EAVLD Newsletter

This newsletter...

Foreword

This is the first **Newsletter** for the members of **EAVLD** (European Association of Veterinary Laboratory Diagnosticians)**.** We are grateful that you have chosen to be a member of this new association and thereby being willing to support the foundation and development of the EAVLD. The Newsletter is planned to be mailed to members at least twice per year. EAVLD plans to organize a Congress every second year and the first congress will be in Lelystad, The Netherlands 15-17 September 2010 (see more information below).

EAVLD has been established as an independent association of individual members with the mission of improving communication among veterinary laboratory diagnosticians. The initiative to establish EAVLD originated from Club 5 (www.covetlab.org) which is a group of five European Government Veterinary Laboratories. In 2008 they wanted to broaden their collaboration to a wider European level. The desire is to create an inclusive forum for veterinary laboratory scientists and vets working in all disciplines across the full range of species. The formation of EAVLD has been strongly supported by both the World Association of Veterinary Laboratory Diagnosticians (WAVLD) and the American Association (AAVLD). We encourage you to recommend membership of EAVLD to your colleagues. If you have ideas of how the association can develop to best serve its members please don't hesitate to contact one of the board members. Our first conference in September will be very important to ensure the Association moves forward in the right direction – please come and be part of shaping EAVLD for the future.

EAVLD Newsletter

Preliminary programme of

The first biennial congress of the EAVLD, September 15-17, 2010

to be held at The Central Veterinary Institute of Wageningen UR in Lelystad

Wednesday 15. September 2010
10:00 - 13:00: Registration with welcome drinks and lunch
13:00 - 13:30: Opening speeches
13:30 - 17:15: First session: General session (including classical diagnostics)
13:30 - 14:15: Invited speaker
14:15 - 17:15: Selected oral presentations
17:15 - 18:15: General Meeting EAVLD (members EAVLD only)
17:15 - 18:15: poster sessions + sponsor exhibitions (non-members)
Thursday 16. September 2010
09:00 - 12:45: Second session: Molecular diagnostics
09:00 - 09:45: Invited speaker
09:45 - 12:45: Selected oral presentations
12:45 - 14:00: Lunch + poster sessions + sponsor exhibitions
14:00 - 17:15: Third session: Multiplex diagnostics (includes multiplex diagnostics with non-molecular tests, like antibody-based)
14:00 - 14:45: Invited speaker
14:45 - 17:15: Selected oral presentations
17:30: End of second day, shuttle busses to hotel
19:30: Congress dinner
Friday 17. September 2010
09:00 - 12:45: Fourth session: Validation and accreditation
09:00 - 10:20: Invited speakers
10:20 - 12:45: Selected oral presentations
12:45 - 14:00: Lunch + poster sessions + sponsor exhibitions
14:00: End of congress, shuttle busses to train station Lelystad

Members are encouraged to participate in the first EAVLD Congress. You can check for updated programme and register on the homepage: www.eavld2010.org

The EAVLD Board

The EAVLD Board is responsible for managing and controlling the affairs and property of the EAVLD. During the formation of the EAVLD the provisional Board Members elected by the founders were:

President: Andrew Soldan, VLA, UK

Secretary: Willie Loeffen, CVI, the Netherlands

Treasurer: Frederik Widén, SVA, Sweden

Martin Beer, Friedrich-Loeffler-Institut, Germany

Hans Kramps, CVI, the Netherlands

Sven Erik Jorsal, National Veterinary Institute, Technical University of Denmark

Tadeusz Wijaszka, National Veterinary Research Institute, Poland

Jose Antonio Garcia, Universidad Complutense, Spain

At the first General Meeting, in September 2010, the first official Board will be elected by the members.

On the following pages you find short presentations of some of the board members.

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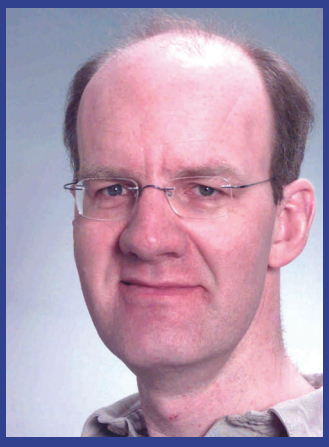
Short presentations of Board members

Andrew Soldan

Andrew Soldan qualified from the Royal Veterinary College in London in 1984. After 2 years in mixed practice he undertook an MSc in Tropical Veterinary Medicine at Edinburgh and then worked in Malawi for 4 years helping to set up an epidemiology unit, performing diagnostic work and undertaking research into tick borne diseases. On returning to the UK he worked as a Veterinary Investigation Officer at the Veterinary Laboratories Agency (VLA) Bury St Edmunds lab before going back into mixed practice in Devon. After 3 years in practice he rejoined the VLA as Regional Test Manager for the Southern region of the UK.

During 2001 he was responsible for coordinating various laboratories undertaking FMD serology following the UK outbreak. In late 2001 he was appointed as Programme Manager for International Trade and Head of Laboratory Testing with responsibility for all testing activities at the 16 VLA sites. In 2006 he became the first Commercial Programme manager for the VLA with a role to maximise the value of Intellectual Property generated from VLA research and to grow VLA's work with Industry. In 2009 he was awarded the degree of Doctor of Veterinary Medicine and Surgery by the University of Edinburgh. Since late 2009 he has been Veterinary Director for the VLA. He is married to Brenda (also a vet), has 3 children and lives in Devon. In 2009 he became the first president of the EAVLD.



Frederik Widén

Frederik Widén was born in 1958, graduated from Vet school in 1986 and spent a few years in large animal practice before starting at SVA (the National Veterinary Institute) in Uppsala, Sweden.

At SVA he started at the pathology department before moving to bacteriology and finally to virology.

The PhD work, concerning Porcine Cytomegalovirus and supervised by Dr. Malcolm Banks, was mostly carried out in England where he lived together with his family for three years.

After the PhD his work has been dedicated to research on Classical Swine Fever and Hepatitis E virus but also to West Nile Fever and emerging viral infections.

He has always, since starting at SVA, been involved in routine diagnostic work on a regular basis.

In 2009 he became the first treasurer of the EAVLD.

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Willie Loeffen

Willie Loeffen was born on July 24, 1964 in Oss (the Netherlands).

Willie studied Veterinary Medicine in Utrecht, graduating in 1991. Between 1991 and 2001 he worked at the Animal Health Service in Boxtel, carrying out field research on Aujeszky's disease, respiratory problems in swine in general and swine influenza more specifically. He also supported swine veterinarians in the field, with respiratory diseases as his main expertise.

In 2001 he started working at the Central Veterinary Institute in Lelystad as project leader on classical swine fever. There he also finished his PhD on swine influenza, which he originally started at the Animal Health Service. Later on he also became project leader for African swine fever and Aujeszky's disease. He remained interested in swine influenza, being part of the ESNIP European projects on swine influenza, working on avian influenza in swine during and shortly after the AI outbreak in the Netherlands (2003), and recently working on pandemic (2009) H1N1 in swine.

In 2009 he became the first secretary of the EAVLD, and he is also organising the first EAVLD congress to be held in Lelystad, September 15-17, 2010.

Martin Beer

Martin Beer was born on 19th of August 1966 in Erlangen, is married and has two children (Julius and Nils). He studied veterinary medicine at the Veterinary Faculty of the Ludwig-Maximilians-University in Munich, Germany. He received a DVM degree and finished his thesis about the role of T-cell immunity in BVDV infection at the same university.

He held a position at the Institute for Medical Microbiology in Munich, where he was awarded the 'Habilitation', shortly after moving to the Friedrich-Loeffler-Institut (FLI) as head of the National Reference Laboratory for Bovine Herpesvirus type 1.

Martin Beer is director of the Institute of Diagnostic Virology at the FLI, Insel Riems since 2004, and within his institute many of the German National Reference Laboratories, e.g. for FMD, CSF and AI are situated. Martin Beer has been working with several animal viruses like Pestiviruses, Bovine Herpesvirus Type 1, Avian Influenza Virus and Bluetongue Virus with special emphasis on the development of novel vaccines and modern diagnostic systems.

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Hans Kramps

Hans Kramps was born on August 8, 1948 in Amsterdam. He is married with Ingrid and they have three children and two grandchildren. Hans and Ingrid live in the small village Dronten, 25 km away from Lelystad.

Hans has studied Biochemistry in Amsterdam and did a PhD study on human cataract at the medical faculty of the University of Nijmegen. He worked from 1976 – 1990 at the department of Pulmonology at the University Medical Centre of Leyden (LUMC). During that time he did research on pulmonary emphysema and wrote several peer reviewed articles.

Since 1991 he works at the Central Veterinary Institute in Lelystad. He started at the department of Mammalian Virology (prof. J.T. van Oirschot) and did research on the pathogenesis of Bovine Respiratory Syncytial Virus infections. From 1996 Hans became head of the department of "in vitro Diagnostics" were he was responsible for the development and production of immune diagnostic test kits for the detection of viral infectious diseases in farm animals.

Since 2000 he is involved in Statutory Tasks of Central Veterinary Institute and head of section "Diagnostics, Supervision and Crisis Organisation" within the division of Virology.

Sven Erik Jorsal

Sven Erik Jorsal was born in 1950 in southern Jutland, Denmark. He is married to Jytte (also a vet.) and they have three children and one grandchild.

Sven Erik studied Veterinary Medicine in Copenhagen and graduated in 1976. He worked as veterinary practitioner for 4 years. From 1980 he worked at the Royal Veterinary and Agricultural University in Copenhagen, where he finished his PhD in 1984.

The next 5 years he worked at the Federation of Danish Pig Producers and Slaughterhouses, Laboratories in Roskilde and Kjellerup.

From 1989 he has worked at the National Veterinary Institute, Technical University of Denmark (former the Danish Veterinary Laboratory) as senior scientist and veterinary consultant.

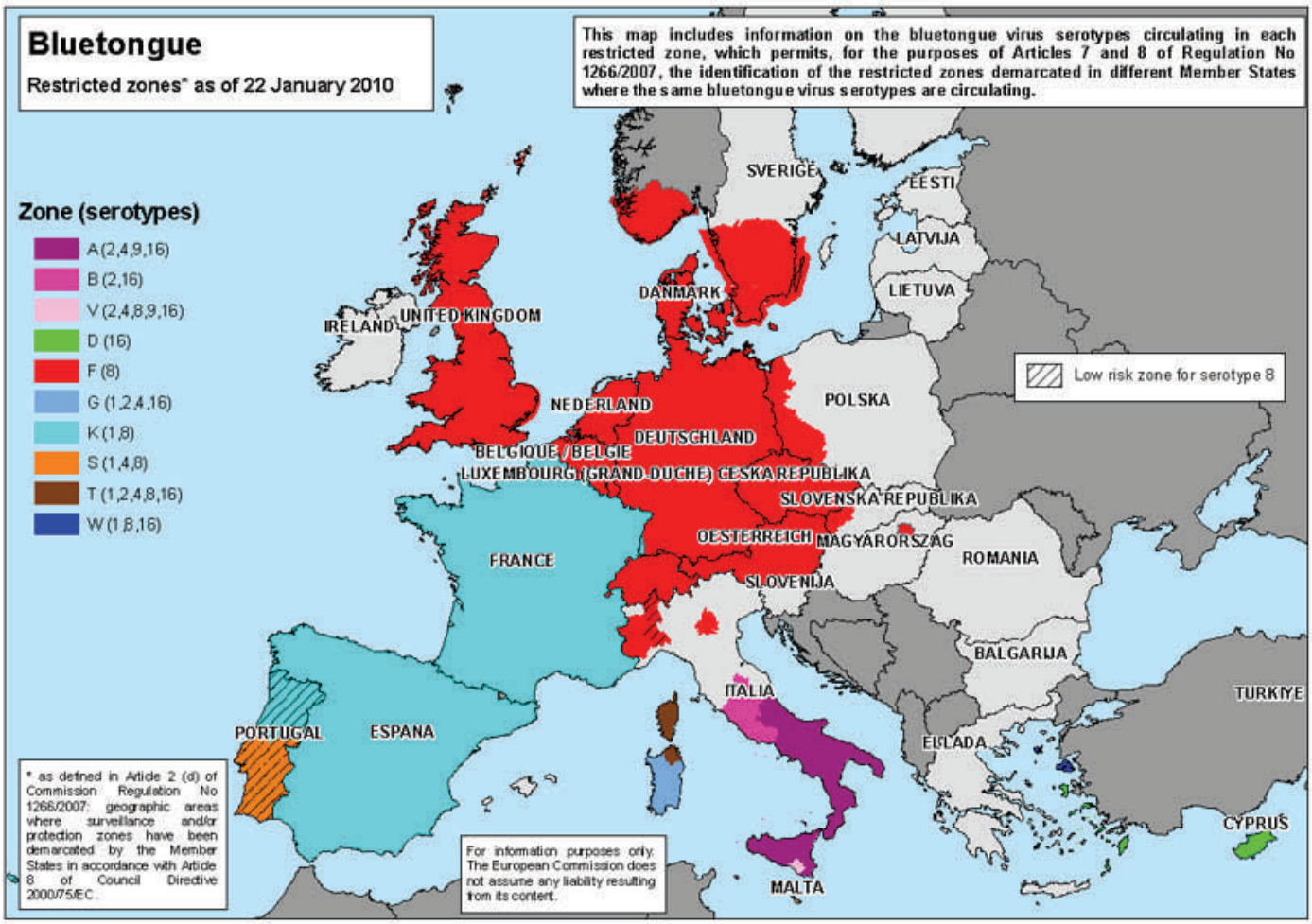
The work since 1980 has mainly concerned epidemiology and diagnostics of infectious diseases in production animals and the research topics were primarily diseases of the respiratory and digestive systems of pigs.

Bluetongue outbreak in Europe

Bluetongue (BT) with at least 24 serotypes is an insect-borne viral disease in ruminants formerly restricted to the Mediterranean region of the European Union.

In August 2006 and following years, it became clear that BT is of serious threat for most EU member states. The continuing outbreak of bluetongue virus serotype 8 (BTV-8) is the largest ever recorded. Besides this devastating outbreak, many other serotypes are still present and are expanding their respective infected area, meanwhile new serotypes are reported at the borders of Europe. To date, affected members states are mostly facing a situation with more than one serotype of BTV (Figure 1).

Figure 1



Animals are and have been vaccinated for one or more serotypes. Vaccines based on inactivated BTVs are generally used, however, vaccines based on modified-live virus are also used in the Mediterranean region. The situation of multi-serotype circulation and of a vaccinated population requires specified diagnostic assays. Development of reliable serotype-specific PCR-assays is ongoing, and for serotype-specific BTV-antibodies these serological assays are not available yet.

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For the latter, the laborious virus neutralization assay could be used for serotyping. Detection of infected animals in a vaccinated population requires DIVA-assays (DIVA= Differentiating Infected from Vaccinated Animals). The PCR-assay appeared to be an useful tool to detect recent BTV circulation in a vaccinated population (with inactivated BTV) due to the long persistence of the PCR-signal after infection. Alternatively, a new generation of BTV vaccines with an accompanying discriminating assay (DIVA-vaccine) should be developed in collaboration between vaccine developers and diagnosticians.

In The Netherlands, BTV has been detected in 2006 by a serogroup-specific real time PCR assay. Since May 2008, the start of the vaccination campaign for BTV-8 in the Netherlands, all positive results of this frontline PCR-assay for BTV are further analyzed. After initial identification of a new introduction, like incursion of BTV-6 and import of BTV-1 in Autumn 2008, newly developed type-specific PCR-assays are used for typing of the respective BTV in PCR-positive animals.

Piet A. van Rijn, Central Veterinary Institute –WUR, Lelystad - January 27th , 2010.

EPIZONE for better control of animal diseases

EPIZONE is the Network of Excellence for Epizootic Disease Diagnosis and Control**.** This European Union (EU)-funded research project started on June first 2006 and is supported by the EU's Sixth Research Framework Programme with a total EU contribution of €14 million for the period of five years.

Global dimension

EPIZONE includes over 400 experts in animal diseases and inclusion of China, Turkey, the Food and Agriculture Organisation (FAO), and several partners with an excellent network outside the European Union (EU) ensure a global dimension. The excellence of the partners in EPIZONE is demonstrated by the number of reference laboratories involved.

All partners together are responsible for 55 OIE, 18 FAO, 12 EU and 4 WHO reference laboratory tasks.

EPIZONE's fields of interest

EPIZONE covers all fields of interest concerning epizootic diseases of poultry, swine, fishes, sheep, cattle, horses, and wildlife. Scientific Themes are distinguished on the fields of diagnostics, intervention strategies, surveillance and epidemiology and risk assessment.

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EPIZONE enables everyone to profit from specific expertise

EPIZONE brings together experts on epizootic diseases of all farm animals including fishes, and pools their specific expertises, and knowledge concerning those diseases. Gaps in knowledge will be defined, duplication of expensive research will be prevented, and future research will be planned. The worldwide network of institutions contributes their expertise to the control of animal diseases in order to guarantee animal related food production for the international community. EPIZONE harmonises the conducted research, standardises the methodologies used in the various countries, and supports the introduction of innovative, improved, fast, and acceptable control measures to combat animal diseases.

EPIZONE, EPI-centre of knowledge

Scientists are brought together and improve understanding in local situations concerning animal related food production in the various member states. As a consequence, scientific opinions and recommendations will be internationally based, agreed, and accepted. EPIZONE intends to function as a platform and provide a think-tank of highly qualified scientists that develop new strategies and tools to face new challenges in the future. EPIZONE may also recommend stimulating specific research, or adapting specific European rules and regulations. Access to different types of databases, key-experts, methods, reagents and reports etc. can be easily traced via the EPIZONE website,

Communication as a weapon against outbreaks

To combat animal diseases, speed at all levels and in all aspects is crucial. One of these is communication in order to support others in combating animal diseases by sharing knowledge and experiences.

An example demonstrating the need for speed occurred shortly after EPIZONE's official launch in 2006. Approximately two months later, North-West Europe was hit by bluetongue, an unexpected and new animal disease for this part of Europe. Very quick and direct communication resulted in an effective and very helpful exchange of information to harmonise the control of this outbreak on EU level. The next year, in 2007, EPIZONE responded very quickly to a request from FAO, by providing access to experts in African swine fever after this devastating disease occurred in Georgia, Russia. Another effort was made in 2009, when EPIZONE raised the preparedness regarding Peste de Petit Ruminants (PPR) in Europe. For that purpose, CIRAD (EPIZONE partner institute) initiated a ring trial on PPRV detection for the EPIZONE institutes.

Thanks to the EPIZONE network, fragmented knowledge and experience will be consolidated and shared. This will result in the durable integration of the partners research capacities supported by excellent communication within and outside of the EPIZONE network.

Willie Loeffen, Central Veterinary Institute of Wageningen UR, The Netherlands

Application of FISH for diagnosis of Ovine *Campylobacter jenuni* abortion

Abortion in sheep can be caused by a wide range of infectious as well as non-infectious causes. In Denmark, the most common infectious causes of abortion include Toxoplasma gondii and bacterial infections e.g. Listeria monocytogenes. However, it is often not possible to identify the cause although severe lesions are found in the foetus and placenta by histopathology.

Recently, foetuses and placentas were submitted to the National Veterinary Institute, Technical University of Denmark (DTU-VET) from a sheep herd with a history of 13 abortions in a flock of 70 ewes. The submission included 5 full-term foetuses without gross lesions and 3 placentas with prominent and hyperaemic cotyledons. Initially, no pathogenic bacteria were isolated.

Histopathologically, no significant lesions apart from placentitis were found. The placentas were characterised by non-suppurative to necrotizing placentitis with abundant small bacteria located intracellular in enlarged trophoblasts, indicating bacterial infection and not only post-mortem contamination, Fig. 1. Tissue sections of placenta were then examined by fluorescent in situ hybridization (FISH) and found negative for Coxiella burnetii (Q fever) but positive for Campylobacter jejuni, Fig. 2. Subsequently the diagnosis was also confirmed bacteriologically by isolation of C. jejuni from the abomasums.

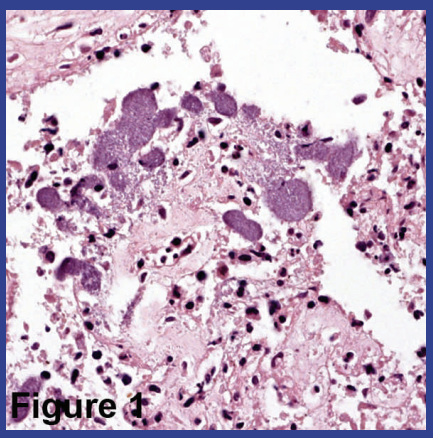
From other countries C. jejuni has also been described as a cause of abortion in sheep and in U.S.A. it is one of the most common abortive bacteria.

The importance of positive culture from ovine abortions is often difficult to interpret, since C. jejuni is normally occurring in the intestines of sheep. With the direct detection of C. jejuni intracellular in the trophoblasts by FISH accidental faecal contamination can be rejected and C. jejuni diagnosed as the cause of abortion.

Tim Kåre Jensen, National Veterinary Institute, Technical University of Denmark

Ovine placentitis caused by Campylobacter jejunum.

Fig. 1) Abundant small bacteria within extended trophoblasts (H&E)



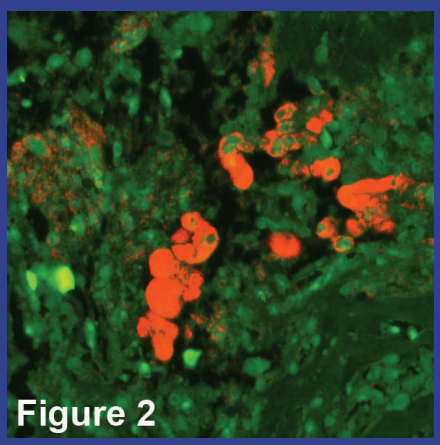


Fig. 2) Specific identification of C. jejunum (red) by fluorescent in situ hybridization

Q fever in the Netherlands

Q fever is a zoonotic disease caused by the bacterium *Coxiella burnetii*. This bacterium replicates intracellular in the 'large cellular variant' and survives outside the host cell in a highly resistant spore form, the 'small cell variant'.

Humans get infected without signs in about 60% of the infections. In 40% of the infections acute Q fever can develop with flue like symptoms like fever, headache and pneumonia. In a few cases chronic Q fever or even a chronic fatigue syndrome can develop. In acute cases antibiotic treatment is successful, which is less successful in chronic Q fever.

A wide range of animal species can be infected with *C. burnetii* without clinical signs. In goats and to a lesser extend in sheep, abortion in the final stage of pregnancy can occur. In cattle, *C. burnetii* infection is associated with infertility. Domestic ruminants are considered to be the source of human Q fever.

For long Q fever has been present in the Netherlands without causing much problems; up to 2005 no clinical problems have been seen in small ruminants and up to 2007 only around 20 human cases per year were registered. In 2005 the first cases of abortion due to Q fever were diagnosed in two dairy goat farms followed by the diagnosis in six dairy goat farms and one dairy sheep farm in 2006. Up to 2009 a total of 28 dairy goat farms with abortions due to Q fever were identified and 2 diary sheep farms (table 1).

For humans, Q fever problems started to increase in 2007 with 180 cases, followed in 2008 by 1000 cases and in 2009 with 2300 cases. Although the absolute numbers do not seem to be high the relative increase is huge and nearly all human and animal cases are concentrated in a small part of the Netherlands (figure 1).

Table 1: Number of farms with confirmed Q fever abortions

	2005	2006	2007	2008	2009	Total
Dairy Sheep Farms		1		1		**2**
Dairy Goat Farms	2	6	7	7*	6	**28**

* farms with animails at two locations

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Since June 2008 Q fever is notifiable for small dairy ruminants in the Netherlands. After the clinical suspicion, Q fever is confirmed by real time PCR targeting the IS1111 element in the C. burnetii genome. In a attempt to have a better overview of Q fever positive farms the obligation to notify is extended to Bulk Tank Milk positivity. For that a monitoring system is implemented consisting of a screening of all 450 small ruminant dairy farms by PCR at the Animal Health Service in Deventer followed up by a double confirmation at the Central Veterinary Institute of Wageningen UR in Lelystad.

In an attempt to reduce the excretion of C. burnetii from the animal population a long list of measures are implemented varying from hygienic measures to visitor bans. In an ultimate attempt to reduce the risks of human cases in 2010 all pregnant animals on Q fever positive farms are culled just before the lambing season of 2010. The number of human cases occurring in the spring of 2010 will learn if this measure will have an effect in such a short period of time.

Hendrik-Jan Roest, Central Veterinary Institute of Wageningen UR, The Netherlands

Figure 1: Map of the Netherlands with the distribution of human cases over the year 2009 and the Q fever positive farms with abortions between 2005 and 2009.