12th Newsletter
April 2016

EAVLD Newsletter

Foreword

This newsletter...

Dear colleague,

In this 12th issue of the EAVLD Newsletter we are pleased to bring the announcement of the 4th EAVLD Congress, which will take place in November in Prague, Czech Republic. We hope that you will have the opportunity to join the congress and look forward to seeing you in Prague.

We continue the series of presentations of EU reference laboratories with a report from the EURL for *Campylobacter,* which is hosted by the National Veterinary Institute, SVA, Uppsala, Sweden.

Dear EAVLD Members,

European Association of Veterinary Laboratory Diagnosticians and The State Veterinary Institute in Jihlava, Czech Republic proudly announce the 4th EAVLD Congress on veterinary diagnostics, which will be held from **6 to 9 November 2016, in Prague, Czech Republic**.

The 4th Congress will be organized by the State Veterinary Institute in Jihlava in collaboration with other Czech partners. It will be held in the Clarion Congress Hotel in Prague, located only 45-60 minutes by public transport from the airport. Based on the experience from the previous events, we are expecting a significant interest from veterinary diagnosticians from all over the world, including sponsors dealing with laboratory equipment and laboratory services in general.

To be continued on next page..

EAVLD Newsletter

4th Congress of the European Association of Veterinary Laboratory Diagnosticians

6 – 9 November 2016, Clarion Congress Hotel Prague, Czech Republic

Scientific programme of the congress will focus on these 4 sessions:
1st Session (S1) - GENERAL SESSION (Viral diseases, bacterial diseases, others)
2nd Session (S2) - VECTOR BORNE AND OTHER EMERGING DISEASES
3rd Session (S3) - FOOD SAFETY AND ZOONOTIC DISEASES
4th Session (S4) - NEW ADVANCES IN DIAGNOSTIC TECHNIQUES

Bursaries and Prizes

1. Young scientists / PhD students Bursary

EAVLD will offer young scientists / PhD students Bursaries to three presenting authors of accepted abstracts (poster or oral presentation). The selection will be made by the Congress Scientific Committee and will be approved by the EAVLD Board.

Eligible persons are:
- PhD students
- Post-docs with less than 3 years of experience as a post-doc

The bursary will be 500 euro per person.

Please visit the congress website at http://eavld2016.org/ for further details.

2. Prize for best Poster and Oral Presentation

During the congress, EAVLD will award prizes for the best oral presentation and the best poster:
Best Oral Presentation: € 300.
Best Poster € 200.

4th Congress of the **European Association of Veterinary Laboratory Diagnosticians**

6 – 9 November 2016, Clarion Congress Hotel Prague, Czech Republic

REGISTRATION DEADLINES

Early registration - until 17 August 2016

Late registration - 18 August 2016 – 28 September 2016

On-site registration - from 29 September 2016

REGISTRATION FEES

	Early 17/8	Later 18/8-28/9	On-site from 29/9
EAVLD member	330	400	470
EAVLD non member	390	460	530
Accompanying person	85	120	120

All fees are stated including the VAT.

Registration Fee Includes:

- Access to all scientific sessions, poster session and exhibition area
- Congress materials
- Coffee breaks and lunches
- Welcome Evening at Congress venue on Sunday, 6th November
- Congress Dinner on Tuesday, 8th November
- Certificate of attendance via email

4th Congress of the **European Association of Veterinary Laboratory Diagnosticians**

6 – 9 November 2016, Clarion Congress Hotel Prague, Czech Republic

Important Dates

Date	Subject
21 March 2016	Abstract Submission Opening
21 March 2016	Registration Opening
30 June 2016	Abstract Submission Deadline
31 July 2016	Abstract Notification Sent to Authors
17 August 2016	Authors' Registration Deadline
17 August 2016	Early Registration Deadline
September 2016	Programme to be Announced on Website
28 September 2016	Late Registration Deadline
20 October 2016	Pre-registration Closing

We are looking forward to meeting you in Prague! Please make sure that you don't miss the dates of 6-9 November, 2016 and that you participate and enjoy this exciting event.

EAVLD2016 congress website: http://eavld2016.org/
Congress venue hotel: http://www.clarioncongresshotelprague.com/en/
Congress Secretariat email: info@eavld2016.org

Authors:
Eva Olsson Engvall,
Ingrid Hansson,
Hanna Skarin

European Union Reference Laboratory for Campylobacter
National Veterinary Institute, SVA, Uppsala, Sweden

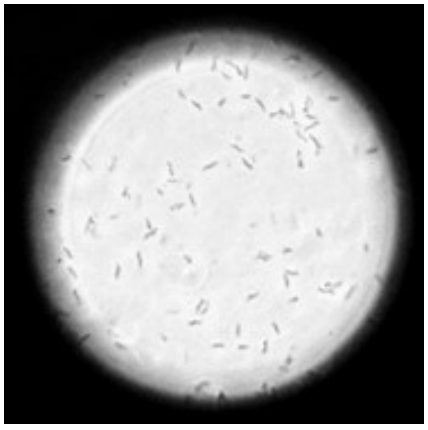
The coordinator and supervisor of the European Union *Campylobacter* National Reference Laboratories

The National Veterinary Institute, SVA, Uppsala, was appointed European Union Reference Laboratory (EURL) for *Campylobacter* in 2006. The major tasks for EURL- *Campylobacter* are to provide scientific and technical assistance to DG SANTE and the National Reference Laboratories (NRLs) in EU regarding analysis of *Campylobacter* in the food chain. This is accomplished by organizing workshops, proficiency tests, training courses, study visits, and making missions to NRLs. The EURL also provides scientific advice to DG-SANTE, EFSA, ECDC, and the NRLs, participates in ISO standardization work, and performs applied research.

Public health significance

Infection in humans with *Campylobacter*, campylobacteriosis, is the most commonly reported bacterial zoonotic disease in industrialized countries worldwide. In Europe, more than 200 000 cases are being reported annually. *Campylobacter* can be found in the intestinal tract of healthy farm and wild animals, especially in bird species. In 2011, an EFSA Scientific Opinion stated that handling, preparation and consumption of broiler meat may account for 20% to 30% of human cases of campylobacteriosis whereas 50% to 80% may be attributed to the chicken reservoir as a whole (EFSA Journal 2011; 9(4):2105). However other important sources exist, i.e. unpasteurized milk, contaminated drinking water and direct contact with animals. Campylobacteriosis typically presents with acute diarrhea, which can be hemorrhagic, fever, abdominal cramps and vomiting. Usually, the disease is self-limiting within 1-2 weeks, however severe complications occur, such as Guillain Barré Syndrome.

Campylobacter spp are Gram negative motile, slow-growing bacteria. They have specific growth requirements and require microaerobic atmosphere for growth. The international standard, ISO 10272:2006 ("Microbiology of food and animal feeding stuffs. Horizontal method for detection and enumeration of *Campylobacter* spp") describes analyses for detection and enumeration of *Campylobacter* in feed and food. The thermophilic species *C. jejuni* and *C. coli* account for more than 90% of human cases, whereas *C. lari*, *C. upsaliensis* and some other *Campylobacter* species occasionally cause disease. DNA-based techniques, i.e. Polymerase Chain Reaction (PCR) and other molecular assays are increasingly used for identification and characterization of *Campylobacter* spp.



Annual workshops

The EURL- *Campylobacter* has organized annual workshops since 2006. NRLs from all EU MSs participate as well as corresponding laboratories from 4

Continued...

Table 1. Proficiency tests (PTs) organized by the EURL- *Campylobacter*

PT	Year	No of samples	Description of Proficiency Test
1	2007	5	Detection and species identification of *Campylobacter* in swabs with chicken caecum contents (live cultures). Voluntary PT.
2	2007	12	Detection and species identification of *Campylobacter* in chicken
3	2008	14	Detection, species identification and enumeration of *Campylobacter* spp. in chicken skin (live cultures)
4	2008	11	Species identification of *Campylobacter* by 3 PCR assays (extracted DNA). Voluntary PT
5	2009	11	Detection, species identification and enumeration of *Campylobacter* in chicken meat (freeze dried cultures)
6	2010	10	Detection and species identification of *Campylobacter* in swab samples (live cultures). Voluntary PT
7	2010	10	Detection, species identification and enumeration of *Campylobacter* in chicken meat (freeze dried cultures)
8	2011	10	Detection, species identification and enumeration of *Campylobacter* in minced meat (freeze dried cultures)
9	2012	12	Detection, species identification and enumeration of *Campylobacter* in chicken meat (freeze dried cultures)
10	2012	12	Detection and species identification of *Campylobacter* in swab samples (live cultures).
11	2013	10	Detection, species identification and enumeration of *Campylobacter* in chicken meat (freeze dried cultures)
12	2013	18	Detection, species identification of *Campylobacter* in sock samples (live cultures).
13	2014	10	Detection, species identification and enumeration of *Campylobacter* in minced meat (freeze dried cultures)
14	2014	18	Detection, species identification of *Campylobacter* in milk filters (live cultures).
15	2015	10	Detection, species identification and enumeration of *Campylobacter* in chicken meat (freeze dried cultures)
16	2015	18	Detection, species identification of *Campylobacter* in sock samples (live cultures).

Continued...

to 5 non- EU European countries, i.e. Norway, Iceland, Switzerland, FYROM and Bosnia and Herzegovina. At the workshops, presentations are given by experts from the DG- SANTE, EFSA and ECDC on planned and ongoing *Campylobacter* activities at EU level and zoonosis monitoring. Results from PTs are presented and discussed and the NRLs present studies from their own countries. Experts have been invited to present studies of e.g. development and validation of new *Campylobacter* media and about molecular techniques for subtyping. The workshop presentations are published on the website of the EURL- *Campylobacter* (http://www.sva.se/en/service-and-products/eurl-campylobacter).

Proficiency tests

In 2007-2015, the EURL has organized sixteen proficiency tests (PTs) (Table 1). All NRLs in EU MSs together with laboratories of corresponding status in non-EU European countries have been invited to participate. The objectives have been to assess the performance of the NRLs to detect, species identify and quantify *Campylobacter*. Eight PTs have included detection and species identification of *Campylobacter* in different types of matrices such as cae-

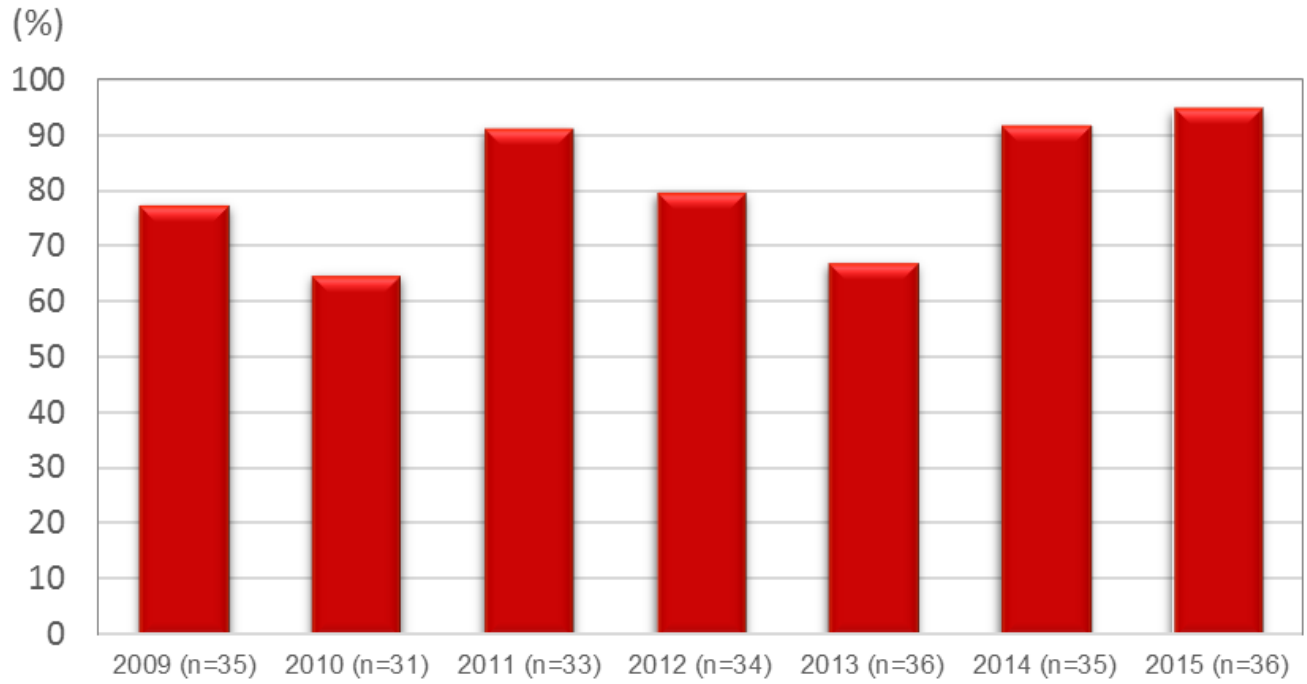


Figure 1. Results of seven PTs including enumeration. Proportion of NRLs, correctly reporting *Campylobacter* negative or *Campylobacter* spp. found in the samples by direct plating on mCCDA selective agar (n = number of participating NRLs).

Continued...

cum, socks, or milk filter samples inoculated with live bacterial cultures. One voluntary PT consisted of detection and species identification of *Campylobacter* by three PCR assays in DNA extract samples. In 2009 to 2015, seven PTs consisted of detection and enumeration of *Campylobacter* in meat (or neck skin) samples. Enumeration was performed by colony count technique where vials with freeze dried *Campylobacter* of different concentrations were distributed to be mixed with the matrix at the NRL. Some vials also contained other bacteria to mimic contamination flora. The standard operating procedures for enumeration PTs have basically followed ISO 10272: 2006. The number of participating NRLs was in the first two years 24-25, but since 2009, around 35 NRLs have participated in the PTs. The proportion of NRLs that correctly reported samples with or without *Campylobacter* spp. in the PTs including enumeration, has ranged from 65% to 94% in 2009-2015 (Figure 1).

Training activities

The EURL has organized several training courses for the NRLs. In 2007, the year before the EU wide baseline survey of *Campylobacter* and *Salmonella* in broilers was carried out (Commission Decision 2007/516/EC), the EURL organized a training course in order to ensure that the detection and enumeration procedures were harmonized before the start of the baseline survey. Altogether 32 persons participated in the training course in 2007 (Fig. 2 and 3). Since then, training courses with 5-7 persons have been arranged almost every year, for detection and enumeration according to ISO 10272: 2006, and also in PCR and PFGE (Pulsed Field gel Electrophoresis) techniques. Furthermore, study visits have been organized on ad hoc basis for persons that want to learn more about analysis of *Campylobacter* and how *Campylobacter* in broiler flocks can be monitored.

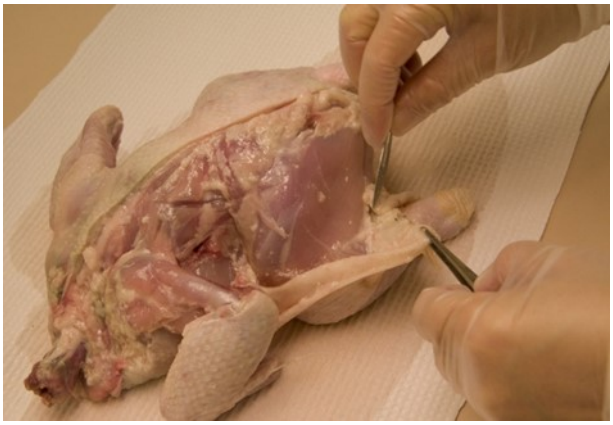


Fig 2 and 3: Training course in 2007 "Detection and enumeration of Campylobacter in broiler carcasses"

Molecular methods

For confirmation of *Campylobacter* and identification of species, PCR-based assays are more reliable compared to phenotypic methods. The EURL has assessed assays for identification of *Campylobacter* at genus and species level and encourages the NRLs to establish PCR assays, as an additional tool for "colony confirmation" purposes. During the years, an increasing number of NRLs have in-

Continued...

cluded PCR; according to a survey in 2014, almost 90% of NRLs stated that they used PCR for diagnosis of *Campylobacter*. Another technique that has become very popular is mass spectrometry for identification of bacterial species. MALDI-TOF is being used at the EURL and at several NRLs and appears to be a simple and robust method for identification of the thermophilic *Campylobacter* species, especially *C. jejuni* and *C. coli*.

For strain characterization/subtyping of *Campylobacter*, several genetic typing methods have been developed. At the EURL, PFGE and MLST (Multi Locus Sequence Typing) are used. Lately, whole genome sequencing (wgMLST) using Illumina technology has been established for genotyping.

Conclusions

The incidence of campylobacteriosis in humans in EU has not shown any decreasing trend during the last decade in spite of raised awareness and the fact that many countries have taken actions to control the prevalence in broiler flocks. Preventive actions at all stages of the food chain are being discussed in EU, i.e. biosecurity measures and process hygiene criteria of *Campylobacter* in poultry meat. The EURL will continue to assist with training and coordination of relevant methods for analysis of *Campylobacter*.