flexible data input tools (e.g., drop down fields)
Comparability	Degree of standardisation in data fields and complexity of supply chains; requires a flexible data management portal and focal data collection in areas of higher risk
Funding	Prospectively, as a component of the forward funding and strategic renewal plans (2024+) of the Food Safety Research Network with UKRI (Biotechnology and Biological Sciences Research Council)

Case Study on Feasibility – In some healthcare environments, hospitals share anonymised microbiology data summarising the antibiotic susceptibility of microbes isolated during routine clinical microbiology testing. The goals of producing an aggregate dataset on the localised prevalence of antibiotic resistance (i.e., an antibiogram) are to inform treatment decisions and the need to escalate or de-escalate surveillance activities. This approach has parallels to the prospective goals of F-MIN:

Antibiograms	**F-MIN**
Anonymized clinical information, stratified by microbes, antibiotics, syndromes, wards/sites	Anonymized FBO information, stratified by microbes, food categories, production contexts
Confidence on treatment decisions	Confidence in safety of products
Identify emerging risks in the context in specific patient populations	Identify emerging risks in the context to food categories, ingredients, production processes
Opportunity to implement new diagnostic technologies and offboard old technologies (resource optimization)	Opportunity to trial new technologies and food safety interventions
IP&C education to many health disciplines	Food safety / HACCP education to key actors in FBOs
For hospitals, by hospitals (indep. of regulators)	For FBO's, by FBO's