anses
French agency for food, environmental and occupational health safety

Maisons-Alfort laboratory for food safety

EURL Lm
European Union Reference Laboratory for *Listeria monocytogenes*

2016 and 2017 Work Programme of the European Union Reference Laboratory for *Listeria monocytogenes*

Version 3 – 17/11/2015

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INTRODUCTION

In May 2006, the Laboratory for Food Safety of ANSES (French agency for food, environmental and occupational health & safety), located in Maisons-Alfort, has been nominated European Union Reference Laboratory for *Listeria monocytogenes* (EURL *Lm*) (see Regulation (EC) No 776/2006).

The EURL *Lm* foresees to undertake the following actions in 2016 & 2017, according to the actions planned at the 9th Workshop of the National Reference Laboratories (NRLs) (25-27 March 2015).

Scientific & technical activities of EURL *Lm* are mainly undertaken, in the laboratory, by the *Salmonella*, *E. coli* and *Listeria* (SEL) Unit.

Most of these activities aim at implementing, from an analytical point of view, the Regulation (EC) No 2073/2005 modified on microbiological criteria for foodstuffs, which includes in particular 4 food safety criteria on *L. monocytogenes* (Annex I, Chapter 1):

- either qualitative criteria: absence of *L. monocytogenes* in 25 g, for
  - ready-to-eat foods intended for infants and for special medical purposes,
  - other ready-to-eat foods able to support the growth of *L. monocytogenes*, when leaving the producer;
- either quantitative criteria: a limit of 100 cfu/g, for
  - ready-to-eat foods able to support the growth of *L. monocytogenes*, placed on the market during their shelf-life,
  - ready-to-eat foods unable to support the growth of *L. monocytogenes*, placed on the market during their shelf-life.

In addition, Article 5 (paragraph 2) of Regulation (EC) No 2073/2005 requests that:

- Samples shall be taken from processing areas and equipment used in food production, when such sampling is necessary for ensuring that the criteria are met. In that sampling the ISO standard 18593 shall be used as a reference method;
- Food business operators manufacturing ready-to-eat foods, which may pose a *L. monocytogenes* risk for public health, shall sample the processing areas and equipment for *L. monocytogenes* as part of their sampling scheme.

This work program is scheduled on the basis of a normal 2-year activity, assuming that the renovation of the laboratory premises, planned in 2016, will enable to implement all the experimental activities planned in 2016-2017. In the case where the work programme would need to be modified, EURL *Lm* would contact DG SANTE to discuss and agree on such modification.

NB 1: In brackets under each item, the scheduled duration of the action is indicated: either annual (limited to 2016-2017), either multi-annual (on-going programme on several years).

NB 2: The activities are gathered according to the tasks allocated to EURLs, as defined by Regulation (EC) No 882/2004 on official controls (Article 32, paragraph 1 on EURLs for feed and food):

- *Section 1: Dispatch of methods and proficiency testing trials for the NRLs,*
- *Section 2: Analytical development,*
- *Section 3: NRL training and support to the NRLs,*
- *Section 4: Technical and scientific assistance to the European Commission.*

0 GENERAL ASPECTS

0.1 GENERAL COORDINATION (MUTI-ANNUAL)

General coordination by the EURL (management team, administrative department - SAG) of the NRL network (dispatch of circular letters and documents, coordination of the scientific and technical support to NRLs, …).

Relations with DG SANTE, coordination of the scientific and technical advice to DG SANTE, management of annual contract with DG SANTE (annual budgets and work programmes, annual technical and financial reports).

In-house follow-up of EURL activities, expenses, support to laboratory units involved in EURL activities.

Missions:
2 missions at DG SANTE (Brussels, 1 day each)

0.2 WORKSHOP OF THE NRLS (ANNUAL)

The EURL will organize the 10th and 11th EURL/NRLs workshops in 2016 & 2017, of general scope:

- to make a progress report on works undertaken by the EURL since the former workshop;
- at the 2016 workshop, to refine the scheduled work programme for 2017;
- at the 2017 workshop, to envisage the work programme for 2018 and later.

These workshops will take place at EURL (Maisons-Alfort, France).

Three experts would be invited at each workshop, as well as NRLs from third countries.

1 DISPATCH OF METHODS AND PROFICIENCY TESTING TRIALS

1.1 DETECTION AND ENUMERATION OF *L. MONOCYTOGENES* IN FOOD

Objective

Proficiency Testing (PT) trials organised by the EURL *Lm* for the NRLs *Lm* aim at evaluating the ability of the NRLs to apply satisfactorily the reference methods EN ISO 11290-1 & 2 for the detection and enumeration of *L. monocytogenes*, in the frame of controls prescribed by Regulation (EC) No 2073/2005.

1.1.1 2016 PT TRIAL: *L. MONOCYTOGENES* DETECTION

Duration: 2016-2017

Expected output and time of delivery

In 2nd semester 2016, the EURL *Lm* will organise a PT trial for the NRLs on *Lm* detection in ready-to-eat food. Smoked salmon is scheduled as the matrix for the PT trial to the network. EURL will analyse the results, dispatch a preliminary report, ensure appropriate follow-up of non-satisfactory results, and draft a final report to be delivered in 2017.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b.

1.1.2 2017 PT TRIAL: *L. MONOCYTOGENES* ENUMERATION

Duration: 2017-2018

Expected output and time of delivery

In 2nd semester 2017, the EURL *Lm* will organise a PT trial for the NRLs on *Lm* enumeration, in ready-to-eat food. Smoked salmon is scheduled as the matrix for this PT trial. EURL will analyse the results, dispatch a preliminary report, ensure appropriate follow-up of non-satisfactory results, and draft a final report to be delivered in 2018.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b.

1.1.3 CRITERIA FOR OUTSOURCING PART OF PT TRIALS AND FOR THE SELECTION OF SUB-CONTRACTORS

Duration: 2013 –2016

Objective

Part of PT trials organized by NRLs for the national networks of official laboratories (OLs) may be outsourced, except follow-up of individual lab performance and corrective actions. NRLs highlighted the need of guidance on how to select PT providers, including steps of PT trials that can be outsourced, frequency, details on method used by participants. A collaborative work with other EURLs in the area of biological risks is envisaged to develop an harmonized approach.

Expected output and time of delivery

EURL *Lm* will further collaborate with the Working Group (WG) of NRLs, set up in 2015, to finalize a technical guidance document on this topic.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b.

1.2 *L. MONOCYTOGENES* STRAIN CHARACTERIZATION AND TYPING

1.2.1 2016 PT TRIAL: PFGE *L. MONOCYTOGENES* SUB-TYPING

Duration: 2016-2017

Objective

This inter-laboratory proficiency testing (PT) trial, organised by the EURL *Lm*, aims at evaluating the ability of volunteering NRLs to perform satisfactorily sub-typing of *L. monocytogenes* strains by molecular serotyping, PFGE (Pulsed Field Gel Electrophoresis) and PFGE profile interpretation.

Expected output and time of delivery

A panel of 11 strains will be chosen in close collaboration with SSI, DK (upon contract for ECDC). The EURL *Lm* PT trial will be synchronised with the SSI PT trial for clinical reference laboratories. EURL *Lm* will dispatch the strains for this PT trial in 2nd semester 2016.

In 2017, EURL *Lm* will collect and analyse results from all the participants. It will ensure appropriate follow-up of non-satisfactory results. It will also produce a preliminary report for each of the participants, then the final report.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b.

1.2.2 EURL *LM* DATABASE (MULTI-ANNUAL)

Duration: 2011- until transfer of EURL *Lm* database to EFSA/ECDC

Objectives

EURL *Lm* (Unit SEL), together with a Steering Committee (SCOM) composed of representatives from 8 NRLs, EFSA and ECDC, has developed since 2011 a European database, called EURL *Lm* DB. It includes typing data of strains isolated from food, feed, animal and environment, as well as associated epidemiological data.

In the context of the new molecular database being developed jointly by EFSA and ECDC, in the frame of the EFSA Molecular Typing Data Collection system (MTDC) (see 4.2), EURL *Lm* prepares the NRL network to submit their profiles to the future EFSA-ECDC DB. EURL provides a support to NRLs for their own DB organisation and for improving the quality of their PFGE profiles. As the profiles submitted to EURL *Lm* DB are mirrored on each NRL DB, it would be easy for the NRLs to re-submit to EFSA-ECDC MTDC their profiles already validated through EURL *Lm* DB.

For example, EURL *Lm* can assist NRLs by providing a conversion tool. This tool will help to translate the epidemiological description associated to strain profiles from the EURL *Lm* DB into the EFSA scheme (SSD2: Standard sample description 2).

Furthermore, the evolution of the DB system to databases such as the one of US CDC, which will use whole genome Multi Locus Sequence Typing (wg-MLST) technique, has to be foreseen.

Expected output and time of delivery

According to the agreement within the Steering Committee of the EFSA-ECDC DB, EURL *Lm* intends to maintain the EURL *Lm* DB operational at the maximum until the EFSA-ECDC DB will be operational, expected in 2016. The exact timing to stop the EURL *Lm* DB will be decided within the joint EFSA-ECDC Steering Committee (see 4.2). EURL *Lm* will then transfer the EURL *Lm* DB to EFSA-ECDC DB, and support NRLs to re-submit their profiles and associated data to this DB.

EURL *Lm* will organize the 5th EURL *Lm* DB SCOM meeting, together with the 2016 annual workshop.

Meeting

1 meeting of EURL *Lm* DB SCOM, together with the annual 2016 workshop.

1.2.3 HARMONIZATION OF PFGE TYPING METHODS

Duration: 2014 – 2017

Objectives

In the context of the Molecular Typing Data Collection system on *Lm*, STEC and *Salmonella* set up by EFSA (see 4.2), the curation of the PFGE profiles has to be performed by each EURL according to SOPs harmonized with ECDC for the three pathogenic bacteria. The harmonisation of SOPs includes the PFGE SOPs but also the SOPs of a new typing method, under development and to be based on whole genome sequencing.

The harmonisation for *Lm* typing is based on the data from SOP comparison between SSI and EURL *Lm*, produced in the frame of the European Listeria Typing Exercise (ELiTE) study, conducted by ECDC in collaboration with EFSA and EURL *Lm*.

Expected output and time of delivery

The first version of the three PFGE SOPs on PFGE testing, PFGE profiles' interpretation and PFGE profiles' curation, have been developed in 2014, in the frame of the contract between EURL *Lm* and EFSA. In 2015, EURL *Lm* has launched their revision, in order to reach a better harmonization (i) with the SOPs for the 2 other bacteria (STEC and *Salmonella)* and (ii) with the SOP for human strains, in the frame of ELITE project.

EURL *Lm* will complete and dispatch to the NRLs the revision of these 3 SOPs.

EURL will also continue its collaboration with PulseNet (PN) international network through its participation to the PulseNet international strategic plan.

Missions

1 mission (2 days) to one of the 2 other EURLs (ISS, RIVM).

1.3 SHELF-LIFE STUDIES RELATED TO *L.MONOCYTOGENES*

1.3.1 UPDATING OF THE GUIDANCE DOCUMENT TO EVALUATE THE COMPETENCE OF LABORATORIES IMPLEMENTING CHALLENGE TESTS (MULTI ANNUAL)

Duration: 2015 - 2016

Objective

In 2012 the EURL *Lm,* in collaboration with representatives of 12 NRLs for *Listeria monocytogenes,* has developed a guidance document entitled "Guidance Document to evaluate the competence of laboratories implementing challenge tests on growth potential" (Version 0-03/02/2012).

At the 2015 workshop, it has been agreed with NRLs *Lm* and DG SANTE to update this guidance document taking into account (i) the 2014 version of the EURL *Lm* "Technical Guidance Document for conducting shelf-life studies on *Listeria monocytogenes* in ready-to-eat foods" (Version 3 -06/06/2014), (ii) the outcome of the 2014 EURL *Lm* enquiry on "the need and use of this document" and (iii) the discussions at the meeting of DG SANTE/Competent Autorithy (CA) working group "Microbiological criteria" (28 April 2015).

The main objective of the revision of this guidance document is to propose to CAs and NRLs (if mandated by their CA), an harmonized approach to evaluate Food Business Operator laboratories/laboratories upon contract for FBOs conducting shelf-life studies to comply with the food safety criteria defined in (EC) Regulation 2073/2005.

Expected output and time of delivery

A new version of the "Guidance Document to evaluate the competence of laboratories implementing shelf-life studies regarding Lm in RTE foods" will be prepared by EURL, in collaboration with a WG of NRLs, and is expected to be released at the end of 2016.

Meeting

2 meetings of the Working Group (1 meeting associated with the annual workshop).

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): a

1.3.2 PT TRIAL: CHALLENGE TEST ASSESSING GROWTH POTENTIAL (TECHNICAL PART)

Duration: 2nd semester 2016-beginning of 2017

Objectives

This first inter-laboratory proficiency testing will aim at evaluating the ability of NRLs to conduct challenge-tests assessing the growth potential of *L. monocytogenes* in a food matrix, according to the EURL *Lm* "Technical Guidance Document for conducting shelf-life studies on *Listeria monocytogenes* in ready-to-eat foods" (Version 3 -06/06/2014).

Expected output and time of delivery

EURL *Lm* intends to prepare a preliminary report for each participant and a final report by the beginning of 2017.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b

1.3.3 USERS' GUIDE OF THE EURL *LM* SET OF STRAINS

Duration: 2016

Objectives

EURL *Lm* has developed a set of 25 *L. monocytogenes* strains characterized for their growth ability in harsh conditions of temperature, pH and a_w. This set is dispatched upon request to NRLs performing challenge tests. To complete information given on this set of strains (see report dispatched by Circular Letter dated 23 December 2013), EURL *Lm* will develop a users' guide.

Expected output and time of delivery

EURL Lm will draft in 2016 a users' guide of the EURL *Lm* set of strains.

This guide will provide guidance to laboratories conducting challenge tests for *Lm*, including NRLs and laboratories conducting these studies at national level under the coordination of their NRL, for the use and storage of EURL *Lm* set of strains. These strains are to be used to contaminate artificially samples to conduct challenge tests for *Lm*.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): a.

2 ANALYTICAL DEVELOPMENT

2.1 DETECTION AND ENUMERATION OF *L. MONOCYTOGENES* IN FOOD

2.1.1 MEASUREMENT UNCERTAINTY: INFLUENCE OF THE TEST PORTION SIZE

Duration: 2011 – expected end: 2016

Objective

To conduct analyses for own checks and official controls related to the quantitative criteria on *L. monocytogenes* in ready-to-eat food defined in EC Regulation 2073/2005 modified (criteria 1.2 & 1.3 in Annex I, Chapter 1), it is important to know and to control the measurement uncertainty (MU) associated to the analytical results.

In the series of Standards EN ISO 6887-2 to 5 on the preparation of test samples for microbiological analyses, it is not specified how to sub-sample the test portion in the laboratory sample (sample that is sent to the laboratory), depending on the different types of food matrices to be submitted to microbiological analyses. This stage is however recognized as a major MU source, in particular for solid matrices characterized by heterogeneous bacterial contaminations, such as matured cheeses, smoked fishes or meat products. The EURL *Lm* has conducted a study to assess the impact on MU of (i) the procedure to sub-sample test portion and of (ii) size of test portion, in order to evaluate heterogeneity of contamination, to harmonize how to sub-sample test portions and to reduce MU.

As agreed at the 2015 workshop, EURL *Lm* has coordinated a study to assess the impact of test portion size on MU, in particular by comparing 10g or 25g test portions with naturally contaminated samples. The purpose would be to introduce recommendations on test portion size (i) in the frame of the revision of EN ISO 11290-2 Standard for the specific case of *Lm* enumeration (recommendation to CEN/TC 275/WG 6/TAG 17 *Listeria,* if enough data available before revision of EN ISO 11290-2 is finalized), and (ii) in the next revision of EN ISO 6887-1 (recommendation to ISO/TC 34/SC 9/WG 8).

Expected output and time of delivery

In 2015, EURL *Lm* has coordinated, in conjunction with EURL Coagulase Positive Staphylococci, a collaborative study on the impact of test portion size (25 g versus 10 g) on *Lm* enumeration and MU. The participation of volunteering NRLs and national official laboratories to this study was requested. These laboratories were asked to perform analyses from 25g and 10g of naturally contaminated food samples.

In 2016, EURL *Lm* will collect the results from the participating laboratories. It will analyse these results and assess the impact of the test portion size on MU. EURL will draft a report and dispatch it to the NRLs' network.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): a & c

2.1.2 APPLICABILITY OF EN ISO 11290-1&2 STANDARD METHODS FOR *L. MONOCYTOGENES* DETECTION & ENUMERATION IN PRESENCE OF NEW LISTERIA SPECIES

Duration: 2014 – expected end: 1st semester 2016

Objective

During recent years, 9 new species of the genus *Listeria* have been isolated from foods and other environmental niches worldwide: *L. marthii, L. rocourtiae, L. fleischmannii, L. weihenstephanensis, L. floridensis, L. aquatica, L. cornellensis, L. riparia*, and *L. grandensis*. It is not known whether the Standard methods EN ISO 11290-1&2 under revision (in particular their confirmation stage) can correctly differentiate *Lm* from these new species. There is a risk of lack of specificity of these methods (false positives).

Moreover, since the Standard methods under revision will include all other *Listeria* species in addition to *L. monocytogenes*, it is necessary to check the Standard methods' ability to recover and detect the newly identified *Listeria* species. In particular, certain characteristics of these newly discovered species remain unknown, such as: their growth and colony characteristics on commonly used *Listeria* selective isolation agars, such as Listeria Agar according to Ottaviani and Agosti prescribed in EN ISO 11290-1&2, their reaction to some biochemical tests used for confirmation in the Standard methods, their growth performance in the selective enrichment broth of EN ISO 11290-1 in the presence or absence of other *Listeria* spp.

Expected output and time of delivery

In 2015, EURL *Lm* will have conducted experimental work to investigate the above-mentioned questions.

In 2016, EURL *Lm* will analyse and interpret the results obtained in 2015. It will then draft a report to be dispatched to DG SANTE and NRLs.

EURL *Lm* will also transfer the outcome of this project, together with a recommendation, to CEN/TC 275/WG 6/TAG 17 *Listeria* for the revision of the Standard methods
EN ISO 11290-1&2.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): a, c

2.1.3 SAMPLE POOLING/COMPOSITING: ENQUIRY TO NRLS

Duration: 2016

Objective

EN ISO 6887-1 Standard under revision on the preparation of test samples for microbiological analyses, will now include a general approach and experimental design to sample pooling/compositing (clause 9.3 and annex A), allowing to pool test portions or

enrichment broths before subsequent analysis, as to reduce analytical costs, provided that an experimental study verifies that this practice has no impact on detection performance of the method. This study is quite heavy to perform for laboratories, since this study has to be conducted for each couple target/matrix, and a realistic stress has to be applied to the bacteria. Moreover, the study design is adequate to verify that pooling has no significant impact, or to identify a situation with heavy impact of pooling, but can hardly detect moderate effect on method performance.

In 2014/2015, EURL *Lm* has conducted a modelling study on impact of pooling to detect *Lm* according to EN ISO 11290-1.

Expected output and time of delivery

At the 2015 workshop, when discussing the outcome of the EURL study, EURL and NRLs have identified the need to conduct an enquiry on national practices regarding sample pooling for *Lm* detection, as to assess whether harmonization of practices would be needed/feasible.

EURL will conduct this enquiry to NRLs in 2016 and present its outcome at the 2017 workshop.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): a, c

2.2 *L. MONOCYTOGENES* STRAIN CHARACTERIZATION AND TYPING

2.2.1 CERTIFIED REFERENCE MATERIAL FOR PFGE TYPING OF *L. MONOCYTOGENES*

Duration: 2016 – 2017

Objective

Lm typing with PFGE technique can be improved by providing laboratories with certified reference materials (CRMs), consisting in DNA of a *Lm* reference strain embedded in agarose plugs. These CRMs would serve as reference migration bands for ensuring quality of PFGE migration profiles.

Expected output and time of delivery

EC/JRC/IRMM (Geel, BE) will launched a project in collaboration with EURL *Lm* to develop these CRMs. Once developed and certified, these CRMs would be distributed by IRMM.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b

2.2.3 INVESTIGATION OF WHOLE GENOME SEQUENCING FOR TYPING OF LISTERIA MONOCYTOGENES

Duration: 2015 – 2018

Objective

The bacterial whole genome sequencing (WGS), currently developing rapidly, enables to generate an amount of data for each strain largely superior to PFGE method currently recognized to be the gold standard method in the epidemiological *Lm* typing. For this reason, WGS is expected to become the most relevant method for molecular surveillance purposes. The technologies/devices/platforms are permanently evolving and different approaches are currently used such as Multi-Locus Sequence Typing(MLST), whole genome-MLST (wg-MLST) or Simple Nucleotide Polymorphisms (SNPs) identification to compare strains.

This project has two objectives (1) to compare the WGS approach to the PFGE method in order to fully explore the advantages and the disadvantages of WGS for *Lm* surveillance and (2) to develop harmonized SOPs at all the steps of the WGS process, including WGS data quality assessment. The discriminatory power of WGS will be assessed by determining (1) the cut-off between strains epidemiologically related or not (2) detecting epidemiological clusters in the frame of outbreak investigation.

EURL *Lm*, together with certain NRLs *Lm,* intends to set up a collaborative project to enhance expertise in WGS for *Lm* typing.

Expected output and time of delivery

In 2016-2017, EURL *Lm* will continue to set up an appropriate strains' collection. This collection will include European strains provided by NRLs and well characterized both at epidemiological level with relevant metadata, and at genetic level (PFGE, MLST, serotypes). This comprehensive strains' panel should reflect the genetic diversity of *Lm* strains of food origin and will be sequenced. It will enable to explore the suitability of WGS for *Lm* typing, in comparison to PFGE.

In collaboration with certain NRLs, EURL will propose SOPs for each step of WGS process (collection of strains to data analysis).

EURL will also collaborate with US/CDC, which is developing a whole genome-MLST (wg-MLST) method for *Lm* typing and surveillance.

Subcontracting

Shipment of strains from EURL to NRLs, or pick up of strains from NRLs to EURL.

Sequencing of strains.

Missions

2 missions to 2 NRLs involved in WGS typing activity.

1 mission to SSI (DK, upon contract for ECDC and coordinator of EFSA project on WGS for *Lm*) involved in the development of WGS typing in Europe.

Capital equipment

One bio-computing server dedicated to the analysis and storage of WGS data.

3 TRAINING AND SUPPORT TO THE NRLS

Upon request, EURL *Lm* could receive NRLs for individual training on specific topics.

3.1 DETECTION/ENUMERATION

Objective, expected output and time of delivery

EURL *Lm* will organise in 2017 a training session dedicated to the implementation of colony-count technique according to Standard EN ISO 7218, given the repeated deviations observed during PT trials on *Lm* enumeration. This session will include technical courses and will take place at EURL. Depending on the needs, a 2nd session may be organized in 2018.

Training course

3 NRL representatives per training session.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b

3.2 STRAIN CHARACTERISATION AND TYPING

3.2.1 TRAINING SESSIONS (ANNUAL)

Objective, expected output and time of delivery

EURL *Lm* will organize:

(i) Two training sessions (one in 2016 and one in 2017) on PFGE profile analysis and submission to new EFSA-ECDC database. These sessions will be organized with the 2 EURL VTEC (ISS, IT) and *Salmonella* (RIVM, NL), one session at EURL *Lm* (2016) and one session at EURL VTEC (2017) (and a future session at EURL Salmonella is forecasted for 2018), and will be proposed to the 3 NRL networks (*Lm*, *Salmonella* and VTEC).

(ii) One training session in 2017 dedicated to *Lm* typing by PFGE method. This session will include technical and theoretical courses and will take place at EURL.

(iii) Two on-site training sessions (1 in 2016 and 1 in 2017) , for NRLs which would require support in their PFGE management and data submission to EFSA-ECDC DB. On-line training sessions for NRLs with video guidance for both PFGE database management and submission to EFSA-ECDC DB.

Training course

4 NRL representatives per training session: action (i)

Missions

2 missions for the two on-site training sessions in 2 NRLs: action (iii).

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b

3.2.2 TECHNICAL & SCIENTIFIC ASSISTANCE TO NRLS, DISPATCH OF SAMPLE AND/OR STRAINS (MULTI-ANNUAL)

Objective, expected output and time of delivery

a) EURL *Lm* will provide, in the frame of the EURL *Lm* DB project (see 1.2.2) and for the EFSA-ECDC DB (see 4.2), technical remote assistance to the NRLs for:
   i) implementation of the database tools provided;
   ii) processing of their data at national level;
   iii) structuring of their epidemiological data.

   In the frame of the curation activity undertaken by EURL *Lm*, the curator will ensure to the users a technical assistance by phone to solve the PFGE deviations observed in the NRLs' profiles.

b) Upon NRL request, EURL *Lm* will provide technical and scientific assistance to NRLs, in particular to implement PFGE, PCR and WGS methods, and would send them *Lm* strains from its collection, as well as control strains, plugs or other molecular material needed to implement these methods.

Sub-contracting

Dispatch of strains or PFGE plugs and molecular material from EURL to NRLs

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b

3.3 SHELF-LIFE STUDIES RELATED TO *L. MONOCYTOGENES*

3.3.1 TRAINING PACKAGE FOR SHELF-LIFE STUDIES

Duration: 2016-2017

Objective

EURL *Lm* will develop a training tool on shelf-life studies, based on an existing French package. It is envisaged that this tool could be used to train CAs in the frame of the Commission initiative "Better Training for Safer Food" (BTSF). This training tool will thus be designed in a simple way, to deliver messages to CAs easy to understand and to implement.

Expected output and time of delivery

EURL *Lm* will develop the training tool in collaboration with volunteering NRLs.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): b

3.3.2 NRL TRAINING SESSIONS (ANNUAL)

Duration: 2016-2017

Objective, expected output and time of delivery

EURL *Lm* will propose to NRLs two training sessions (2 days, one in 2016 and one in 2017, depending on the NRL needs) on the determination of shelf-life studies related to *L. monocytogenes*. This session will include theoretical presentations and case studies.

This training session will focus on:

- challenge tests;
- predictive microbiology;
- durability studies.

At maximum, 6 persons will be trained.

Relation to EURL specific tasks (article 32.1 of EC Regulation 882/2004): d

4 TECHNICAL AND SCIENTIFIC ASSISTANCE TO THE EUROPEAN COMMISSION

4.1 DG SANTE ACTIVITIES (MULTI-ANNUAL)

Upon request of the services of DG SANTE in charge of food hygiene, participation of the EURL manager (Bertrand LOMBARD), for the analytical aspects, to the update of EC Regulation 2073/2005 on microbiological criteria related to *Lm* and to the corresponding meetings of the MS WG on microbiological criteria.

Missions:
6 meetings (1 day each, EC, Brussels).

4.2 CURATION OF EFSA-ECDC DATABASE FOR LISTERIA MONOCYTOGENES

Duration: 2016 –undefined

Objective

As requested by DG SANTE, EFSA is developing with ECDC a joint central database (DB) on molecular typing for *Lm*, *Salmonella* and *E. coli* (see DG SANTE vision paper[1]). This database is developed by EFSA and ECDC since 2013, in collaboration with the concerned 3 EURLs. Each EURL will be the curator of the DB for the bacteria it is in charge of: EURL *Lm* will curate the PFGE profiles of *Lm* strains from animal, food and feed.

Expected output and time of delivery

As agreed with EURL VTEC (ISS, IT) and EURL *Salmonella* (RIVM, NL), the curation of EFSA-ECDC DB will include the following activities:

- Curation of the submitted profiles;
- Capacitation/training of the curator team within each EURL;
- Coordination between curators of the 3 EURLs;
- Coordination with ECDC (and SSI upon contract for ECDC)/EFSA;
- Joint cluster analyses;
- Participation to SCOM of EFSA/ECDC DB;
- SOP drafting/update;
- Technical support to NRLs for submitting profiles to EFSA/ECDC DB.

Capital equipment

One computer dedicated for the curation activity (dual monitors).

[1] "Vision paper on the development of data bases for molecular testing of foodborne pathogens in view of outbreak preparedness", approved by SCoFCAH on 12 December 2012.

Missions

- 4 missions to attend the EFSA-ECDC DB SCOM meetings (2 days each), either at EFSA (Parma, IT) or at ECDC (Stockholm, SE).
- 4 missions to participate to meetings between curators of the 3 EURLs as well as with the ECDC curator.

4.3 PARTICIPATION TO CEN/ISO STANDARDISATION ACTIVITIES (MULTI-ANNUAL)

On behalf of EURL *Lm* and as EC representative:

- Participation of the EURL *Lm* manager (Bertrand LOMBARD) to the activities of ISO/TC 34/SC 9 [2] & CEN/TC 275/WG 6 [3] in particular for aspects related to the standardization of reference methods for *L. monocytogenes*;
  Missions: 2 joint annual plenary meetings, (Paris, June 2016 and tentatively in Canada, June 2017).
- Leadership by Nathalie GNANOU-BESSE for the revision and validation by inter-laboratory studies of the EN ISO 11290-parts 1 & 2 Standard methods, in the frame of the CEN Mandate M/381. Convenorship of the corresponding CEN/TC 275/WG 6/TAG 17 group on *Listeria*.
  (costs covered by the CEN Mandate,)
- Convenorship by two EURL *Lm* senior scientists (Brigitte CARPENTIER & Léna BARRE) of WG 17 of ISO/TC 34/SC 9, in charge of the revision of ISO 18593 on sampling techniques from food processing surfaces.
- Participation of a EURL *Lm* scientist (Hélène BERGIS) to WG 19 of ISO/TC 34/SC 9, in charge of developing an EN ISO Standard on challenge tests in food and feed.
  Missions: 4 missions (2 days each) in Europe.
- Participation of a EURL *Lm* senior scientist (Sophie ROUSSEL) to WG 25 on WGS, of ISO/TC 34/SC 9
  Missions: 2 missions (2 days each), in Europe or in the US.

[2] Sub-Committee 9 « Microbiology » of Technical Committee 34 « Food products »

[3] Working Group 6 « Microbial Contaminants » of Technical Committee 275 « Food analysis – Horizontal methods »