



# MED • VET • NET NEWS

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Communications Unit

This month, MVN News provides an overview of Workpackage 11 - TrichiNet.

The leader of Workpackage 11, Pascal Boireau introduces himself, as does the Thematic Representative for Detection and Control, Edoardo Pozio.

We have the latest update on the General Scientific meeting in Winchester, and our project management update focuses on workpackage commissioning for the second Joint Programme of Activities (JPA).

All the latest external meetings are listed at the back of the newsletter for all who are interested.

## TrichiNet Overview

### Workpackage 11 - Formation of a European network for risk assessment, detection and control of trichinellosis (TrichiNet)

TrichiNet evolved from two previous European projects, TrichiPorse and a Newly Associated States (NAS) extension contract (<http://www.vet-alfort.fr/bipar/niveau3/trichiporse.htm>).

#### Introduction

Trichinella are nematodes (round worms) which live as intracellular parasites. The diseases they cause are collectively referred to as trichinellosis. The most prevalent human infections are caused by *Trichinella spiralis*, followed by *T. nativa* and *T. britovi*. Domestic pigs are the dominant reservoir host for *T. spiralis*, which is now considered endemic in Japan and China. Trichinella infect nearly all orders of mammals, making it one of the world's most widely-distributed parasite groups. The major reservoir hosts for *T. nativa* are polar bears and walrus. *T. britovi* is another form of trichinellosis which affects wild animals, being found throughout most of Asia and Europe in numerous carnivorous animal species (e.g., fox, opossum, dog, cat). *T. nelsoni* infection occurs in Equatorial Africa and uses hyenas and large cats as reservoir hosts. Most animals acquire trichinellosis by scavenging.

#### Trichinella Infection

Infection occurs by ingesting raw or undercooked meat which contains the Nurse cell-larva complex of the worm. The first-stage worms are released by the action of digestive enzymes in the stomach, and locate to the upper two-thirds of the small intestine where they mature.

#### A re-emerging disease

Trichinellosis is a re-emerging disease in Europe and the occurrence of several outbreaks during the last 10-15 years has clearly illustrated the need for improved guidelines for its prevention and control. This applies to both animals which are to be consumed (production animals) and the treatment of human infections. The disease is listed

in the EC Zoonoses Directive and meat from millions of pigs, horses and game animals are subject to mandatory inspections costing the EU over €100 million annually. The sources of infection in man differ, but risk is primarily confined to extensively bred production animals and game, with most outbreaks arising from uninspected meat imported from non-member states of the EU.

#### Aims and objectives

The overall aims of TrichiNet during the first 18 months are threefold:

- To create a scientific network that will gather available information on the occurrence of Trichinella in European animals and man,
- To assess the most current meat inspection technology,
- To create a European repository and develop an integrated project on Trichinella and trichinellosis.

The specific objectives are as follows:

- The establishment of a research network
- To develop a central database on the prevalence and epidemiology of Trichinella
- To assess available technologies for meat inspection
- To establish a central repository
- To disseminate research information to

stakeholders

- To develop a new research project on Trichinella and trichinellosis

#### To establish a research network

The development of a research network on trichinellosis was previously carried out with 24 scientists representative of 24 institutes and 17 European countries. To organise this network an initial international symposium on the nematode parasite was held on 26 November, 2004 at AFSSA, France. The topic of this international symposium focused on human, plant and animal nematode parasites and was divided into three sessions: genetic diversity; virulence genes; and diagnosis and control methods. Seventy participants gathered to participate in 29 oral and poster presentations. Numerous partners to TrichiNet or external experts presented communications on trichinellosis. The final meeting of the European TrichiPorse contracts was also held on November 29 at Maisons-Alfort, France. The TrichiNet kick-off meeting was an opportunity for all involved to prepare new European projects drawing on the experience of other nematode research fields. The second TrichiNet meeting was held in Berlin (Karsten Noeckler) on 9-10 June 2005 at which 13 external experts were gathered.

#### To collate epidemiological data

National prevalence statistics and other available data on Trichinella in man and animals have been gathered from representatives of each country and The International Commission on Trichinellosis. During the last three years more than 700 new *Trichinella* isolates have been obtained in Europe from wild and domestic animals. All these isolates were collected and typed by the Italian National Institute of Health (Istituto Superiore di Sanita - ISS) mainly through TrichiPorse contracts but also during the initial phase of TrichiNet. During 2004, trichinellosis emerged several times in pig farming countries (Slovakia, Poland, Corsica, Spain, Turkey...) suggesting the requirement for new approaches, particularly when researching into the risk assessment of infection by consuming raw pork. These approaches apply to the establishment of high, medium and low risk geographical areas. The highly infected area(s)



Trichinella

will be mapped and the number of samples examined in each country will also be calibrated to define precisely those areas that are highly infected, moderately infected or have a low levels of infection. This information is useful for experts such as those in the European Food Safety Authority (EFSA).

#### To establish a central repository

A central repository has been established at the ISS (under the supervision of E Pozio). Specimens from infections in man and animals were collected and maintained at ISS to ensure detailed identification of the diversity of infection within European isolates. This repository was able to use European material collected under the TrichiPorse contracts. A standardized Polymerase Chain Reaction (PCR) method for the identification of *Trichinella* species and genotypes will be proposed through TrichiNet. New markers to trace back isolates from fork to farm are under development and will benefit from sequencing projects using Expressed Sequence Tags (EST). Four reference strains representative of the four *Trichinella* species found in Europe have been proposed and are available for use by National Reference Laboratories. The diffusion of the protocols of standardized PCR(s) for the identification of *Trichinella* species and genotypes will be completed by the end of 2005.

#### To assess current technology on direct tests by meat inspection

An initial review of direct tests (published and experimental data) indicating a wide variety of methods involving numerous parameters and critical points (temperature, volume of digestion, agitation, samples size, freezing, cooling, mesh of the sieve, background, etc...) has been completed. The complete review of all available technology for meat inspection and the degree of implementation of such inspections will be achieved and disseminated to stakeholders through publications during 2005. The magnetic stirrer method is the method that reproduces the required sensitivity. The TRICHOMATIC 35 is no longer available as the Danish manufacturer stopped its commercialisation.

#### To assess current technology on indirect tests

A review of current available technologies for the evaluation of host-*Trichinella* interactions in serology and cellular immunology is ongoing. Informative data on human serology performed with different Enzyme-Linked Immunosorbent Assay (ELISA) kits will be collected by J. van der Giessen and S. Delibas. A group of European immunologists in the field of *Trichinella* has been set up by I. Vallée, T. Garate and F. Bruschi. These experts will screen antigens involved in immune responses at the humoral or cellular level. Comparative studies between ELISA tests were done with different antigens: Excretory / Secretory (E/S) antigens and recombinant peptides. The sensitivity, specificity and repeatability of indirect ELISA (iELISA) tests with individual selected recombinant peptides (obtained during TrichiPorse Contracts) are under evaluation.

#### To develop a project proposal

K Noeckler is the coordinator of a proposal on *Trichinella* and trichinellosis that was

## PEOPLE

Pascal Boireau (MS, DVM, PhD) is the leader of Workpackage 11. He is 47 years of age and currently holds the position of Head of the Joint research unit (JRU) at the National Institute for Agricultural Research (INRA) French Agency for Food Safety (AFSSA) veterinary school (ENVA) and university (Paris XII). His work concentrates on the Molecular Biology and Immunology of Parasites and Fungi. He is Deputy Director of the Animal Health Department of INRA with a staff of 270 scientists. From 1986 – 1989 Pascal worked as an expert for the license of veterinary vaccine under the biotechnology procedure and between 1986 and 1988 he was a French expert in the biotechnology field for recombinant bovine growth factor. He was also an expert for the EU GMO release commission working group between 1992-96. Pascal has been a member of the French Genetic Committee for ten years giving him the authority to classify Genetically Modified Organisms in laboratories, according to EC Directives 90/219-220. He was a consultant for the Biotechnology group of the World organisation for Animal Health (OIE) between 1990 and 2000 and has Coordinated several International Research Grants: with China (AFCRST grants), Mexico (ECOS/ANUIES grants), Romania (EGIDE) and Europe (TRICHIPORSE QLK1-2000-01156 and QoL-2002-NAS). He organised the Xth International Conference on Trichinellosis with J Dupouy-Camet (Fontainebleau, France, 20-24 August 2000) and has also organised national symposia for the French Society of Parasitology. He is a Member of the International Commission on Trichinellosis and was a Member of the European group on Trichinellosis between 2000 and 2001. He is currently an expert for the European Food Safety Authority working group on *Trichinella* and is a Member of the European Board of parasitology.



Pascal Boireau

submitted to the EC for funding within Framework Programme six (TrichiTest). This proposal project is based on the evaluation of direct and indirect methods to detect *Trichinella* to be used for meat inspection and serological surveillance (artificial digestions; full automated detection method; E/S antigen ELISA), including standardization, gold reference standard, ring trials and cost analysis.

Title: Optimisation and standardisation of present methods for *Trichinella* meat inspection, and serological surveillance and evaluation of the potential for fully-automated meat inspection procedures, including cost efficiency. The project is divided into eight workpackages

WP1: Comparison of four digestion methods for the direct detection of *Trichinella*. (Germany (BfR))  
 WP2: Proficiency testing of the best method (Denmark (DFVF))  
 WP3: The development of a prototype for fully automated direct detection of *Trichinella* (Denmark (SME))  
 WP4: Validation of fully automated direct detection of *Trichinella* (Denmark (KVL))  
 WP5: Standardised ES-antigen production. Production of standard sera and meat juice (Italy (ISS))  
 WP6: Optimised and validated ELISA for sero-surveillance programmes (France (AFSSA))  
 WP7: Proficiency testing of standard ELISA for sero-surveillance programmes (Netherlands (RIVM))  
 WP8: Cost analysis

#### Anticipated future tasks may involve:

- Studies on the diversity of European isolates
- Development of risk assessment models
- Development of strategies for the prevention of infection and control during food production
- Improvement of methods for meat inspection (quality control)
- Implementation and validation of detection techniques

## WINCHESTER MEETING UPDATE

The First Med-Vet-Net Scientific Meeting to be held in Winchester (29 June - 1 July 2005) will be attended by up to 200 scientific representatives from many different European countries within the Med-Vet-Net partnership. This meeting will provide Med-Vet-Net partners with the opportunity to present their work as oral and poster presentations and for delegates to discuss scientific outputs from the different Workpackages.

The aims of this meeting include the sharing of research knowledge on zoonotic diseases being carried out at partner institutes, the provision of opportunities for networking and the development of collaborative ideas with other scientists from within the partnership.

The final agenda promises three parallel sessions full of interesting and novel science. The focus of the detection and control thematic area will cover phenotypic and genotypic detection approaches for determination of both virulence and antimicrobial characteristics, as well as a session devoted to parasites. The epidemiology thematic area is divided up into several areas including fundamental and more applied perspectives of this scientific area. The risk research thematic session will focus on several key aspects of *Campylobacter* cross-contamination and control. The Host-pathogen thematic area presentations will focus on *Salmonella*, *E. coli* and *Cryptosporidium*. The Emerging, Neglected and Topical Zoonoses sessions will focus on several key issues such as Q fever, rabies and viruses.

Discussion groups have been set up for several of the thematic areas including Host-microbe interactions and Emerging and Neglected Zoonoses.

Claire Cassar

## PROJECT MANAGEMENT

The first phase of the scientific workpackage commissioning for the second Joint Programme of Activities (JPA) is now complete. I would like to take this opportunity to thank all the subcommittee members who undertook this difficult task.

Twenty four brief proposals were submitted for the 24 requirements calls. The quality of proposals received was very high and we thank all the people who worked so hard in submitting such good quality proposals on time. All but two proposals met the minimum criteria. Of the remaining proposals the Commissioning Subcommittee has now made its recommendations to the Co-ordinating Forum. Twelve proposals have been ranked and recommended for progression to detailed negotiation of the scientific objectives and budgets. If sufficient funds are available, a further two proposals are recommended for minimal funds to support database maintenance and discussions. The full list of recommended proposals is given below and will be published on the website.

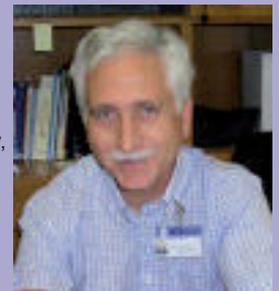
The negotiation phase will be, by necessity, short. The subcommittee has provided each of the WP leaders a list of changes required to their detailed project proposals during the negotiation phase. This is now the time to ensure that all partners are fully represented in any project of interest. Contact details for the Workpackage leaders and their deputies will be provided to the Institute Representatives and put on the website.

### Other Project Management Activities

Med-Vet-Net owes its existence to Club 5, an informal association of five major European Institutes (SVA, AFSSA, DFVF, CIDC and VLA), which initiated the concept for our network.

## PEOPLE

Edoardo Pozio is the Thematic Representative for the Detection and Control Thematic area. He is a parasitologist. He is 53 years old and Research Director of the Unit of Gastroenteric and Tissue Parasitic Diseases at the Istituto Superiore di Sanità (ISS) in Italy, Department of Infectious, Parasitic and Immunomediated Diseases. For the past 24 years he has been researching biology, taxonomy, epidemiology and immunology of several parasitic zoonoses (leishmaniosis, trichinellosis, cryptosporidiosis, cystic and alveolar echinococcosis, giardiasis, microsporidiosis) at ISS. His main interest is the taxonomy and epidemiology of *Trichinella* infections. He is the Head of the OIE reference laboratory for trichinellosis and the past President of the International Commission on Trichinellosis. He was and is also the coordinator of many research projects on helminthic infections and on opportunistic parasite infections, and he has published over 180 articles in international journals. He is married, has three boys of 13, 22 and 26 years and lives in Rome, 12 minutes walk from the ISS. His hobby is herpetology with a special interest in snakes.



Edoardo Pozio

Club 5 meets annually and at the most recent meeting in Uppsala, I presented the progress of Med-Vet-Net, which was well received. At this meeting we sadly said farewell to Knud Pedersen, who retired as the Director of DFVF. Knud was a proactive member of our Governing Board. He will be missed for his enthusiastic support of Med-Vet-Net and constant encouragement of the project management team. We wish him a long and happy retirement. While in Uppsala I also visited the SVA to meet with the Institute Activities Team. In addition I discussed the planning of a Workshop on Salmonella in Poultry to be undertaken next year by the SVA team. I thank them all for their hospitality and enthusiastic approach to the network activities.

In the UK, the control and prevention of zoonoses has a high political agenda. The UK Zoonoses Group was established following the BSE crisis to share information on zoonotic agents under the auspices of the Chief Medical and Chief Veterinary officers from throughout the UK. At the most recent meeting, a progress document on Med-Vet-Net was presented. This presentation gave an

opportunity to raise the profile of our network at a high political level and to reinforce our aim to advise policy decisions. All members of the network should take similar opportunities whenever possible. With appropriate adaptation for national scenarios, the progress document presented may be used as a model for other presentations (this will be available on the public Med-Vet-Net website shortly).

Diane Newell



## Title

Rank

Workpackage Leader

Title	Rank	Workpackage Leader
Molecular epidemiology of <i>Salmonella</i> Genomic Island 1 (SGI)	1	Dik Mevius (CIDC)
Zoonotic Protozoa Network (ZOO-Net) – <i>Cryptosporidium</i> and Giardia	2	Simone Caccio (ISS)
Prioritising foodborne and zoonotic hazards at the EU level	3	Arie Havelaar (RIVM)
Comparison of <i>Campylobacter</i> risk assessment models: towards a European consensus model	4	Maaten Nauta (RIVM)
A forgotten pathogen in our midst? Development and application of improved diagnostics for Q fever	5	To be confirmed
Virulotyping of new and emerging salmonella and VTEC	6	Roberto LaRagione (VLA)
Harmonisation of <i>Trichinella</i> infection control methods, quantitative risk assessment in pigs and an early diagnosis in humans to increase treatment efficacy	7	Pascal Boireau (AFSSA)
Methods of attributing human zoonotic infection with different food and food animals	8	Tine Hald (DFVF)
Surveillance of emerging antimicrobial resistance critical for humans in food, environment, animals and man	9	Bruno Gonzalez-Zorn (UCM)
CAMPYNET3	10	Eva Olssen (SVA)
Food producing animals as a potential source of emerging viral zoonoses	11	Franco Ruggeri (ISS)
Design, analysis and calibration of epidemiological studies addressing the surveillance pyramid	12	Kare Molbak (SSI)

## ADMIN BUREAU UPDATE

### SSA Video-link

Following the submission of the MVN-video-link SSA proposal to the EC last February, AFSSA as Co-ordinator of this project, have now received the Evaluation Summary Report. Many proposals were submitted to the EC for a standard total grant amount, and although the specific needs that we raised and the justifications that we stated in our proposal showed innovation, our proposal did not pass all the scoring thresholds of the Evaluation criteria. This was especially true of the relevance (overlapping of the SSA objectives with Med-Vet-Net) and potential impact of the proposal. As a consequence the Commission have decided to reject the proposal and AFSSA expect to receive an official final decision from the EC in the near future.

The next step will be to organise a meeting to discuss this matter further. It was initially decided at the Copenhagen video-link meeting last December, that in case of rejection of our proposal, and provided the definition of the needs for our consortium in terms of communication tools still fit with the capabilities of a video-link system, we would investigate the possibility of Workpackage 1 funding the complementary video-link equipment required. This would be based on the needs of the Consortium in terms of the availability of existing equipment.

### Funding of the 2nd Joint Programme of Activities (JPA)

The Co-ordinator's Representative André Jestin visited the EC in late May. He requested an increased grant for the second and third JPA, which would be balanced by smaller grants for the two last JPAs. However, this was refused for budgetary reasons. The possibility of changing the linear spend profile of Med-Vet-Net finds was initially proposed by the Co-ordinator's Representative at the last Co-ordinating Forum in London.

The EC is considering proceeding with two fixed payments to the Co-ordinator for funding the second JPA, instead of only one payment at the beginning each JPA, as planned in the first payment schedule. We do not have any official written confirmation of this, but we are expecting a decision from the EC in the coming months. Such a decision would not affect the functioning of the Consortium as a whole, because, according to the Consortium Agreement, the Co-ordinator already divides the payment of the grant received from the EC to the partner institutes into two equivalent payments (50% at Month 1 and 50% at Month 12). Thus, instead of funds being kept in the Co-ordinator's bank account for one year, the money from the first payment of a grant to the partners will remain at the EC. Nevertheless, if the EC now doubles the number of payments to the Co-ordinator, given the delay in payment of the first grant in late 2005, we must anticipate that we could face further

similar delays. This would result in the delayed transfer of funds to the partners.

### Follow-up of financial reporting from partners – Lessons to learn for drafting of the next budget

The financial conference held in late March 2005 aimed to assess the level of expenditure of the Workpackages in the Partner Institutes and enabled the financial staff to understand Med-Vet-Net reporting requirements. Results showed that the identification and updating of expenses relating to personal costs, travel and subsistence needed improvement. From the results of this exercise it was decided that the Administration Bureau would meet with all partners during June 2005, in order to personally provide the necessary information and guidance relating to financial reporting. At the first meeting which was with the new SfAM CEO, Mr Philip Wheat, the process was found to be very useful and informative.

### Date of next Co-ordinating Forum meeting

The next Co-ordinating Forum meeting will take place in Paris at AFSSA Head Office on 28 September from 9am to 5pm. Invitations, programme, background documentation and local organisation will be handled by the Chairman of the Co-ordinating forum and the Administration Bureau.

*Admin Bureau*

## EXTERNAL CONGRESSES

### One profession, one vision: 28th World Veterinary Congress / 142nd American Veterinary Medical Association Annual Convention

Minnesota USA. 16 - 20 July 2005

We anticipate this to be an unprecedented opportunity for professional development, veterinary education and the exchange of state-of-the-art veterinary knowledge and information on a global level. Nearly 1,000 hours of scientific programming will feature world-class speakers in companion animal medicine, public health, food safety, veterinary industry, animal production, animal welfare and international animal health issues. For more information please visit [www.wvc2005.org](http://www.wvc2005.org)

### First National Symposium on Conservation Medicine

Auckland, New Zealand. 7 - 8 July 2005

For more information please visit [www.ecohealth.net/pdfs/Flyer%20CM%20symposium.pdf](http://www.ecohealth.net/pdfs/Flyer%20CM%20symposium.pdf)

### 60th International Conference on Diseases in Nature Communicable to Man (INCD-NCM)

Alberta, Canada. 7 - 9 August 2005

INCDNCM conferences are multidisciplinary in scope and we welcome abstracts on viral, rickettsial, bacterial, parasitic, prion-related diseases acquired from natural sources, including animals (wild or domestic), contaminated water or food supplies, arthropod vectors and other sources. Submitted presentations are typically 10-15 minutes in length and can describe epidemio-

logical, clinical, ecological, diagnostic or laboratory-related aspects of the above diseases. Student presentations are encouraged. For more information visit [www.provlab.ab.ca/bugs/incndcm/info.html](http://www.provlab.ab.ca/bugs/incndcm/info.html)

### Looking Ahead in Epidemiology 14th Annual Meeting of the Australasian Epidemiology Association

Newcastle, New South Wales, Australia 5 - 7 October 2005

This meeting provides an opportunity to present and discuss current and future epidemiological, biostatistical and public health issues, and to provide a forum for networking with like-minded individuals. Students and early career researchers in epidemiology, biostatistics and public health are particularly encouraged to attend. For more information visit [www.icms.com.au/aea2005](http://www.icms.com.au/aea2005)

### 12th International Symposium of the World Association of Veterinary Laboratory Diagnosticians

Montevideo, Uruguay 16 - 19 November 2005

This world congress is organized by the World Association of Veterinary Laboratory Diagnosticians (WAVLD), the Uruguayan Association of Veterinary Laboratory Diagnosticians (AUVELA) with the support of the OIE and together with the Uruguayan Veterinary Medicine Association, the Small Animals Veterinary Society and the Pan-American Dairy Federation and will gather top specialists in the field, veterinary laboratory diagnosticians, clinics, general practice veterinarians and all related specialities. For more information visit [www.congresos-rohr.com/labdiag/index.htm](http://www.congresos-rohr.com/labdiag/index.htm)

### 7th OIE / World Association of Veterinary Laboratory Diagnosticians Seminar on Biotechnology / 12th International Symposium of the World Association of Veterinary Laboratory Diagnosticians

Montevideo, Uruguay, 17 November 2005

For more information visit [www.oie.int/eng/montevideo/home2.htm](http://www.oie.int/eng/montevideo/home2.htm)

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