

# Short item. Guide to the definition of epidemiological surveillance requirements in the food safety sector

## Brève. Guide d'aide à la définition des besoins en matière de surveillance épidémiologique dans le secteur de la sécurité sanitaire des aliments

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This short item supplements the framework article by Danan and Calavas (Reflections on food chain surveillance) published in this issue. It specifies the scope of surveillance in terms of risk assessment and management activities in the area of food safety and intends to help all stakeholders in the surveillance system precisely position themselves in the process.

### General objectives of food chain surveillance

Epidemiological surveillance refers to a set of activities that provide confirmed reliable information about the status of and changes in contamination in a stage of the food chain. This information is intended to help risk managers and assessors scale their actions.

The activities cover the ongoing collection of data, their analysis and interpretation, the coordination of surveillance schemes with various stakeholders (see below), and the transmission of information to the authorities in charge of implementing prevention and monitoring actions. Data collection can be organised at regular intervals using a methodology enabling its comparison. Data interpretation consists in assessing levels of contamination, which includes detecting emerging contamination, making assumptions about risk factors in contamination, and/or assessing the impact of implemented control or prevention measures.

Depending on expectations, surveillance schemes adhere to specific protocols (choice of matrix, type of sampling, sampling plan, sampling frequency, analytical method, information system, etc.).

To ensure the proper functioning of the entire process, the stakeholders involved in surveillance activities should be informed of the purpose of the missions of risk managers and assessors. The table opposite illustrates the synergies between these various activities.

Surveillance objectives	Risk management (M) or assessment (A) actions that may be taken on the basis of surveillance results
<p>Define the level of contaminant or pathogen X in matrix Y (the definition of the matrix is related to the stage of the food chain) and its change over time.</p> <p>This objective applies to known and detected contaminants and pathogens in standard production situations, most often at low levels of contamination.</p> <p>Note: this objective is in particular associated with a process for assessing the impact of one or more control measures and verifying their effectiveness</p>	<p>M: Adapt current control measures if necessary</p> <p>M: Put into place new control measures by identifying the most relevant stage of the food chain, including recommendations for consumers or preventive measures</p> <p>M: Define or revise a regulatory criterion (number of units of a sample (n), tolerance (c), limit of detection, stage and nature of sampling, method)</p> <p>M: Scale a sampling plan (procedures, sampling frequency) tailored to the surveillance objective</p>
<p>Detect the emergence of a rare or exotic contaminant or pathogen</p>	<p>A: Assess related health risks, in a new context</p> <p>M: Define ad hoc monitoring, prevention or communication measures</p>
<p>Characterise contamination</p>	<p>A: Evaluate flows of contaminants and thus better understand attributable sources of human cases</p> <p>M: Identify sources of contamination as quickly as possible to take action and reduce consumer exposure</p>

### Food chain surveillance process

SURVEILLANCE STAKEHOLDERS*	Operators	DDecPP <sup>1</sup> inspectors, Veterinarians, Technicians, Operators	Private or public analytical laboratories	DDecPP, DRAAF <sup>2</sup> , Veterinarians, Local interprofessional associations	NRL <sup>3</sup> , NRC <sup>4</sup>	DGAL, DGCCRF, ANSES, Interprofessional associations	NRL, Actia <sup>5</sup> , Acta <sup>6</sup> , Veterinarians, Interprofessional associations	Heads of surveillance schemes
MISSIONS	Provision of data	Sampling	1st-line analyses	Local coordination	Reference analyses	Leadership National coordination	Technical support	Management
ACTIONS	Collect, report (own-checks)	Sample	Detect	Coordinate locally	Confirm	Plan	Develop protocols	Recommend
			Quantify	Undertake preventive actions	Characterise contamination	Harmonise	Develop analytical methods	Guide
				Approve	Coordinate networks of laboratories	Coordinate	Analyse data	Classify
				Transmit	Contribute to improving data quality	Raise awareness		Approve
				Monitor		Train		Communicate to all organisations involved in the health issue, in particular those in charge of prevention and monitoring actions
						Interpret		
						Communicate		
			Check data quality					

\* This table lists only actions and stages relating to epidemiological surveillance (some stakeholders are both surveillance stakeholders and risk managers or assessors).

1. Departmental Directorate for Protection of the Population

2. Departmental Directorate for Food, Agriculture and Forestry

3. National Reference Laboratory

4. National Reference Centre

5. French Technical Coordination Association for the Food Industry

6. French Technical Coordination Association for Agriculture