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Med-Vet-Net Communications Unit

In this issue of Med-Vet-Net News, Workpackage Leader, Roberto La Ragione, gives us an overview of 'Virulotyping of new and emerging Salmonella and VTEC' – Workpackage 26.

Kumar Sivam updates us on the New and Emerging Zoonoses Groups and announces a workshop to be held in November.

Sponsored participants to the FSRC–Med-Vet-Net conference 'Priority Setting of Foodborne and Zoonotic Pathogens' report back on the conference and their experience.

And we have our regular updates from the Project Management Team and the Admin Bureau.

Virulotyping overview

Workpackage 26 – Virulotyping of new and emerging *Salmonella* and VTEC

Salmonella and *Escherichia coli* were first described in the early 1880s and have since become two of the most studied intestinal pathogens. They are two of the most commonly implicated pathogens in human intestinal disease worldwide. Both pathogens are capable of causing disease in a wide range of hosts, although some serotypes (types with specific antigens) are host restricted. Interestingly, many of these pathogens act as commensals¹ in their reservoir hosts and are only pathogenic when they enter into an opportunistic host such as man. Farm animals are the primary reservoirs for these important pathogens and thus they are of zoonotic importance.

The diversity of pathogens within the gastrointestinal tract allows for much genetic exchange between organisms and the subsequent development of new pathotypes, which may be highly virulent or resistant to antibiotics. As mentioned above, *Salmonella* and *E. coli* are important food-borne pathogens and so the identification of new and emerging pathotypes is essential if effective intervention strategies are to be developed.

There is a wealth of expertise on *Salmonella* and Verotoxigenic *E. coli* (VTEC) within the Med-Vet-Net network and one of the

principle aims of Workpackage 26 is to exploit this expertise, particularly as so many different institutes within Med-Vet-Net are already working in this important field of research.

Virulotyping is a newly emerging genomic-associated approach to bacterial molecular epidemiology involving the use of DNA arrays designed to determine the presence or absence of potential virulence-related genes. Institutes within Med-Vet-Net have established different genotypic and phenotypic typing methods which they are using to characterize virulence determinants in *Salmonella* and VTEC.

Aims

Workpackage 26 involves 11 European partner institutes (VLA, BfR, ISS, SVA, HPA, CIDC, AFSSA, SSI, VMRI, PZH and ISCIII) and aims to bring together all interested parties and to exploit molecular expertise within Med-Vet-Net by selecting appropriate *E. coli* and *Salmonella* isolates by PCR (polymerase chain reaction) analysis and then using a subset of these isolates to assess the

currently available virulence arrays for *Salmonella* and *E. coli*, developed by BfR, ISS and VLA.

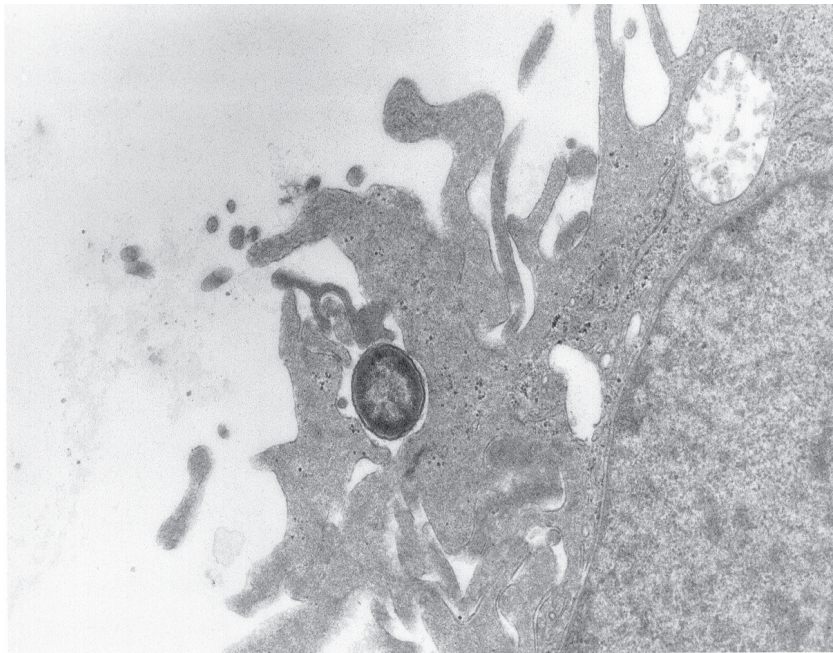
Bacterial isolates will be selected based on set criteria, including provenance, serotype, phage type and antibiotic resistance. Ten known virulence determinants each for *E. coli* and *Salmonella* will be selected. Using specific PCR primers, control strains and amplification conditions provided by VLA, BfR and ISS for the selected virulence determinants, all Workpackage 26 partners will be able to provide a template of the virulence determinants present in their selected VTEC and *Salmonella* strains. Each partner will curate their results into a simple database for submission to the VLA. Strains showing novel virulence combinations will be selected for further analysis using the *E. coli* and *Salmonella* virulence gene microarrays developed by VLA, BfR and ISS. All data generated from preliminary screening and arrays will be curated into a single database available to all partners.

The use of the microarrays will enable the study of a large number of virulence determinants and their distribution within the subset of strains selected. Further, it will allow the comparison of the three different array platforms used within the project. The preliminary PCR results will also allow validation of the microarray data and establish whether microarrays can be used routinely for diagnosis and typing of *Salmonella* and *E. coli*.

¹Commensals are microorganisms that normally live in close contact with a human or animal without causing any harm. Many of the bacteria normally present on skin or in the intestine are commensals.



Participants at the Workpackage kick-off meeting in April.



Salmonella-induced ruffle on cultured epithelial cells (transmission electron microscope image). The bacterium use a syringe-like mechanism to inject proteins through the membrane and into the cytoplasm of the cell it is infecting, causing the membrane to ruffle outward.

Progress

- A kick-off meeting was held at the VLA on 7 of April 2006 to discuss the isolate selection criteria and PCR targets and database curation.
- The kick-off meeting revealed significant expertise and resources among the partners. Similarly some limitations were identified.
- PCR targets have been selected and primers designed and validated.
- A poster presentation was given at the 2nd Med-Vet-Net Annual Scientific Conference in Malta, where there

was much interest in the virulotyping project and its wider applications.

- All institutes have selected their isolates and PCR primers targets and control strains have been distributed to all partners.
- A number of institutes have commenced PCR amplification of target genes in their selected panel of VTEC and or *Salmonella* isolates.

Roberto La Ragione

Project management

Deliverables

While most of you have been holidaying, the project management team have been busy collecting, editing and presenting the deliverables for the first two years (in all about 80!). In a final draft format, these have been placed on the Deliverables Workspace area in the members' workplace of the website for review within 4 weeks by the Co-ordinating Forum, Governing Board, Advisory Panel and Workpackage Leaders. The EC Liaison Officer has also been given access to this area. After this time period the deliverables will be presented formally to the EC. Each deliverable is headed by a standard front page stating the title and due dates as well as the level of dissemination that is agreed, i.e. public, restricted or confidential. Now that this system of deliverables is established, the presentation of deliverables from the Workpackage Leaders should become timely in future.

Med-Vet-Net People

Roberto La Ragione leader of Workpackage 26

Roberto graduated in 1995 with a Bachelor of Science degree in Zoology and then went on to study for an MSc in veterinary microbiology. In 1996 he moved to the Veterinary Laboratories Agency to undertake a PhD on the pathogenesis of *Escherichia coli* in poultry. On completion of his PhD he commenced a post-doctoral position in collaboration with the University of London based at the VLA, studying *E. coli* virulence factors and vaccine development. In 2001, Roberto was appointed to his current position of Senior Scientific Officer in the Department of Food and Environmental Safety at the VLA. His current research interests focus on the pathogenesis of food-borne pathogens with a particular interest in VTEC (Vero cytotoxin-producing *E. coli*) and *Salmonella* and the development of intervention strategies for the control of these bacterial pathogens in food-producing animals.



Dr Roberto La Ragione

Advisory Panel

The Consortium Agreement signed at the beginning of the project by all partners established an Advisory Panel of external experts. The panel currently comprises: Bill Reilly (Health Protection Scotland), Frans van Knappen (FVM, Utrecht), Riitta Maijala (Finnish Food Safety) and Francois Meslin (WHO). In addition there are two Advisory Panel observers: Marta Hugus (EFSA) and Andrea Ammon (ECDC). In brief, the remit of this panel is to advise the Governing Board of the quality and appropriateness of the research and integration work undertaken. On 27th July the Advisory Panel met in London. Discussion of Action Points from previous meetings centred on the role and remit of the Advisory Panel particularly in relation to the refereeing processes now put in place by the EC. A report on the scientific integration, and research undertaken to date was given by me (Project Director). Discussion of the 3rd Joint Programme of Activities was also undertaken. The Advisory Panel will meet again at the next Annual Scientific Meeting in Italy.

European Technology Platform on Global Animal Health (ETPGAH)

ETPGAH is an industry-led Technology Platform, which aims to:

Facilitate and accelerate the development and distribution of the most effective tools for controlling animal diseases of major importance to Europe and the rest of the world.

Full information and details of the vision, structure, agenda etc. of this Platform are given at <http://www.ifah.be/europe/euplatform/platform.htm>.

Med-Vet-Net, and our sister Network of Excellence, EPIZONE, are members of the Steering Committee of this organization. In addition, several of the Veterinary Institute Partners are represented in the Stakeholders Forum (Afssa, VLA, CIDC-Lelystat, UCM).

On 6th July 2006, I attended the Steering Committee meeting. On the basis of this meeting the following recommendation has been put to the Governing Board: *that Med-Vet-Net representation at all levels of ETPGAH governance be strengthened so that all opportunities for collaborative and co-operative submissions to FP7 are progressed. In particular, it is recommended that Med-Vet-Net representation on the Co-ordination Groups is actively encouraged to ensure that zoonotic diseases are sufficiently represented and that Med-Vet-Net interests are fully supported.*

If you, or your organization, are active members of ETPGAH, please ensure that information on research opportunities within this organization are fed back to Med-Vet-Net through me or your Co-ordinating Forum Representative.

Summer draws to an end: the second Annual Report is due and a new JPA starts

I hope that you are now rested, relaxed and ready to complete Year 2 and start a new Joint Programme of Activity.

On 31st August 2006 the second Annual Report is due. This year we have reports on all the completed Workpackages (WP5, 7–14) which have already been received. We will also include Annual Reports from all ongoing Workpackages (WP4, 6 and 21–31). **These reports should be under preparation by the WP Leaders now** – please ensure that you are fully consulted about your contributions to those Workpackages.

From September 1st 2006 the 3rd JPA starts. Most of the scientific research activities are well established for

this coming year with the start of Workpackages 21–31 in February 2006. In addition WP4 and WP6 will be completed within the next few months. One new Workpackage, WP32, will be started. This Workpackage was previously agreed for funding when available. WP32 will be lead by Kåre Mølbak (SSI) and his deputy Yvonne van Duynhoven (RIVM) and will investigate 'Public health surveillance for foodborne infections: Design of epidemiological studies and applying seroepidemiology to validate the surveillance pyramid'

The overarching Workpackages will continue with their existing remit. There will be some additional activities:

- WP1 will focus on completion of a Facilities Survey and on developing sustainability in particular by co-ordinating funds-raising activities through a Sustainability subcommittee.
- WP2 will actively develop the Knowledge Management aspects through further Special Interest Groups – particularly for Host–Microbe Interactions – and develop collaborations with other similar networks including a joint workshop with EADGENE.
- WP3 will expand external communications through a new glossy magazine.

If you have any ideas for future integration activities please let me know immediately. The formal delivery of the plans for JPA3 will be submitted to the EC in early October.

In all it looks like another busy year for us all. In the meantime, Claire and I would like to find time for some holiday!

Diane G Newell

We've moved!

The Communications Unit has just moved to new offices along with the Society for Applied Microbiology. Our new postal address is:

Society for Applied Microbiology
Bedford Heights
Manton Lane
Bedford MK41 7PH, UK

Phone, fax and email addresses remain the same.

New and emerging zoonoses

Evolution, emergence and neglect

Our Emerging and Neglected Zoonoses Groups are doing well, so it's time to give you an update.

We have had a lot of interest from people outside Med-Vet-Net, which demonstrates the breadth of interest in our work and in these neglected pathogens. To build on this we are going to hold a one-day workshop in Palermo, Sicily, on 3 November. At this we will review progress and lay the foundations for collaborations around arthropod-borne diseases. Talk to me and your Institute Representatives if you want to come.

A news-sheet was sent out to all those whose details we have, this included some websites of interest and a list of 2006 publications on emerging zoonoses. This news-sheet will be put on the website (<http://www.medvetnet.org/cms/templates/doc.php?id=80>)

Please visit <http://www.medvetnet.org/cms/templates/doc.php?id=87> and enter your details – at least if you are in the directory, then it gives others the chance to involve you. You will see that we have people with an interest in a wide range of diseases – most recently we have added leptospirosis to the list and, in addition, we are particularly keen to hear from people with an interest in arthropod-borne diseases.

Our success is entirely dependent on enthusiasts getting involved. This does not mean that you have to be a professor or have 130 year's experience! We want to give you the chance to contribute information to this directory and become part of a network of researchers who will be in a better position to bid for funding.

Kumar Sivam

Short-term scientific missions

Priority Setting of Foodborne and Zoonotic Pathogens – 19–21 July

As part of its Short-term Scientific Missions programme, Med-Vet-Net sponsored six students to attend the FSRC–Med-Vet-Net conference ‘Priority Setting of Foodborne and Zoonotic Pathogens’. The conference, hosted by BfR, Berlin, was attended by over 100 participants from Europe, USA, Canada, Australia and New Zealand, with expertise including epidemiology, risk research, microbiology and economics.

The meeting was organized jointly by Workpackage 23 – Prioritizing food-borne and zoonotic hazards at the EU level – and Workpackage 28 – Methods of attributing human zoonotic infection with different animals, food and environmental sources. The conference aimed to promote progress in food-safety priority setting by identifying key scientific issues and opportunities, and by fostering international scientific collaboration.

The sponsored participants were: Gerhard Falkenhorst and Anne Mazick, Statens Serum Institut (SSI), Denmark; Sebastien Lesterle, French Food Safety Agency (Afsa), France; Elisabetta Suffredini and Mara Paniconi, Italian

National Institute of Health (ISS), Italy; and Antonio Vieira, Danish Institute for Food and Veterinary Research (DFVF), Denmark.

Participants’ report of the conference

Aim of the visit

The aim of the short visit was to get an update on the problems and methodologies of priority setting for zoonotic foodborne diseases. In addition, the possibility of networking with some of the field’s experts was provided, allowing future scientific collaboration.

Programme

The conference was set in 11 modules:

- Overview of priority setting approaches
- Incidence and outcomes of gastroenteritis
- Incidence and outcomes of other non-enteric foodborne diseases
- Attribution I – Getting started
- Attribution II – Epidemiological approaches
- Attribution III – Sub-typing approaches
- Integrated disease burden and economic indicators
- Data integration
- Emerging infections
- Interactive session on research and data needs
- Interactive session on international collaboration

Results

We acquired an excellent overview of the importance and the problems of priority setting for food-borne pathogens. We gained insight into the various approaches and methods used for priority setting in food-borne infections. During in-depth discussions, we familiarized ourselves with the strengths and limitations of these methods and most important research needs.

Participation in the conference allowed us to find out more information about integrated measurements of disease burden which can be used in priority setting of food-borne and zoonotic pathogens and about the debates surrounding them. In addition, we identified gaps in knowledge, research needs and opportunities for collaboration in our research areas.

Conclusions

Priority setting is of major importance in public health practice. Specifically for food-borne zoonotic infections, priority setting is complicated by the multi-dimensional interactions between diverse pathogens, animal host factors, food production, food consumption patterns and human host factors. Many of the aspects and issues discussed during the conference will also cross-fertilize our approach to other areas of communicable diseases prevention and control.

The meeting achieved its objectives and we recommend that the participation of scientists working in Med-Vet-Net projects at this kind of conference should be encouraged.

Acknowledgements

Our thanks go to the many people involved in the organization of this conference, which succeeded in bringing together such a highly qualified group of experts.

**Gerhard Falkenhorst,
Sebastien Lesterle,
Anne Mazick,
Mara Paniconi,
Elisabetta Suffredini,
Antonio Vieira**



A press conference for the German media was held during the conference with [L–R] Mike Taylor, FSRC, Arie Havelaar, Med-Vet-Net (RIVM), and Andreas Hensel, BfR President, with translation assistance from Jurgen Kundke [far right] from BfR’s Press Office. Articles about the conference appeared in the German national press and in international publications.

Admin Bureau update

Finances

This August is the last month of the second year of activity of Med-Vet-Net. From 1st September we are entering the reporting period for the second annual report to be submitted to the EC. The Admin Bureau has sent all Financial Officers and their assistants, and Institute Representatives a reporting form and an EC model of audit certificate. The procedure is the same as last year, and the Admin Bureau will be available to answer any questions and to provide help and assistance. The Consortium is granted 45 days to complete the different reports and provide them to the EC. The first stage of receiving completed forms from partners will be from 1st to 15th September.

Webcams for WebEx Confencing

The inventory of needs for webcam equipment in the Workpackages has been completed. Each partner institute will acquire a number of webcams of a specific standard and distribute them to selected Workpackage members. Seventeen spare webcams will be held by the Project Management Unit at the VLA. These webcams will be available to any Med-Vet-Net member on an as-needed basis upon request.

Meetings in September Reviewer's meeting on 13th September

The EC Reviewer's meeting will take place at Afssa Ploufragan, France. It will gather the EC Representatives and two appointed reviewers, and representatives from the scientific and integration activities undertaken within the network: some of the Workpackage Leaders, Thematic Coordinators and Institute Representatives, the Project Manager, the Co-ordinator's Representative, Communications Director, and financial and administrative representatives.

Co-ordinating Forum meeting on 28th September

The next Co-ordinating Forum meeting will take place on 28th September at the Academy of Sciences in Budapest. It is jointly organized by the VMRI and the Administration Bureau. For information about organization and progress of the meeting, please visit: [https://www.medvetnet.org/membersite/templates/](https://www.medvetnet.org/membersite/templates/doc.php?id=91)

[doc.php?id=91](https://www.medvetnet.org/membersite/templates/doc.php?id=91) (for Med-Vet-Net members only).

Background documentation is available to Co-ordinating Forum members in their newly created Workspace area of the members' website.

Admin Bureau

External congress

2nd European Veterinary Immunology Workshop

Paris, France, 4–6 September 2006

This workshop will run sessions on the following topics:

- From innate to adaptive immunity
- Infection & immunity
- Clinical immunology / Immunopathology
- Immunological tools
- Immunomodulation
- Comparative immunology (fish, avian)
- Immunogenomics (Genomic approaches in veterinary immunology)
- Leukocyte subsets and functions - The role of dendritic cell subsets in initiating immune responses
- How many more?: Porcine CD8+ lymphocyte subsets and their functions
- Mucosal immunology
- Novel strategies of vaccine development (incl. probiotics etc.).

www.inra.fr/Internet/Projets/eviw/EN/index.php

2nd ASM Conference on *Salmonella*: From Pathogenesis to Therapeutics

Victoria, BC, Canada, 9–13 September 2006

Pre registration Deadline July 28, 2006

For additional information please visit the 2nd ASM Conference on *Salmonella* website: www.asm.org/Meetings/index.asp?bid=38711

COST 920 Meeting 'Future Challenges to Foodborne Zoonosis', 10–12 September 2006, Ploufragan, France
Sessions include:

- Methodological challenges to QMRA and the detection of emerging pathogens along the food chain.
- Emerging zoonoses – epidemiological aspects and impact assessment .
- Sustainable risk-based control of foodborne pathogens.

Further information available from the Conference Secretariat: genevieve.clement@zoopole.asso.fr;
Tel.: +33 2 9 67 86 130

7th International Congress on Veterinary Virology (ESVV) Faculdade de Medicina Veterinária in Lisbon, Portugal, 24–27 September 2006

The scientific programme will consist of plenary invited lectures by renowned scientists, oral presentations and poster sessions selected by the Scientific Committee.

For more information see: www.esvv2006.org/welcome.php

PRION2006

Strategies, Advances and Trends Towards Protection of Society
Centro Congressi Lingotto
Turin, Italy, 4–6 October 2006

The programme will include state-of-the-art lectures, oral presentations selected from contributed abstracts and poster sessions on the themes of NeuroPrion Network (prevention, control, treatment, management and risk analysis of prion diseases) and discussions focused on basic research. This event will provide a great opportunity for scientists from all over the world to share their findings and progress in an attractive and interesting setting.

See: www.newteam.it/PRION2006/

1st OIE International Conference – Use of GIS in Veterinary Activities
Silvi Marina (TE), Abruzzo (Italy)
8-11 October 2006

Conference objectives:

- To provide a forum for the exchange of the latest information and application of Geographic Information System (GIS) in veterinary activities
- To identify GIS tools for animal diseases and zoonoses monitoring
- To identify priority needs for the development of GIS tools in animal diseases and zoonoses surveillance
- To discuss a proposal for the implementation of a GIS portal for veterinary activities

For more information see; <http://www.gisconference.it/index.htm>

Nano and Microtechnology in the Food and Health Food Industries
NH Grand Hotel Krasnapolsky,
Amsterdam, Netherlands, 25–26 October 2006

The conference will have sessions on:

- Nano and micro technologies in food processing, monitoring,

labelling, storage, distribution and related issues

- Using nano and micro technologies to meet the challenges of food for nutrition and food for health
- New techniques and technologies for rapid safety testing, and prevention of food borne disease
- Safety and regulatory issues related to the use of new technology.

For more information see: www.nano.org.uk

CIAA

Brussels, Belgium, 26 and 27 October 2006

The Confederation of the Food and Drink Industries of the EU bi-annual conference 'Food for life..., meeting consumers' needs' will be held at the Hilton, Brussels.

For more information see: www.ciaaconggress.be

Emerging Diseases: Preparedness and Implementation Issues,

ENS Lyon, France, 5–8 November 2006

Organized by the International Association for Biologicals (IABs) in association with WHO, OIE and NIAID. The meeting aims at increasing preparedness against emerging or re-emerging diseases. The problems will be discussed in the framework of recent examples from human and veterinary medicines.

For more information see: www.bcm2006.org/

Society for Applied Microbiology Winter meeting 2007 – Food and Health

Royal Society, Carlton House Terrace, London, UK, 11 January 2007

Morning session:

- The Denver Russell Memorial Lecture "Naturally Occurring Microorganisms and their Resistance to Physical and Chemical Agents" Martin Favero, Advanced Sterilization Products, Johnson & Johnson, USA.
- What role can Government play in controlling hospital acquired infection? Prof Brian Duerden
- Food poisoning – what are the real risks? Bob Adak, CDSC, Health Protection Agency.

Afternoon parallel sessions:

- Session A. Hospital Acquired Infections
- Session B. Simmering issues in food safety

For more information see: www.sfam.org.uk or email: Rachel@sfam.org.uk

ISAAR 2007

Sixth International Symposium on Antimicrobial Agents and Resistance Raffles City Convention Centre, Singapore, March 7–9, 2007

Since 1997, ISAAR has been contributing to gather the relevant data and information on various issues of antimicrobial resistance and infectious diseases with regard to the updated epidemiology, mechanism of resistance, new diagnostic methods, therapeutic strategies, and preventive measures. ISAAR became the most representative international meeting on infectious diseases and antimicrobial agents/resistance in the Asian-Pacific region. ISAAR 2007 is hosted by the Asian-Pacific Research Foundation for Infectious Diseases (ARFID) and co-organized by Society of Infectious Diseases, Singapore and many international organizations and academic societies will support ISAAR 2007 as in 2005.

Please visit ISAAR 2007 official website www.isaar.org for more information.

Notices

Partnership proposal

Jan Kopecky, Assistant Professor at the The Biology Centre of the Academy of Sciences of the Czech Republic (ASCR), Institute of Parasitology, is looking for partners to submit the proposal to the 7th European Union Framework Programme.

He is currently conducting research into immunomodulatory effects of tick saliva, saliva-activated transmission of tick-borne pathogens. Resources include a fully equipped laboratory for research in immunology. ELISA, flow cytometry, immunofluorescence, cytotoxicity assays, tissue cultures, Real-Time PCR, molecular biology, BSL2, an animal house, facility for SCID and cytokine knock-out mice. Diagnostic tests performed include cytokine ELISA, flow cytometry analysis, immunofluorescence detection of TBE virus and *Borrelia spirochetes*, PCR and Real-Time PCR detection of *Borrelia* and TBE virus.

For more information email: jan@paru.cas.cz; Tel: +42-0387775468

Call for tender

Scientific and technical assistance relating to the collation, examination and reporting of data on the trends and sources of zoonoses, zoonotic agents, antimicrobial resistance and food-borne outbreaks

The European Food Safety Authority (EFSA) has published a call for tenders for scientific and technical assistance in the field of zoonoses data.

The purpose of the assignment is to provide scientific and technical assistance relating to the collation, analyses and compilation of data on zoonoses, zoonotic agents and antimicrobial resistance.

For further information, please contact:

European Food Safety Authority

Attn: Pia Makela

Largo Natale Palli 5/A

I-43100 Parma

Tel: +39 05 21 03 62 89

To see the full details of the call, please consult the following web address:

<http://ted.europa.eu/udl?REQUEST=Seek-Deliver&LANGUA GE=en&DOCID=168868-2006>

Remarks: The deadline for requesting tender documents is 27.9.2006.

The deadline for submitting tender documents is 11.10.2006.



Contact us

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Contributions and suggestions are welcome. Deadline for publication is 1st of each month.

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