

9th International Colloquium on Paratuberculosis 2007

**Tsukuba, Japan
28 October - 2 November 2007**

ISBN: 978-1-61567-335-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2007) by the International Association for Paratuberculosis
All rights reserved.

Printed by Curran Associates, Inc. (2009)

For permission requests, please contact the International Association for Paratuberculosis
at the address below.

International Association for Paratuberculosis
2015 Linden Drive
Madison, Wisconsin 53706-1102

Phone: (608) 262-8457
Fax: (608) 265-6463

www.paratuberculosis.org

TABLE OF CONTENTS

Developments in Molecular Biology

| | |
|---|----|
| Characterization of Mycobacterium Avium Subsp. Paratuberculosis Isolates by Large Sequence Polymorphisms (ISP) Detection and Hsp65 Sequencing | 1 |
| <i>Julio Alvarez, Elena Castellanos, Lucia de Juan, Beatriz Romero, Javier Bezos, Sabrina Rodríguez, Alicia Aranz, Ana Mateos, Lucas Domínguez</i> | |
| Use of Single Nucleotide Polymorphisms in INH-a Gene to Characterize Mycobacterium Avium Subspecies Paratuberculosis into Types I, II, and III | 4 |
| <i>Elena Castellanos, Julio Alvarez, Alicia Aranz, Beatriz Romero, Lucia de Juan, Javier Bezos, Sabrina Rodríguez, Karen Stevenson, Ana Mateos, Lucas Domínguez</i> | |
| Amplified Fragment Length Polymorphism to Investigate Map in Italy | 7 |
| <i>Chiara Gorni, Roberta Taddei, Norma Arrigoni, John Lewis Williams</i> | |
| Short Sequence Repeat Typing of Indian Mycobacterium Avium Subspecies Paratuberculosis 'Bison Type' Isolates | 9 |
| <i>Jagdeep Singh Sohal, Swati Subodh, Shoor Vir Singh, K Narayanasamy, Pravin Kumar Singh, Ajay Vir Singh, Neelam Sheoran, Komal Singh Sandhu</i> | |
| Molecular Characterisation of Indian Strains of Mycobacterium Avium Subspecies Paratuberculosis by Pulsed-field Gel Electrophoresis | 12 |
| <i>Bhupendra Nath Tripathi, Karen Stevenson</i> | |

Pathogenesis and Immunology

| | |
|---|----|
| Modulation of Cytokine Expression and Lymphocyte Subsets During the Periparturient Period in Dairy Cows Naturally Infected with Mycobacterium Avium Subsp. Paratuberculosis | 16 |
| <i>Elizabeth L Karcher, Don C Beitz, Judy R Stabel</i> | |
| Association Between Two Polymorphisms in the Bovine Card15/nod2 Gene and Paratuberculosis Infection in Florida Dairy and Beef Cattle | 20 |
| <i>Pablo J Pinedo, Claus D Buergetl, Ronling Wu, Art Donovan, Elliot Williams, Pedro G Melendez, Laurence Morel, Owen Rae</i> | |
| Proteomic Evaluation of Sera and Milk from Healthy and Paratuberculosis Infected Cows | 21 |
| <i>Paola Roncada, Francesca Deriu, Alessio Soggiu, Norma Arrigoni, Luigi Bonizzi</i> | |
| Innate Resistance of Mice to M. Avium Subsp. Paratuberculosis is Controlled by Slc11a1 | 25 |
| <i>Valérie Rosseels, Virginie Roupie, Virginie Piersoël, Denise K Zinniel, Raúl G Barletta, Kris Huygen</i> | |
| Genetic Association Between Bovine Nramp1 and Card15 Genes and infection by M. A. Paratuberculosis | 29 |
| <i>Otsanda Ruiz, Carmen Manzano, Mikel Iriondo, Joseba Garrido, Ramon A Juste, Andone Estonba</i> | |
| Pathogenesis of Mycobacterium Avium Subsp. Paratuberculosis in Neonatal Calves After Oral or Intraperitoneal Experimental Infection | 33 |
| <i>Judith R Stabel, Mitchell Palmer, Suelee Robbe-Austerman, Beth Harris</i> | |
| Immunologic Responses to Mycobacterium Avium Subsp. Paratuberculosis in Neonatal Calves After Oral or Intraperitoneal Experimental Infection | 37 |
| <i>Judith R Stabel, Suelee Robbe-Austerman, William C Davis</i> | |
| Presence and Characterization of Mycobacterium Avium Subspecies Paratuberculosis From Vaginal Secretions of Post-parturient Farm Goats, Using Culture, Is900 Pcr and ELISA Kit | 41 |
| <i>Shoor Vir Singh, Jyoti Vohra, Ajay Vir Singh, Pravin K Singh, Jagdeep Singh Sohal</i> | |
| Screening of Tissues to Estimate Comparative Distribution of Mycobacterium Avium Subspecies Paratuberculosis in the Target and Non-target Organs of Goats and Sheep Population in India, Using Culture and Pcr | 45 |
| <i>Jyoti Vohra, Shoor Vir Singh, Ajay Vir Singh, Pravin K Singh, Jagdeep Singh Sohal</i> | |

Diagnostic Methods and Quality Assurance

| | |
|--|-----|
| Diagnosis of Bovine Paratuberculosis: Sensitivity of a Commercial ELISA Test on Bovine Bulk Milk | 49 |
| <i>Norma Arrigoni, Giuliana Cammi, Ilaria Losini, Roberta Taddei, Marco Tamba, Gianluca Belletti</i> | |
| Nested Polymerase Chain Reaction for Detection of Mycobacterium Avium Subspecies Paratuberculosis in Bovine Allantoic Fluid and Fetuses | 51 |
| <i>Claus Dietmar Buergelt, Elliot Joseph Williams, J H Decker, Gilles R Monif, Pablo J Pinedo</i> | |
| Paratuberculosis in Sheep: Diagnostic Methods and Genetic Susceptibility | 54 |
| <i>Luigi de Grossi, Eugenio Lillini, Bruno de Sanctis, Gianluca Scorsino, Alessio Valentini, Lorraine Pariset, Erminia Sezzi</i> | |
| Cross-pooled Faecal Culture and individual Faecal PCR For Paratuberculosis Herd Level Monitoring | 58 |
| <i>Elena Molina, Iker Sevilla, Maria V Geijo, Joseba M Garrido, Jose Mari Plazaola, Ramon A Juste</i> | |
| Evaluation of Serological Diagnostic Capacity For Paratuberculosis Using Proficiency Testing By Interlaboratory Comparison At the Level of Veterinary Laboratories From Romania in 2006 | 62 |
| <i>Petriceanu Gela, Ruxandra Alina Radulescu, Adriana Ragalie, Emanuela Gutu, Rodica Niculina Tomsuic</i> | |
| Can the Detection Rate of Faecal Shedders of Map Be Increased By Optimising the Time Point of Faecal Sampling? | 67 |
| <i>Franziska Gierke, Mario Ziller, Heike Köhler</i> | |
| A Cultivation Ring Trail For Mycobacterium Avium Subsp. Paratuberculosis in Three Certified Laboratories | 71 |
| <i>Steen Bjørck Giese</i> | |
| Dairy Herd Prevalence of Mycobacterium Avium Subsp. Paratuberculosis in Bulk-tank Milk Samples Obtained From Three Regions in Fars Province, Iran By Nested PCR | 73 |
| <i>Masoud Haghkhah, Maryam Ansari Lari, Amir Mansour Novin Baherani, Ayatollah Bahrami</i> | |
| The Use of Mpb70 and Mpb83 to Distinguish Between Bovine Tuberculosis (TB) and Paratuberculosis (PTB) | 77 |
| <i>Carla Dray Marassi, Jim McNair, John Pollock, Paula Ristow, Leila Fonseca, Walter Oelemann, Walter Lilenbaum</i> | |
| An Alternative For the PreadSORption Step in the Paratuberculosis Serodiagnosis: Mycobacterium Fortuitum | 81 |
| <i>Carla Dray Marassi, Marlei Silva, Walter Oelemann, Leila Fonseca, Paula Ristow, Walter Lilenbaum</i> | |
| Association Between Milk Antibody and Interferon-gamma (IFN-γ) Responses in Cattle From Mycobacterium Avium Subsp. Paratuberculosis Infected Herds | 84 |
| <i>Heidi Mikkelsen, Søren Saxmose Nielsen, Gregers Jungersen</i> | |
| Evaluation of Different Organism Based Methods For the Detection and Identification of Mycobacterium Avium Subspecies Paratuberculosis From Bovine Feces | 86 |
| <i>Janet Barker Payeur, Randal T Capsel</i> | |
| Single Colony PCR' Using Physical Method of DNA Recovery for the Characterization of Tiny Colonies of Mycobacterium Avium Subspecies Paratuberculosis | 90 |
| <i>Shoor Vir Singh, Pravin K Singh, Ajay Vir Singh, Jagdep Singh Sohal, Swati Subodh, K Narayanasamy</i> | |
| Comparison of Four Methods of Dna Isolation From Intestinal Tissues of Goats Infected with Mycobacterium Avium Subspecies Paratuberculosis and Evaluation of the Sensitivity of PCR with Respect to Tissues Culture | 94 |
| <i>Pravin K Singh, Ajay Vir Singh, Jagdeep Singh Sohal, Shoor Vir Singh</i> | |
| Evaluation of indigenous ELISA Kit and Status of Mycobacterium Avium Subsp. Paratuberculosis Infection in Farm and Farmers' Goats in India with Respect to Screening of Target Tissues by Culture and PCR | 98 |
| <i>Pravin Kumar Singh, Shoor Vir Singh, Ajay Vir Singh, Jagdeep Singh Sohal</i> | |
| Real-time Pcr Testing of Pooled Fecal Samples: Comparison to Heym Culture | 101 |
| <i>Raymond W Sweeney, Robert H Whitlock, Beverly L Mangold, Susan McAdams, Terry L Fyock, Ynte Schukken, Julie M Smith, J Van Kessel, Ernest Hovingh, J Karns, David Wolfgang, Todd E Johnson</i> | |
| In Vitro Effect of Antibiotics on Mycobacterium Avium Subspecies Paratuberculosis in Herrold's Medium | 104 |
| <i>Gabriel Eduardo Traveria, Maria Fiorella Alvarado Pinedo, Luis Maria Peralta, Laura Cristina Bartoletti, Martin Quinteros</i> | |
| Interference of Intradermal Tuberculin Tests On the Serodiagnosis of Paratuberculosis in Cattle | 108 |
| <i>Renato Vargas, Carla Dray Marassi, Walter Martin Oelemann, Walter Lilenbaum</i> | |
| Diagnostic-test Characteristics of Microscopic Examination of Zn-stained Faecal Smears and ELISA in Cattle Suspected of Clinical Paratuberculosis | 111 |
| <i>Maarten F Weber, Jacobus Verhoeff, Gerdien van Schaik, Kees van Maanen</i> | |

| | |
|---|-----|
| Pathology of Ovine Paratuberculosis in the North East of Portugal. a Comparison of Histopathology, Faeces and Tissue Culture, Polymerase Chain Reaction in Blood, Faeces and Tissues, and Serology | 115 |
| <i>Ana Claudia Coelho, Maria Lurdes Pinto, Adosinda Maria Coelho, Iker Sevilla, Joseba Garrido, Jorge Rodrigues, Ramon Juste</i> | |

Epidemiology and Control Strategies

| | |
|---|-----|
| Bulk Milk Contamination by Mycobacterium Avium Subsp. Paratuberculosis and Related Risk Factors | 117 |
| <i>Norma Arrigoni, Giuliana Cammi, Giorgio Galletti, Ilaria Losini, Roberta Taddei, Marco Tamba, Gianluca Belletti</i> | |
| Survey On Paratuberculosis Prevalence in Dairy Herds of the Lombardia Region (Italy) | 120 |
| <i>Norma Arrigoni, Giuliana Cammi, Ilaria Losini, Roberta Taddei, Marco Tamba, Gianluca Belletti</i> | |
| Results From Paratuberculosis Surveillance Under Government Regulation in Austria | 122 |
| <i>Michael Duenser, Johannes Lorenz Khol, Michaela Altmann, Eva Geisbauer, Johann Damoser, Walter Baumgartner</i> | |
| Investigation of Paratuberculosis Status Based on Comparative Analysis of Serology and Faecal Culture in a Dairy Herd in Thuringia (Germany) | 124 |
| <i>Miriam Nannette Ebert, Sarvan Kumar Munjal, Karsten Donat, Wolfram Siebert, Ute Schau</i> | |
| Preliminary Evaluation of a Field Trial on the Use of Vaccination in Dairy Cattle Farms with Paratuberculosis | 128 |
| <i>Joseba M Garrido, Maria V Geijo, Elena Molina, Iker Sevilla, Jose Mari Plazaola, Eugenia Puentes, Ramon A Juste</i> | |
| Paratuberculosis Vaccination in Cattle: Culling Follow-up | 132 |
| <i>Maria V Geijo, Joseba M Garrido, Elena Molina, Iker Sevilla, Jose Mari Plazaola, Eugenia Puentes, Ramon A Juste</i> | |
| New Cases of Johne's Disease and Map Infection in Two Dairy Herds From the States of Pernambuco and Rio De Janeiro, Brazil | 136 |
| <i>Marcos José Pereira Gomes, Marilene Farias Brito, Reinaldo Aparecido Mota, Elise Yamasaki, Alexandre Galvão, Janice Seixas, Bernardo Stefano Bercht, Gustavo Geraldo Medina Snel, Gregory Duarte Juffo, José Artur Bogo Chies</i> | |
| Effects of Infection By Mycobacterium Avium Paratuberculosis (map) On Fertility of Dairy Cows. | 139 |
| <i>Clara Marcé, François Beaudeau, Nathalie Bareille, Henri Seegers, Christine Fourichon</i> | |
| Real Time Estimates of Prevalence of Bovine Johne's Disease in Dairy Cattle Herds in Mathura Region of North India Using Fecal Culture and indigenous ELISA Kit and Characterization of Mycobacterium Avium Subspecies Paratuberculosis By Is900 Pcr | 144 |
| <i>Pawan Mishra, Shoor Vir Singh, Ashok K Bhatiya, Pravin K Singh, Ajay Vir Singh, Jagdeep Singh Sohal</i> | |
| Development of 'Colostrum Pasteurizer' | 148 |
| <i>Fumitoshi Saito, Yuji Nakaoka, Kensei Kogishi, Kazunori Kato, Takafumi Wakamatsu, Yuji Mikami</i> | |
| Evaluation of indigenous ELISA Kit with Tissue Culture and PCR For the Estimation of Ovine Johne's Disease (OJD) in Farmer's Flocks in India. | 152 |
| <i>Pravin K Singh, Shoor Vir Singh, Ajay Vir Singh, Jagdeep Singh Sohal</i> | |
| An Outbreak of Johne's Disease in a Newly Established Commercial Goat Farm Leading to Heavy Losses and Closure | 156 |
| <i>Shoor Vir Singh, Ajay Vir Singh, Pravin K Singh, Jagdeep Singh Sohal</i> | |
| Recovery in Advanced Clinical Cases of Johne's Disease in Naturally Infected Goats Using A Highly Efficacious indigenous Vaccine Made From Novel indian Strain of Mycobacterium Avium Subspecies Paratuberculosis 'Bison Type' | 160 |
| <i>Shoor Vir Singh, Pravin K Singh, Ajay Vir Singh, Jagdeep Singh Sohal</i> | |
| The Effects of Control Measures For Paratuberculosis On Sero-prevalence and Clinical Disease in Northern Italian Dairy Herds | 165 |
| <i>Simone Taddei, Ezio Bottarelli, Francesca Ghidini, Chiara Piancastelli, Sandro Cavarani</i> | |
| Seroprevalence of Paratuberculosis in Selected Population of Ruminants in India | 170 |
| <i>Bhupendra Nath Tripathi, Ganesh G Sonawane, S K Munjal, Raj B Bind, D Gradinaru, S C Dubey, S Tripathi, D Mondal, O. P. Paliwal, Nem Singh</i> | |
| Paratuberculosis in Sheep From Serra Da Estrela Region, Portugal | 174 |
| <i>Helena Vala, Carla Santos, Fernando Esteves, Teresa Albuquerque, Augusto Afonso, Ana Botelho, Carlos Seixas, A Amaral, Alice Amado</i> | |
| Prevalence of Mycobacterium Avium Subsp. Paratuberculosis By PCR in Blood Sheep in the North East of Portugal | 178 |
| <i>Ana Claudia Coelho, Maria Lurdes Pinto, Adosinda Maria Coelho, Iker Sevilla, Joseba Garrido, Jorge Rodrigues, Ramon Juste</i> | |

| | |
|---|-----|
| Factors Associated with Mycobacterium Avium Subsp. Paratuberculosis Seroprevalence in Sheep in Trás-os-montes E Alto Douro, Portugal | 181 |
| <i>Ana Claudia Coelho, Maria Lurdes Pinto, Susana Silva, Adosinda Maria Coelho, Alfredo Aires, Joseba Garrido, Jorge Rodrigues, Ramon Juste</i> | |

National Control Programs

| | |
|--|-----|
| Industry and Government Partnerships - An Alternate Model For National Disease Control Programs | 185 |
| <i>Lorna Citer, Nicholas Keatinge, Kennedy David</i> | |
| Paratuberculosis Diagnosis and Control in Thailand | 188 |
| <i>Monaya Ekgatit, Suree Thammasart, Reka Kanitpun, Surapong Wongkasemjit, Chokchai Nokdhes, Chira Kongkrong, Watcharachai Narongsak, Utis Trenuntawan, Nittaya Srikawkheaw, Masaharu Kanameda</i> | |
| A New Approach in the Compulsory Fight Against Paratuberculosis - Eradication of Clinical Cases | 193 |
| <i>Johannes Lorenz Khol, Michael Dünser, Johann Damoser, Walter Baumgartner</i> | |
| Present Approach to Johne's Disease Control in Japan: Features and Incidence | 196 |
| <i>Sota Kobayashi, T Tsutsui, T Takehisa Yamamoto, A Nishiguchi</i> | |
| Abattoir Surveillance For Ovine Johnes Disease (OJD) in New South Wales | 199 |
| <i>Ian Joseph Links, Laurence Denholm, Lloyd Kingham, Marilyn Evers</i> | |
| A Comparison of Vaccination For Ovine Johnes Disease (OJD) and Prevalence of Lesions Detected By Abattoir Monitoring in New South Wales (NSW) | 203 |
| <i>Ian Joseph Links, Laurence Denholm, Lloyd Kingham, Marilyn Evers</i> | |
| Cattle Movements in to and Out of Johnes's Infected Suckler Herds in Ireland | 207 |
| <i>Peter C Mallowney, Damien Barrett, John Egan, Richie Fallon, Martin Blake, Margaret Good</i> | |
| Experimental Control Program For Paratuberculosis in Dairy Cattle in the Veneto Region | 211 |
| <i>Nicola Pozzato, Elisabetta Stefani, Massimo Bottazzari, Nicola Benini, Fabrizio Cestaro, Gastone Passarini, Gaddo Vicenzoni</i> | |
| Study Design and Application of a Paratuberculosis Assurance Program in Brown Breeders' Herds in the Italian Central Alps | 213 |
| <i>Nicola Pozzato, Marcella Paoli, Elisabetta Stefani, Luca Busani, Giovanni Farina, Claudio Valorz, Gaddo Vicenzoni</i> | |
| Control of Paratuberculosis in Sweden | 215 |
| <i>Susanna Sternberg Lewerin, Estelle Ågren, Jenny Frössling, Göran Bölska, Andrea Holmström, Ann Lindberg, Elöd Szanto, Diana Viske</i> | |
| Results of the Dutch Bulk Milk Quality Assurance Programme for Paratuberculosis | 220 |
| <i>Maarten F Weber, Gerdien van Schaik</i> | |

Public Health

| | |
|--|-----|
| Map in Retail Pasteurised Cows' Milk. First Report in Italy | 224 |
| <i>Eugenio Lillini, Fabrizio Gamberale, Giuseppe Bitonti, Luigi De Grossi, Antonella Cersini</i> | |
| Sero-prevalence of Mycobacterium Avium Subsp. Paratuberculosis in Spontaneous Cases of Abortions in Human Beings in North India Using Native and Commercial Protoplasmic Antigens in Indigenous ELISA Kit | 227 |
| <i>Shoor Vir Singh, Pravin K Singh, Ajay Vir Singh, Jagdeep Singh Sohal, SVS Malik</i> | |
| Proposed International Guidelines for Experimental Challenge Models for Johne's Disease | 231 |
| <i>Raymond Sweeney, Murray Hines, Judith Stabel</i> | |
| Author Index | |