

# **The Paratuberculosis Newsletter**

December 2008



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International Association for Paratuberculosis**

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**Notes from the Editor**

This is the fourth and final issue of the newsletter for 2008. I would like to express my sincerest gratitude to all contributors. During the past year, I have received many interesting articles. However, I still feel that it has not been enough ☺ I hope that much more will be submitted in 2009. So, I urge you to grab your computers, compile some data or ideas and send your contribution. I should stress that contributions need not only be about scientific studies, but can also include opinions, important past findings that have been “ignored” by other paratuberculosis fellows, or simply something you wish to highlight. The most important thing is that it should be of interest to other paratuberculosis people, and preferably be not too long.

Opinions given in the newsletter do not reflect those of the International Association on Paratuberculosis. Contributions are not peer-reviewed, and conclusions drawn rest solely on the authors and readers. Some of the work presented is work-in-progress, which should be considered when citing the studies.

Finally, I would like to wish you all a Happy New Year and a prosperous 2009.

Søren Saxmose Nielsen  
Editor

**DEADLINE FOR NEXT ISSUE: February 15, 2009.**

All contributions should be sent to [ssn@life.ku.dk](mailto:ssn@life.ku.dk)

## **1. IAP Business**

### **Message from the IAP President**

Dear IAP members,

As you know, Scott Wells and his group are working hard in the organization of the 10 ICP and they have already presented the blueprints of what the next colloquium will be to the Governing Board. I want to encourage all the members to prepare their material and to begin setting up the travel arrangements well in advance. Do not let the economic situation discourage you from attending our 10th Colloquium! I am sure the time since our meeting in Tsukuba has been fruitful and the new developments in paratuberculosis that will be presented there deserve the effort.

Related to the Colloquia too, I want to remind you that we already have an organizer, a place and a date for our 11th Colloquium: Richard Whittington, Sidney, 2011. However, the following meeting is not taken yet, even though there are some rumors that it could be somewhere in Europe. Please, ask your colleagues to compromise, get your institutions involved, and state your intentions. It will not be decided until the 10 ICP, but we need to know the options.

As you know the IAP has several types of awards that support the active participation of paratuberculosis researchers in these meetings and recognize the years of work on paratuberculosis to which they have made great contributions.

The calls with the specific details are published in this Newsletter issue. However, I would like to briefly remind you their goals and general specifications. The oldest one is the Richard Merkal Memorial award that was created by former President Rod Chiodini in 1992 and was first awarded at the Fourth Colloquium in Cambridge. It intends not only to remember one of the founders of the IAP and prominent figure in the field of paratuberculosis, but also to stimulate the involvement of young researchers in this field and to acknowledge the merits of their first steps in it. It is open to members of all countries and granted only on the basis of scientific merit of the contributions that the researcher is doing in the field of paratuberculosis. Please, group leaders and students, read the call and apply!

Another is the Helping Hand awards that make possible that scientists from lower per capita income countries have the opportunity of attending the colloquia and meet with researchers from other countries. This is the third edition of these awards that were originally devised by former President Michael Collins. All those that qualify, please notice that there are new rules, and apply within the deadlines.

Finally, I want to remind you that we did not use the Emeritus awards in the last Colloquium. These awards recognize the long years of dedication to paratuberculosis research and knowledge spread. Two members have already got it: Finn Saxegaard and M. Françoise Thorel. It seems that there will be candidates for the next edition as well. We will be glad to celebrate with them a lifetime dedicated to teaching us their rich experiences. Please, if you know other candidates just apply according to the lines specified in the call.

Best regards.  
Ramon A. Juste

**IAP member support and recognition awards**  
Call for the 10 ICP Edition

**Awards**

- Emeritus Awards
- Richard Merkal Memorial Fellowship
- Helping Hand Awards

**Emeritus Awards**

The status of Emeritus member of the IAP has the goal of acknowledging the merits of long standing members that have retired and that have made significant contributions to the goals of the Association. In order to continue fulfilling this objective for the 10 ICP, the IAP launches a call for nominations according to the following guidelines.

Award contents:

Up to 3 awards will be granted based on the number and quality of nominees.

Each award will include:

- 1) free full registration for the 10 ICP and following editions
- 2) free lifelong IAP membership
- 3) US\$1500.00 for travel expenses (payable on arrival at the 10ICP)
- 4) a certificate
- 5) a plate or plaque

Nominations must be written by an IAP member in good standing and should contain information on the nominees including the following points to be evaluated in order of decreasing importance:

Scientific merits	Qualitative (importance of knowledge generated on Map-related issues)
	Quantitative (number of papers produced, years working on paratuberculosis)
Responsibilities	National (positions held, advisory committees, researcher training, services provided, meetings organized, etc.)
	International (positions held, advisory committees, researcher training, services provided, meetings organized, etc.)
IAP involvement	National representation, offices held, colloquia organization, newsletter contributions, etc.
Other	Other merits not specified above

Nominations should be sent by e-mail to the Secretary-Treasurer of the IAP ([rsweeney@vet.upenn.edu](mailto:rsweeney@vet.upenn.edu)), and must include a letter containing all the information necessary for evaluation of the nominee as stated above. This document shall be an attached Word or Adobe pdf file blocked for changes. The IAP Member Support and Recognition Committee will evaluate the applications in the name of the IAP and its decisions are final.

Timetable:

Deadline for nominations: March 1, 2009  
Announcement of awards: April 15, 2009

### Richard Merkal Memorial Fellowship

The Association will provide funding for the participation of two graduate students to attend each Colloquium of the Association. Selection will be based on potential for future contributions to the field and scientific merit of a submitted abstract. Funding will include air fare, lodging, general registration and a per diem for meals. All applicants must be members of the Association or sponsored by a member of the Association. The fellowships will not be open to applicants having residence in same country in which the Colloquium is being held.

Award contents:

Two Fellowships will be granted.

Each fellowship will include:

- 1) free full registration for the 10 ICP
- 2) air fare, lodging and a *per diem* for meals
- 3) a certificate

Timetable:

Deadline for applications: March 1, 2009

Announcement of awards: April 15, 2009

Application for Richard Merkal Fellowship to attend the 10th International Colloquium on Paratuberculosis (10ICP) in Minneapolis, USA, August 10-13, 2009

Name:

Date of Birth:

Educational Qualification:

Publications in Paratuberculosis Research:

Abstract of intended presentation:

STATEMENT OF PURPOSE AND IMPORTANCE OF RESULTS TO BE PRESENTED

Applications should be sent by e-mail addressed to the Secretary-Treasurer of the IAP ([rsweeney@vet.upenn.edu](mailto:rsweeney@vet.upenn.edu)), and must include the completed forms provided in the call applications as an attached Word or Adobe pdf file blocked for changes. The IAP Member Support and Recognition Committee will evaluate the applications in the name of the IAP and its decisions are final.

### Helping Hand Fellowships

The Association, based on the availability of funds and as determined by the Governing Board, will provide funding for up to 10 individuals from lower income countries to participate in each Colloquium of The Association. Selection of these individuals will be based on the economic status of the individual's country of origin, a written statement of interest in paratuberculosis, potential for future contributions to the field, and scientific merit of a submitted abstract if one has been submitted (abstract submission is not required).

#### Program specifications:

Up to 10 awards will be granted based on the number and quality of applicants.

Each award will include:

- 1) free full registration for the 10 ICP
- 2) free IAP membership for 2009 and 2010
- 3) US\$1500.00 for travel expenses (payable in cash on arrival at the 10 ICP)
- 4) a certificate

#### Timetable:

Deadline for applications: April 1, 2009

Announcement of awards: May 15, 2009

Criteria (listed in order of decreasing importance):

1. Country of origin. Strong preference will given to applicants currently residing in countries not considered "high income" based on the website of the World Bank (<http://www.worldbank.org/data/countryclass/countryclass.html>). Applicants originally from countries not considered "high income" but currently residing in "high income" countries will be considered only in the case that there were not enough candidates from the first category.
2. Statement of purpose. The applicant must provide a written statement (in English) explaining their interest and experience in paratuberculosis, what they know of the paratuberculosis situation in their country, and why they would like to attend the 10ICP.
3. 10 ICP abstract. An abstract for a presentation at the 10 ICP concerning any aspect of paratuberculosis is highly desirable but not mandatory to qualify for this award.
4. Applicant status: Young researchers are encouraged to apply and will be prioritized. Senior candidates will be considered only if there are not enough qualified junior applicants.
5. Repeated awards. The number of times that the same person can receive an H&H award is 3 in order to reach a broader range of researchers. In case of tie, applicants that have already received an H&H award will have lower priority than those not having received any.
6. Number of awards per country. No more than 3 awards will go to the same country while there are applicants from countries with less than that number of applications.
7. Number of awards to the same group/institution. Priority will be given to awarding members of different groups. No more than 2 awards will go to the members of the same research group while there are applicants from other groups.

Application for Helping Hand Fellowship to attend the 10th International Colloquium on Paratuberculosis (10 ICP) in Minneapolis, USA, August 10-13, 2009

Name:

Country of origin:

Institution:

Date of Birth:

Educational Qualification:

Ph.D Thesis Title:

Area of Paratuberculosis Research:

Publications in Paratuberculosis Research:

STATEMENT OF PURPOSE

Applications should be sent by e-mail addressed to the Secretary-Treasurer of the IAP ([rsweeney@vet.upenn.edu](mailto:rsweeney@vet.upenn.edu)), and must include the filled in forms provided in the call as an attached Word or Adobe pdf file blocked for changes. The IAP Member Support and Recognition Committee will evaluate the applications in the name of the IAP and its decisions are final.

### 10<sup>th</sup> International Colloquium on Paratuberculosis

The 10th International Colloquium of the International Association for Paratuberculosis will take place on the University of Minnesota campus in Minneapolis, Minnesota, Sunday, August 9, through Friday, August 14, 2009. More details, including a tentative schedule, will be available from a link on the web site <http://www.cvm.umn.edu/outreach> by mid-December.

Dr. Scott Wells is the Colloquium chairman. Please contact him regarding general meeting questions or suggestions at [wells023@umn.edu](mailto:wells023@umn.edu).

Drs. John Bannantine and Srinand Sreevatsan serve as the Scientific Program co-chairs, and are forming a Scientific Program Committee to establish the 10 ICP scientific program. Logistical questions or concerns should be sent to the Veterinary Continuing Education Office at [vop@umn.edu](mailto:vop@umn.edu) or + 1 612 624 2268 / + 1 800 380 8636.

## **2. Short scientific reports**

### **Johne's disease control program in Israel**

Ori Koren

*Israel Dairy Board, National Service for udder health and milk quality, 38900 Caesaria Ind. Park, P.O.B 3553, Israel. e-mail: oriko@IS-D-B.co.il*

#### **Introduction**

The dairy industry in Israel consist 976 dairy farms with 110000 lactating cows and a production of 1170 Million liters of milk in 2007.

The Israeli control program was launched in September 2002 due to the listed reasons:

1. The assumption of high prevalence of the disease in Israeli dairy farms (over 50% of farms had clinical cases of Johne's).
2. Considerable economic loses as a result of the disease.
3. The possibility of a future proof of a connection with a human disease.

The only regulatory control on Johne's disease in Israel is that seropositive animals can not be moved from one farm to another. Testing for Johne's is obligatory before any trade of animals between farms.

The control program is voluntary and aimed at giving the farmers knowledge on farm prevalence and practical tools to implement for reducing in herd infection and herd prevalence as a result.

#### **Program management**

The program was designed by a committee consists 5 professional members, 2 from the National bacteriology laboratory, one from the field Veterinary services, one bovine practitioner, and one vet from the ministry of agriculture and rural development. To date some changes took place and the committee consist 2 vets coming from the national service for udder health and milk quality as well. The Program was introduced and accepted by a steering committee consisting of members from the IDB (Israel Dairy Board), National Veterinary Services, National Laboratory, Farmer's representatives, Bovine Practitioner's representative, and Ministry of agriculture. The program is funded by the IDB.

#### **Program design**

All farmers may address the field coordinator directly or through their veterinary clinician.

Testing – all lactating cows are tested by milk or serum Elisa (dry cows by serum Elisa) once a year.

RA (Risk assessment) done on the farm including all risk points for infection. This RA will be done in the next year to follow improvement in management practices.

A management program is built for each farm in accordance to herd prevalence and risk points which were evaluated.

Fecal cultures are taken from all seropositive or doubtful cows in order to classify the "risk value" of each animal. During 2008 the tests are done by real time PCR instead of culture.

Diagnosis and testing clinical cases are done by the local vets and records are kept by the program field coordinator.

The decisions about culling positive cows are taken by the farmers only. Tests results, herd prevalence and other parameters help in taking the write decisions.

Herds which are found negative or with prevalence lower than 2% twice in a row may test again after 3 years. Others will be tested once a year.

**Herd classification**

In the first 2 years herds were classified to 8 categories in accordance with herd prevalence, fecal culture results and clinical cases diagnosed. Due to many changes in herd's classification and farmer's confusion, this method is not used any more.

**Education**

The knowledge among farmers about Johne's is variable. Some had the basic ability to identify clinically sick animals, bring to the local vet for diagnosis and cull them immediately while others would keep those for a long time without understanding the circumstances. Since the program was initiated the farmers are exposed to the basic management practices, diagnostic testing and economic risks of the disease. The awareness among farmers is increasing and the decision to implement the management practices is done with better knowledge and understanding.

**Funding**

The program is funded by the IDB and by the farmers. For the first herd test the farmers are paying 5 NIS (apr. 1 Euro) for each cow tested by serology. All other costs are covered by the IDB. The next testing is subsidized again only if the management program is implemented by the farmer. If not, the farmer is paying full price for testing. The budget for the program in 2008 is 240K NIS (apr. 50K Euro) coming from the IDB.

**Participation**

Till December 2007 230 (24%) farms had joined the program. Implementation of the management practices is time consuming but most of the farms are ready before the second testing. The amount of farmers going out of the program is negligible and most farmers show positive attitude even though results takes time. Most of the farms involved are large scale cooperative farms.

**Test results**

In 2007 230 herds were tested, some for the 1<sup>st</sup> time and the others 2<sup>nd</sup> or more as a routine. Approximately 26000 Elisa tests and 750 fecal cultures were done. 18% of the herds were found to be negative. 63% had low to medium prevalence and the rest 19% were heavily infected. similar picture was seen in 2005 and 2006. 2.6% of cows tested during 2007 were found seropositive.

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**Strain-specific sensitivity estimates of  
*Mycobacterium avium* subsp. *paratuberculosis* culture in Greek sheep and goats**

M. Florou<sup>1</sup>, L. Leontides<sup>1\*</sup>, P. Kostoulas<sup>1</sup>, C. Billinis<sup>2</sup>, M. Sofia<sup>2</sup>

<sup>1</sup>Laboratory of Epidemiology, Biostatistics and Animal Health Economics, and

<sup>2</sup>Laboratory of Microbiology and Parasitology, School of Veterinary Medicine, University of Thessaly, Karditsa, Greece

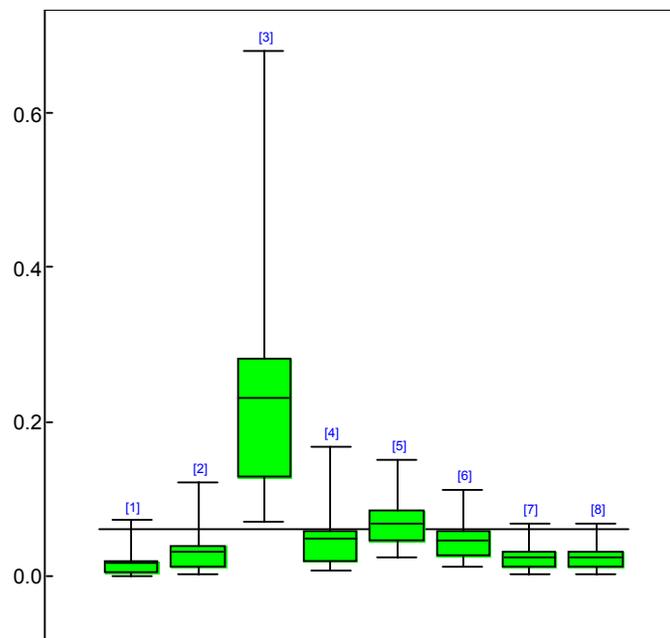
[\(To appear in Zoonoses and Public Health\)](#)

**Importance of the paper's findings**

- The sensitivity of *Mycobacterium avium* subsp. *paratuberculosis* culture on the most popular egg-based solid medium, Herrold's egg-yolk, depends on the strain type (cattle or sheep).
- It is higher for cattle than sheep strains.

- The cattle-type sensitivity is higher on Herold's egg-yolk than on Lowenstein-Jensen medium.

The requirements for isolation of *Mycobacterium avium* subsp. *paratuberculosis* (Map) may be related to the strain-type [sheep (S)- or cattle (C)- type] and not to the host. The objective of this paper was to estimate and compare strain-, and biologic sample (faeces or pooled-tissue) - specific sensitivities (Ses) of two solid culture media, Herrold's egg yolk medium (HEYM) and Lowenstein-Jensen (LJ), for Map isolation from Greek dairy sheep and goats. From 400 faecal samples collected from subclinically infected sheep and goats of 4 flocks and from 214 pooled-tissue samples (142 from sheep and 72 from goats) collected, at the abattoir, from >1 year-old, routinely slaughtered animals, with gross pathology suggestive of paratuberculosis, we isolated 34 Map strains. Of those, by the IS1311 PCR, 18 were categorized into the C- and 9 into the S-type; 7 were not typed. We used a Bayesian approach to estimate the strain-specific Ses (Fig. 1).  $Se_{HEYM-C-faecal} = 17\%$  (95% credible interval (CrI): 7, 40) was higher than  $Se_{HEYM-S-faecal} = 2\%$  (0.3, 11). Also,  $Se_{HEYM-C-faecal}$  was higher than  $Se_{LJ-C-faecal} = 4\%$  (1, 12). In pooled-tissue samples the strain-specific Ses did not differ between the two media.



**Fig. 1.** Posterior median and 95% CrIs of Ses. Subcategories are defined by sample type (faeces or pooled-tissues), strain (S or C) and medium (HEYM or LJ). Identity numbers denote different subcategories\*. Boxes represent inter-quartile ranges and the solid black line at the approximate center of each box is the median; the arms of each box extend to cover the central 95% of the marginal posterior distribution with their ends corresponding to 2.5<sup>th</sup> and 97.5<sup>th</sup> credible quartiles.

\*[1]: faeces, S, HEYM; [2]: faeces, S, LJ; [3]: faeces, C, HEYM; [4]: faeces, C, LJ; [5]: pooled tissues, S, HEYM; [6]: pooled tissues, S, LJ; [7]: pooled tissues, C, HEYM; [8]: pooled tissues, C, LJ.

**Dutch dairy herds required to participate in paratuberculosis programme**

M.F. Weber and P. Franken

*GD Animal Health Service, PO box 9, 7400 AA Deventer, The Netherlands.*

Recently, the Dutch dairy industries have taken the lead to increase the uptake of the milk quality assurance programme (MQAP) for paratuberculosis in Dutch dairy herds. The result of their joint efforts is that approximately 75% of the Dutch dairy herds have voluntarily entered this programme of GD Animal Health Service (Weber, 2008).

The aim of the MQAP is to reduce the concentration of *Mycobacterium avium* subsp. paratuberculosis (Map) in milk delivered to the milk factories (van Roermund et al., 2005; Weber et al., 2008).

Importantly, the MQAP promotes preventive management measures to reduce the risk of introduction of Map or spread of Map in participating herds. On the herd-level, these preventive measures increase the probability to obtain and maintain a preferred herd status. On the national level, the preventive measures taken by individual farmers increase the milk quality of the national dairy herd and are likely to reduce the between-herd transmission of Map. For education of farmers, a practical management tool and checklist with risk factors for paratuberculosis have been developed (van Weering et al., 2005).

Herds participating in the MQAP are assigned a herd status based on the results of herd examinations by individual milk or serum ELISA. A far majority of farmers prefer testing individual milk samples. A highly specific ELISA is used and positive ELISA results can be confirmed by faecal culture. Test-negative herds are assigned status 'A'. Test-positive herds are assigned status 'B' (if all test-positive cattle have been removed from the herd) or status 'C' (if any test-positive cattle are still in the herd; (Weber and van Schaik, 2007).

The Dutch dairy industries have now decided that by 2010 all Dutch dairy herds delivering milk to their factories are required to participate in a paratuberculosis programme of GD Animal Health Service. Moreover, the aim is that from January 2011 all dairy herds have at least status 'A' or 'B'.

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## Certification of Health for Dairy Cows

Gilles R.G. Monif

*University of Florida College of Veterinary Medicine*

Central in current herd management schemes for control of bovine infection due to *Mycobacterium avium* subspecies *paratuberculosis* (Map) is identification and removal of infected animals from the herd. Introduction of Map infection is postulated to be the result of purchase of infected animals (Kennedy et al., 2001). As herd size increases through purchases of additional animals, the risk of Map infection/disease within the herd reputedly increases (Collins et al., 1994; Wells and Wagner, 2000).

Quality of merchandise issues for live stock are traditionally addressed through the process of health certification of the animal. In the United States, revisions to part 71 and 80 of the Code of Federal Regulations (CFR) restricts the interstate movement of Map-infected animals except to recognized slaughter establishment (USDA, 2000).

The Wisconsin implied warranty law stipulates that cattle to be sold are guaranteed to be free of Map-infection unless sellers provide a written retraction of this guarantee at the time of sale (Sockett, 1996). This type of product warranty for cattle varies from state to state. The Nebraska law 004.03 requires that the Certificate of Veterinary Inspection be signed by "an accredited veterinarian who acknowledges the apparent absence of any infection, contagious or otherwise transmissible disease". The word apparent creates a grey zone by which infected animal can be introduced into a Nebraska herd. Other states use language in the health certificate that can be interpreted as minimizing the requirement that the animal be free of underlying infectious diseases. The reporting of Johne's disease to state animal health officials and restriction of intra-state movement of infected animals varies from state to state.

Veterinarians are potentially put into a position of professional liability when signing a health certificate for an individual animal obtained from a herd of unknown or known Johne's herd disease status.

In a partial attempt to establish minimum national standards for bovine product warranty, the United States Department of Agriculture has introduced and advocated implementation of the U.S. Voluntary Johne's Disease Herd Status Program (Anon., 2000b; 2000c; 2000d; 2005). The U.S. Voluntary Johne's Disease Herd Status Program provides guidelines for risk assessment and identifies management practices that, if enforced, more likely than not, would reduce the prevalence of infection. The primary problem with the program is the word voluntary. By non-participation, a dairy producer diminishes potential liability and the loss of revenues resulting from the costs of testing and pre-mature removal of productive animals. A less significant problem is that for a participating herd attaining the program's minimal Level 1 status, the theorized probability of the herd being non-infected is approximately 70%. Wells et al. have contended that the testing strategy used for Level 1 may not identify the majority of herds with low prevalence of infection (Wells et al., 2002).

Unless otherwise clearly stated, Certificates of Health for dairy cows need to have the words, buyer beware, added.

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### **3. Paratuberculosis Calendar**

*Please report to Søren Nielsen (ssn@life.ku.dk) should you have knowledge of any events that you find relevant to include in the calendar.*

#### 2009

August 9-13, 2009. 10<sup>th</sup> International Colloquium on Paratuberculosis, St. Paul/ Minneapolis, Minnesota, USA.

August 10-14, 2009. 12<sup>th</sup> International Symposium on Veterinary Epidemiology and Economics. Durban, South Africa (<http://www.isvee12.co.za>).

August 25-28, 2009. *M. bovis* V Conference, Wellington, New Zealand (<http://www.mbovisconference.org/>)

#### **4. List of Recent Publications**

- Alvarez J, de Juan L, Bezos J, Romero B, Sáez JL, Marqués S, Domínguez C, Mínguez O, Fernández-Mardomingo B, Mateos A, Domínguez L, Aranaz A, 2008. Effect of paratuberculosis on the diagnosis of bovine tuberculosis in a cattle herd with a mixed infection using interferon-gamma detection assay. *Vet Microbiol.* 2008 Sep 21. [Epub ahead of print]
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