Supplement 2: Checklist *Salmonella* spp. in eggs

**Area A:** Population of interest

* Study design, study question
  + What is the objective of the study?
  + Which population should be studied?
  + What is the statistical unit? A single egg, an egg carton or other?
  + What is the assumed status of the population? Positive, negative?
* Statistical hypothesis to be tested
  + Is the population of interest free from *Salmonella* spp.?
* Batch, Lot
  + What is the manufacturer's batch definition?
  + Does it make sense to adopt this definition? If not, how is the definition usefully adapted?
  + What is the production volume of eggs?
  + Which parts of the produced eggs are relevant for the investigation?
* Stratification of population
  + Is the chance of being contaminated the same for all eggs?
  + If no homogeneous distribution can be assumed, does the definition of the batch or statistical unit need to be adjusted?
  + Is it possible to take this into account through the form of sampling in the study?

**Area B:** Food item / Matrix

* Background
  + Which eggs are still available and can be examined?
  + Are there any reserve samples?
* Characteristics
  + Are the eggs clean?
  + Are the eggs being cleaned?
  + What temperature are the eggs?
* Production technique
  + In which housing system are the hens kept?
  + What is the production process?
  + How does the flow of goods look like?
  + How are the eggs collected?
  + How many times a day are eggs collected?
  + How are the eggs sorted?
  + How are the eggs packed?
  + What type of packaging is used?
  + Is new packaging used? If packaging is reused, is this done with or without disinfection?
  + How are the eggs stored?
  + Where are they stored (separation from hens, etc.)?
  + How are eggs unfit for human consumption disposed of?
  + Which places are potentially critical for pathogens to enter? (HACCP)
  + In which period of time can the suspect food have been contaminated with the agent? (Production period)
  + Could other batches also be contaminated?
* Traceability
  + When was the product produced?
  + Is it possible to trace the eggs back through the production chain to their origin (e.g. to separated stables)?
  + Can the further course of the eggs be traced?
  + Can all the information be tracked?
    - Labelling (name, best before date, batch number...)
* Buisness information
  + What is the size of the business?
  + What is the company structure and business processes?
  + How many employees are there?
  + Does the business have any certifications etc.?
  + What investigations are carried out by the business?
  + What are the eggs tested for in the laboratory and how often?
  + Are there any previous findings? If so, which serotypes were detected?
  + Which hygiene concepts are there? HACCP?
  + What are the cleaning and disinfection plans?
  + Are the hens vaccinated?

**Area C:** Pathogen

* Characteristics
  + Does *Salmonella* spp. produce toxins?
* Distribution in matrix
  + Does *Salmonella* spp. distribute evenly in the eggs?
* Contagiousness
  + How dangerous is *Salmonella* spp. for humans?
  + Is a risk assessment possible?
  + What is the infectious dose of *Salmonella* spp.?
* Epidemiology
  + How widespread is *Salmonella* spp.?
  + Where does *Salmonella* spp. occur?
  + How often does *Salmonella* spp. occur in the matrix?
* Microbiology
  + What is the growth optimum of *Salmonella* spp.?
  + How long does *Salmonella* spp. deliberate in the environment?

**Area D:** Laboratory analysis / Detection method

* Method
  + Which method is suitable for detection?
  + Which method is used by the laboratory to which the sample was sent?
* Sensitivity
  + How accurate is the test procedure? Are there any findings on this?
* Specificity
  + How accurate is the test procedure? Are there any findings on this?

**Area E:** Legal regulations

* General
  + Which legal regulations apply?
  + What can be investigated and admonished?
  + What action will be taken (e.g. in case of detection)?
* Responsibilities
  + Who is responsible?
  + What instructions and flow charts are there?
* Sampling
  + Are there mandatory sampling procedures?
  + If so, how must the samples be taken? (Number, location, technique, type, product...)
  + Do counter or duplicate samples have to be taken?
* Detection method
  + Is there a legal regulation that prescribes a certain detection method?
  + If so, which one is prescribed?
* Limit (values)
  + Can all *Samonella* species be classified as human pathogenic?
  + Are there legally prescribed limit values? If so, which ones and how high?

**Area F:** Veterinary administration

* Staff capacity
  + What can the veterinary authority contribute?
  + Which sample sizes are to be supported?
* Financial capacity
  + What can the veterinary authority contribute?
  + Which sample sizes are to be supported?

**Area G:** Statistical parameters

* Calculation method
  + What is the professional core question?
  + A: Concept of state freedom from an event
  + B: Concept of calculating a confidence interval (CI)
* Statistical errors
  + What inaccuracy can be accepted?
  + Alpha
* Effect size
  + Absolute error delta
* Prevalence (limit) or acceptance number
  + What prevalence can be assumed from a professional point of view?
  + What is the maximum number of nonconforming units or the maximum number of nonconformities allowed in the sample?