ISSUE 1 MARCH 2025

The Paratuberculosis Newsletter

The official publication of the International Association for Paratuberculosis

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Note from the Editor

Dear IAP members,

It is with great pleasure that we re-establish communication with the IAP membership through the Paratuberculosis Newsletter, beginning with this first issue in March 2025. Our aim is to reinstate regular updates and release newsletters on a quarterly schedule.

Maintaining consistent communication within an international association, whose members are spread across the globe and gather in person only biennially, is vital. In fact, enhancing communication has been identified as the primary area for improvement based on the 2024 membership survey steered by Pete Orpin (see pages 6-7). Recognizing this need, efforts are already underway to address it. To this end, a Communication Committee within the Board members has been formed with key objectives for the current term, working on new channels to enhance communication including the publication of newsletters and a redesign of the association's website.

The newly appointed Governing Board (see page 3) consists of IAP members from six different countries. This diverse composition has naturally emerged, encompassing multiple regions. To increase representation from all continents and to enhance our global understanding of paratuberculosis, we are actively working on establishing a Regional Committee (see pages 8-9). Ramón Juste will be leading this initiative and at this stage this group will identify IAP members and potential members from various countries working on paratuberculosis to establish a global network.

As always, we encourage members to connect with the Association's Officers or Board members to share suggestions and feedback to help strengthen our community.

By the way, I will be in charge of the Newsletter for a while, but I do need your help. Next issue will be released in June, so please contribute with a piece!

Best wishes,

Natalia Elguezabal



Contribute with your photos

Please consider those sharing photographs you have for publication in the next Newsletter! Let's display the diversity in ruminants, their environments, and where our members conducting research, science are outreach or just having a nice walk.

Cover photograph taken by Ilargi Lopitz: Cattle grazing in Illuntzar, Bizkaia (Basque Country) with the Bay of Biscay in the background.

New Officers of the Association



Following the 16th International Association for Paratuberculosis Colloquium (ICP 2024) in India, the newly appointed Officers of the Association have officially begun their tenure. After some adjustments, the final leadership team is in place. We are pleased to welcome Antonio Facciuolo (Canada) as the new President, Natalia Elguezabal (Spain) as Vice President, and Adel Talaat (United States) as Secretary-Treasurer. Our sincere gratitude goes to the outgoing Officers for their dedication and contributions to the Association.

Additionally, at the conclusion of ICP 2024, a new Board of Directors was formed. A notable change this term is that four board members were elected by the entire IAP membership and the fifth member is the past President, reflecting the updated format established through Bylaw modifications approved in Dublin. The newly established Board of Directors includes Alejandra Colombatti (Argentina), Sam Strain (Ireland), Ramón Juste (Spain), Peter Orpin (United Kingdom) and Conor McAloon (Ireland; past President). Some of the above have been actively involved in the IAP in recent years, while others are new to their roles. They are all eager to move forward, and we are confident that their combined expertise will lead to positive outcomes.

ICP 2024 India Experience

By Saurabh Gupta and Shoor Vir Singh



ICP 2024 was hosted in the city of Vrindavan, Mathura, India. The meeting took place from October 21 to 25, 2024. Over 60 delegates met to share their advances on Johne's disease and other mycobacterial infections.

The organizers from GLA University, Mathura, expressed immense pride and honor in hosting the 16th International Colloquium on Paratuberculosis, in the sacred city of Mathura-Vrindavan, the first of its kind in Asia. They highlighted the significance of Mathura, the birthplace of Lord Krishna, and its cultural heritage, aiming to provide attendees with a blend of scientific engagement and cultural experiences. The colloquium provided a unique platform for leading researchers, students, industry professionals, veterinarians, public health specialists, and policymakers to discuss advancements in paratuberculosis research and control strategies. The organizers ensured a memorable experience for all participants, enriched with Indian cuisine, traditional attire, customs, music, and dance.

Take a look at the 16ICP abstract book that will be available only for members at: www.paratuberculosis.com.

Upcoming Events

In the next months many attractive meetings where we can share our advances in PTB, learn from others, and raise awareness on this disease will be celebrated. Check out this selection.

ANEMBE. International Conference on Bovine Medicine. 28-30 May, 2025. Vitoria, Spain. (<u>https://congresoanembe.com/</u>)

ISWALD. International Symposium of the World Association of Veterinary Laboratory Diagnosticians. 12-14 June, 2025. Calgary, Canada. (https://iswavld2025.com/)

ASM MICROBE. American Society for Microbiology. 19-23 June, 2025. Los Angeles, CA, USA. (https://asm.org/events/asmmicrobe/home)

ADSA 2025. American Dairy Science Association. 22-25 June, 2025. Louisville, Kentucky, USA (https://www.adsa.org/Meetings/2025-Annual-Meeting)

45th ESM. European Society of Mycobacteriology. 22-25 June, 2025, Lisbon, Portugal. (<u>https://www.esmycobacteriology.eu/event-home</u>)

IVIS 2025. International Veterinary Immunology Symposium. 11-14 August, 2025. Viena, Austria (<u>https://ivis2025.org/</u>)

76th EAAP. European Association for Animal Production. 25-27 August, 2025. Innsbruck, Austria . (<u>https://eaap2025.org/</u>)

ESVP-ECVP CONGRESS. Joint meeting of the European Society of Veterinary Pathology and European College of Veterinary Pathologists. 27-30 August, 2025. Turin, Italy. (https://www.esvp-ecvp-estpcongress.eu/)



7th ECVM. International Conference of the European College of Veterinary Microbiology. 10-12 September 2025. Berlin, Germany. (https://evis.events/event/524/)



Germany will host the 17th ICP in June 2026

ICP 2026 will be hosted in the city of Dresden, Germany. The meeting will take place from June 7th to 11th, 2026 in the German Hygiene Museum. The colloquim will be organized by Heike Kohler and Kartsen Donat. More information will be posted on the meeting website soon: https://icp2026.com/.

33rd WBC. WORLD BUIATRICS CONFERENCE. 6-10 September, 2026. Istanbul, Turkey. (https://www.wbc2026istanbul.com/).

IAP Business: Financial Report 2023-2025



International Association of Paratuberculosis

Adel M. Talaat B.V.Sc., M.V.Sc., PhD. Professor of Microbiology University of Wisconsin-Madison Secretary/Treasurer Int. Assoc. Paratuberculosis Email: adel.talaat@wisc.edu

March 30, 2025.

Financial Report-March 30, 2025.

Chase Bank Checking Account. There is no other bank or investment accounts associated with IAP.

Date	Balance	Expenses	Income	Notes
2022-7-1 to 2023-12-29	\$ 58,438.47	\$ -		Bank transfer from previous treasurer
2024-12-31	\$ 56,447.50	\$ (5,284.02)		Marshal and Helping Hands Awards for ICP16
2024-12-31		\$ (2,618.25)		Travel expenses for web master to ICP16
2024-12-31		\$ (2,525.72)	0	Travel expenses for secretary to ICP16
2024-12-31			\$ 8,437.02	Membership dues
2025-02-30	\$ 57,579.94	s -	\$ 1,625.67	Membership dues
Pending bank transfer	\$ (1,237.00)			Registration fees for awardees to the ICP16
Total	\$ 56,342.94	\$ (10,427.99)	\$ 10,062.69	

Respectively submitted,

Add M. Tul

Adel M. Talaat, Secretary/Treasurer IAP

IAP Membership Survey 2024 Summary

By Pete Orpin

Introduction In November 2024, the International Association of Paratuberculosis (IAP) distributed a 15-question survey to its 97 members to assess satisfaction levels, identify areas for improvement, and gather opinions on future activities and priorities. 37 responses were analyzed, revealing insights into membership demographics and sentiments.

Demographics The survey saw a low participation rate, with two-thirds of members not responding. Of the participants, 30% identified as academics/lecturers, 35% as researchers/scientists, and 27% included various roles, such as retirees and laboratory workers. The majority of respondents (85%) were based in Europe or the USA, with no contributions from Africa or the Middle East. 32% of respondents were retired, and 27% were nearing retirement (30+ years in the field), indicating a potential gap in appeal to younger researchers seeking to engage with paratuberculosis knowledge.

Reasons for Joining and Satisfaction Networking was the primary reason for joining the IAP, followed by support for the paratuberculosis community, learning opportunities, and mentoring. Discounts on Congress fees were not a significant incentive for membership but played a role in renewal decisions. Satisfaction levels were low, with only 28% of respondents reporting high satisfaction with their membership, and just 13% would strongly recommend the IAP to others. This indicates an opportunity for the IAP to enhance its value and attract new members.

Resource Utilization and Communication A concerning finding was that less than 11% of members accessed resources monthly, while 89% accessed them a few times a year or less. Despite this, 38% expressed satisfaction with the IAP's communication, primarily through email updates and website resources, with little interest in social media. However, suggestions for improving engagement included creating a members-only social media group for networking.

Membership Benefits and Suggestions The most valued membership benefit was the ICP Congress, regarded as essential for continuing professional development and networking. Other suggestions from members included hosting webinars to share paratuberculosis knowledge, facilitating collaborations for grant proposals, and providing expert interpretations of new research. There were calls for better newsletters, networking support, and mentorship programs targeting young scientists and those in developing countries.

Key Priorities for Expansion To attract and retain members, the IAP should focus on improving communication, enhancing its visibility within the scientific community, and sharing knowledge more effectively. The potential for online engagement needs to be explored, as many members expressed interest in regular online seminars and discussion groups.

IAP Membership Survey 2024 Summary (continued)

What top three things could we do better to expand the membership of the IAP? (select 3 options)



Conclusions

The survey does have limitations due to the demographic bias towards existing older members of the Association.

Our proposed actions for 2025 are to update the website to improve communication with our members and include more resources of value to potential members. To expand our membership, we need to communicate better, share our expertise more effectively through online events and expand our profile amongst the wider Paratb community.



What are your thoughts on how we can deliver more value to you and how we can expand our Association?

Please suggestions to:

newsletter@paratuberculosis.com

Regional Committee Creation

By Ramón Juste

The International Association for Paratuberculosis (IAP) Regional Committee (RG) was proposed after the change of the Board of Directors (BoD) election system. Originally, the IAP BoD was a regional representation organ where each country with 5 or more members was entitled to vote one national representative. This created a large BoD which was deemed to be little operative. Change to a general election system where registered candidates are voted by the whole IAP constituency left out the diversity of views that differences in the local ruminant production system guaranteed such as species (cattle, sheep, goat, buffalo, camel, etc), climate (arid, humid, ho, temperate, etc) or intensivity (grazing, indoors, etc). On the other hand, the current IAP members fail to cover some regions of the world that are less concerned by paratuberculosis, either because there are more pressing problems or because there is less participation in the global exchange of scientific information. Consequently, considering that diversity is a strength, I volunteered to organize that committee. To that end I have been looking into how the committee can be set up. In the first place, I analyzed the national distribution of IAP membership in the last years according to the IAP website registry which is the best available source at this moment.

There are a total of 206 records from the 6 world regions I think might best represent different climates and production systems. The higher number of members are from Europe (84) and North America (56), constituting 68% of the membership. The other regions are represented by just 2 members from Africa, 14 from Iberic America, 24 from Oceania and 26 from Asia. Active members with dues paid account to less than half, but with an even strong bias to Europe (39) and North America (26) that make up to 75% of the membership. These figures are representative of the historic composition but leave out many relevant people throughout the history of the Association. Currently there is no African member. There are two big countries that are not represented: Russia and China. There are no data on the specific field of interest or expertise of each member.

Therefore, I think that the **goals of the RG** must be: 1) to incorporate members form Russia and China. Especially the latter is important since there is a significant contribution to the international literature on paratuberculosis by Chinese authors. 2) To rank the main impact of paratuberculosis in each region (species and type of production) and 3) To know the strategies of control in use and their success in terms of engagement and prevalence or economic impact reduction, 4) to define needs of technological development to better cope with the challenges posed by paratuberculosis and 5) to determine the contribution of paratuberculosis research on general scientific knowledge.

Regional Committee Creation (continued)

I do not want to include zoonotic aspects as I think currently there is still lack of solid evidence and exaggerating it might cause unnecessary alarm and compromise the viability of the affected livestock industry. Instead, I prefer to establish the goal of contribution to Science either as a model of chronic inflammatory disease with a clear infectious origin or as a potential stimulant for immune system maturation and fitness.

To this end, I propose to create a Committee of up to three people per global region that can voluntarily contribute to developing these 5 goals with a local perspective.

The first question I would like to raise for the Committee constitution is whether we shall require membership. My standing is that this is preferable, but not necessarily critical. Therefore, I would propose to join, but if the person approached does not want to do it, allow participation for at least two inter-colloquia periods.

I do not expect to cause any expenses, as the communications will be made by standard means (email and videoconferences).

I want to kindly ask for nominations for the committee to all Board members, then I would approach them and ask for a statement of interest and paratuberculosis-CV. Selection will be done attending to both. Then I will prepare a short list to be submitted to the Board and once approved, the committee will start working into developing the above-mentioned lines.





Ammendments to the IAP By-Laws approved

The amendments to the IAP bylaws were successfully approved, with a strong endorsement, having 93.5% of members voting in favor during the General Membership meeting on the final day of the 16th ICP conference in India.

We sincerely appreciate the dedication and hard work of our past Board members on this document that establishes the rules and foundations for our proper functioning. Thanks to all the members who understood the importance of voting on these matters.

The updated By-laws can be consulted online at <u>www.paratuberculosis.com</u>.

About The Association \rightarrow Laws & By-Laws

Contribute to the Next Newsletter

The next newsletter will be published in June 2025.

We invite all members to contribute by sharing opinion pieces, news about recent publications or project updates, regional control programs, job opportunities, or any relevant information on paratuberculosis research and communications.



Please submit your article to:

newsletter@paratuberculosis.com; nelguezabal@neiker.eus

Submission deadline for the upcoming issue is May 31st, 2025.

We welcome all submissions!

Some of the images included in this issue have been generated with Leonardo AI (LAI) or downloaded from Stockcake (SC).



Recent Literature on MAP

Research papers focused on *Mycobacterium avium* subsp. *paratuberculosis* published during the past six months have been included in the following list.

Links to the open access versions of the papers have been included in the titles when possible.

Enjoy reading!

Baruta G, Flannigan KL, Alston L, Thorne A, Zhang H, De Buck J, Colarusso P, Hirota SA Mycobacterium avium subspecies paratuberculosis targets M cells in enteroid-derived monolayers through interactions with beta1 integrins. Am J Physiol Gastrointest Liver Physiol. 2025 Mar 20. doi: 10.1152/ajpgi.00250.2024.

Khosravi M, Nouri M, Haji Hajikolaei MR, Kolivand A, Gharibi D, Constable PD. <u>Comparison of</u> <u>Immunomagnetic Bead Separation-Immunosensor Detection and Nested-PCR Methods for</u> <u>Detecting Mycobacterium avium Subspecies paratuberculosis in Cattle Feces.</u> J Clin Lab Anal. 2025 Mar 19:e70009. doi: 10.1002/jcla.70009.

Rasper-Hössinger M, Scherrer S, Stephan R, Seehusen F. <u>Stereotypic immune response in</u> <u>Mycobacterium avium ssp. paratuberculosis infection among different Swiss caprine genotypes.</u> Vet Pathol. 2025 Mar 17:3009858251322726. doi: 10.1177/03009858251322726.

Tharwat M, Ali H, Alkheraif AA. <u>Paratuberculosis in sheep and goats: Pathogenesis, diagnostic findings, and control strategies.</u> Open Vet J. 2025 Jan;15(1):1-7. doi: 10.5455/OVJ.2024.v15.i1.1

Tharwat M, Ali H, Alkheraif AA. Clinical insights on paratuberculosis in Arabian camels (Camelus dromedarius): A review. Open Vet J. 2025 Jan;15(1):8-17. doi: 10.5455/OVJ.2024.v15.i1.2.

Comper JR, Hand KJ, Poljak Z, Kelton D, Greer AL. <u>Associations between measures of network</u> <u>centrality and Johne's disease among dairy herds in Ontario, Canada.</u> J Dairy Sci. 2025 Mar 4:S0022-0302(25)00135-3. doi: 10.3168/jds.2024-25643.

Hernandez-Reyes A, De Buck J, Davies JL, Eshraghisamani R, Martins L, Orsel K. <u>Diagnostic</u> <u>Strategies and Strain Typing for Johne's Disease in Wood Bison (Bison bison athabascae)</u>. J Wildl Dis. 2025 Mar 6. doi: 10.7589/JWD-D-24-00091.

Kim JH, Lee D, Hall K, Jo H, Bannantine JP, Davis WC, de Souza C. <u>Major membrane protein of</u> <u>Mycobacterium avium subp. paratuberculosis activates immune and autophagic pathways in</u> <u>bovine monocyte-derived macrophages.</u> Vet Immunol Immunopathol. 2025 Feb 21;282:110901. doi: 10.1016/j.vetimm.2025.110901.

Asgari N, Ghaemi EA, Tavasoli S, Aghaei M, Nikoo HR, Zamani S. <u>Exploring the association</u> between Mycobacterium avium subspecies paratuberculosis infection and rheumatoid arthritis: an immunological perspective. Arthritis Res Ther. 2025 Feb 21;27(1):36. doi: 10.1186/s13075-025-03501-2.

Guo W, Wang X, Hu J, Zhang B, Zhao L, Zhang G, Qi J, Wei Z, Bao Y, Tian M, Wang S. <u>In silico</u> design of a multi-epitope vaccine against Mycobacterium avium subspecies paratuberculosis. Front Immunol. 2025 Jan 28;16:1505313. doi: 10.3389/fimmu.2025.1505313.

Hlokwe MT, Masina NS, Letsoko B, Davey SC, Michel AL. <u>Are there benefits of culture-based</u> <u>detection of Mycobacterium avium spp paratuberculosis over histopathology?</u> Onderstepoort J Vet Res. 2025 Feb 11;92(1):e1-e9. doi: 10.4102/ojvr.v92i1.2159.

Sanderson J, Aboagye J, Makinson R, Rapi K, Provstgaard-Morys S, Stockdale L, Alison Lawrie, Lanigan I, Halim N, Douiri A, Greenlay E, Malek R, Gray E, West L, El Oulidi F, Cross PI, Stallibrass M, Gilbert SC, Hill AVS, Ewer KJ. A phase 1b clinical trial to determine the safety, tolerability and immunogenicity of simian adenovirus and poxvirus vectored vaccines against Mycobacterium avium complex subspecies in patients with active Crohn's disease. EBioMedicine. 2025 Feb 7;113:105570. doi: 10.1016/j.ebiom.2025.105570.

Gao Y, Cao J, Han B, Sun D. Preliminary exploration of mRNA, IncRNA, and miRNA expressions in the bovine jejunum unveils novel aspects of Mycobacterium avium subspecies paratuberculosis infections. BMC Genomics. 2025 Feb 4;26(1):108. doi: 10.1186/s12864-025-11299-1.

Kasimanickam R, Ferreira JCP, Kastelic J, Kasimanickam V. <u>Application of Genomic Selection in</u> <u>Beef Cattle Disease Prevention</u>. Animals (Basel). 2025 Jan 20;15(2):277. doi: 10.3390/ani15020277.

Navarro JA, Sanchez J, Buendia AJ. <u>Value of anatomopathological examination in goats with a positive comparative intradermal tuberculin test as part of a tuberculosis control programme</u>. Vet Rec. 2025 Mar 1;196(5):e4963. doi: 10.1002/vetr.4963.

Liu T, Lin H, Zhu L, Yang DA, Yao H, Pan Z. <u>Accuracy of real-time PCR for the detection</u> of paratuberculosis in actual samples: A systematic review and meta-analysis. Prev Vet Med. 2025 Apr;237:106436. doi: 10.1016/j.prevetmed.2025.106436.

Burton AM, Else KJ, Irving J, Mair I, Shultz S. <u>Antibodies and Inflammation: Fecal Biomarkers of</u> <u>Gut Health in Domestic Ruminants.</u> J Exp Zool A Ecol Integr Physiol. 2025 Jan 22. doi: 10.1002/jez.2896

Mukbel RM, Hananeh WM, Radhi A, Ismail ZB. <u>Coinfection of gastrointestinal parasites</u> with paratuberculosis in naturally infected sheep. Vet World. 2024 Nov;17(11):2577-2585. doi: 10.14202/vetworld.2024.2577-2585.

Ka Lip C, Go J, Binte Abu Bakar NA, Octavia S, Pin Lin RT, Teo JWP. <u>Whole-genome</u> phylogenetic analysis of *Mycobacterium avium* complex from clinical respiratory samples. Microbiol Spectr. 2025 Feb 4;13(2):e0160024. doi: 10.1128/spectrum.01600-24.

Elsohaby I, Kostoulas P, Fayez M, Elmoslemany A, Alkafafy ME, Bahhary AM, Alzahrani R, Morsi AEKM, Arango-Sabogal JC. Bayesian estimation of diagnostic accuracy of fecal smears, fecal PCR and serum ELISA for detecting Mycobacterium avium subsp. paratuberculosis infections in four domestic ruminant species in Saudi Arabia. Vet Microbiol. 2025 Feb;301:110377. doi: 10.1016/j.vetmic.2025.110377.

Xue SY, Ma W, Li MY, Meng WK, Ding YL, Yang B, Lv YR, Chen RB, Wu ZH, Tunala S, Zhang R, Zhao L, Liu YH. The Impact of Mycobacterium avium subsp. paratuberculosis on Intestinal Microbial Community Composition and Diversity in Small-Tail Han Sheep. Pathogens. 2024 Dec 18;13(12):1118. doi: 10.3390/pathogens13121118.

Mazzeo A, Rossi N, Di Chiro V, Maiuro L, Rosati S, Giorgione S, Sorrentino E. <u>Enhancing Inner</u> Area Revaluation Through Optional Control Programmes for Infectious Bovine Rhinotracheitis and Ruminant Paratuberculosis Potentially Linked to Crohn's Disease in Humans. Int J Environ Res Public Health. 2024 Nov 30;21(12):1595. doi: 10.3390/ijerph21121595.

Glover I, Bradley A, Green M, McAloon CG, Hyde R, O'Grady L. <u>Use of a hidden Markov model</u> for interpretation of serial cow milk paratuberculosis antibody enzyme-linked immunosorbent assay results adjusted for milk yield and quality. Prev Vet Med. 2025 Feb;235:106413. doi: 10.1016/j.prevetmed.2024.106413

Hernández-Bello J, Bach H, Cerpa-Cruz S, Sánchez-Zuno GA, Hernández-Gutiérrez R, Nicoletti F, Saraceno A, Muñoz-Valle J. <u>PtpA protein from Mycobacterium avium</u> subsp. paratuberculosis as a potential marker of rheumatoid arthritis in humans. PLoS One. 2025 Jan 3;20(1):e0316727. doi: 10.1371/journal.pone.0316727.

Meles DK, Mustofa I, Khairullah AR, Wurlina W, Mustofa RI, Suwasanti N, Akintunde AO, Putra SW, Kusala MKJ, Moses IB, Wibowo S, Raissa R, Fauzia KA, Abdila SR, Yanestria SM, Fauziah I. <u>A</u> comprehensive review of paratuberculosis in animals and its implications for public health. Open Vet J. 2024 Nov;14(11):2731-2744. doi: 10.5455/OVJ.2024.v14.i11.2.

Zapico D, Espinosa J, Criado M, Gutiérrez D, Ferreras MDC, Benavides J, Pérez V, Fernández M. Immunohistochemical expression of TLR1, TLR2, TLR4, and TLR9 in the different types of lesions associated with bovine paratuberculosis. Vet Pathol. 2024 Dec 25:3009858241302850. doi: 10.1177/03009858241302850.

Marianelli C, Pavlik I, Ghielmetti G. Editorial: Nontuberculous mycobacterial infections in animals and humans: pathogenesis, diagnosis, prevention, treatment, and epidemiology. Front Vet Sci. 2024 Dec 10;11:1532801. doi: 10.3389/fvets.2024.1532801.

Jessu A, Cochard T, Burtin M, Crapart S, Delafont V, Samba-Louaka A, Biet F, Moyen JL, Héchard Y. Extensive environmental survey of free-living amoebae and their elusive association with Mycobacterium bovis or Mycobacterium avium subsp. paratuberculosis. FEMS Microbiol Ecol. 2025 Jan 7;101(1):fiae164. doi: 10.1093/femsec/fiae164.

Hodgeman R, Krill C, Rochfort S, Rodoni B. <u>Detection of Mycobacterium avium</u> subsp. paratuberculosis in Australian Cattle and Sheep by Analysing Volatile Organic <u>Compounds in Faeces.</u> Sensors (Basel). 2024 Nov 21;24(23):7443. doi: 10.3390/s24237443.

Dueñas Mena DL, Gutiérrez-Pabello JA, Quintero Chávez K, Brito-Perea MDC, Díaz Padilla DM, Cortez Hernández O, Chávez Mendez JR, Alcalá Zacarias JM, Vela Sancho GB, Landeros Sánchez B. <u>Binding of MAP3773c Protein of Mycobacterium avium subsp. paratuberculosis in the Mouse Ferroportin1 Coding Region.</u> Int J Mol Sci. 2024 Nov 26;25(23):12687. doi: 10.3390/ijms252312687.

Criado M, Silva M, Arteche-Villasol N, Zapico D, Elguezabal N, Molina E, Espinosa J, Ferreras MDC, Benavides J, Pérez V, Gutiérrez-Expósito D. <u>Evaluation of alternative vaccination routes</u> against paratuberculosis in goats. Front Vet Sci. 2024 Nov 27;11:1457849. doi: 10.3389/fvets.2024.1457849.

Huiying Z, Mingfeng C, Wei C, Shuiyun C, Yuchen L, Honghai W, Xuelong C, Yanping Q. <u>Prevalence of bovine paratuberculosis in Chinese cattle populations: a meta-analysis.</u> Front Cell Infect Microbiol. 2024 Nov 21;14:1424170. doi: 10.3389/fcimb.2024.1424170.

Köhler H, Müller J, Kloß E, Möbius P, Barth SA, Sickinger M, Gies N, Heydel C, Peters M. Paratuberculosis in South American camelids: two independent cases in alpacas in Germany. BMC Vet Res. 2024 Dec 4;20(1):550. doi: 10.1186/s12917-024-04414-z.

Lombard JE, Garry FB. <u>Biosecurity Practices for Mycobacterium avium</u> subspecies paratuberculosis Infection, Salmonellosis, and Bovine Leukemia Virus on Cattle <u>Operations.</u> Vet Clin North Am Food Anim Pract. 2025 Mar;41(1):93-101. doi: 10.1016/j.cvfa.2024.11.003.

Behdad S, Pakdel A, Massudi R. <u>Saliva NIR spectroscopy and Aquaphotomics: a novel</u> diagnostic approach to Paratuberculosis in dairy cattle. Front Cell Infect Microbiol. 2024 Nov 13;14:1395949. doi: 10.3389/fcimb.2024.1395949.

Golla AC, Chaumontet J, Vande Voorde R, Danelishvili L. <u>Discovery of Mycobacterium avium</u> subsp. paratuberculosis Lytic Phages with Extensive Host Range Across Rapid- and Slow-<u>Growing Pathogenic Mycobacterial Species</u>. Antibiotics (Basel). 2024 Oct 27;13(11):1009. doi: 10.3390/antibiotics13111009.

Capewell P, Lowe A, Athanasiadou S, Wilson D, Hanks E, Coultous R, Hutchings M, Palarea-Albaladejo J.

Towards a microRNA-based Johne's disease diagnostic predictive system: Preliminary results. Vet Rec. 2024 Nov/Jul 30;195(11):e4798. doi: 10.1002/vetr.4798

Taras DCB, Canuti M, Chander Y, Hamond C, Obregon D. <u>Editorial: Reviews in veterinary</u> <u>epidemiology and economics.</u> Front Vet Sci. 2024 Oct 15;11:1503288. doi: 10.3389/fvets.2024.1503288.

Ding S, Brownlee BJ, Parate K, Pola CC, Chen B, Hostetter JM, Jones D, Jackman J, Iverson BD, Claussen JC. IFN-gamma and IL-10 Immunosensor with Vertically Aligned Carbon Nanotube Interdigitated Electrodes toward Pen-Side Cattle Paratuberculosis Monitoring. Glob Chall. 2024 Aug 25;8(9):2400021. doi: 10.1002/gch2.202400021.

Eshraghisamani R, Facciuolo A, De Buck J. <u>Oral paratuberculosis vaccine efficacy and mucosal immunity in cattle.</u> Vaccine. 2024 Dec 2;42(26):126447. doi: 10.1016/j.vaccine.2024.126447

Brigstocke T, Cutler K. Introduction of a new Johne's disease risk level (RL1*). Vet Rec. 2024 Oct 19;195(8):341-342. doi: 10.1002/vetr.4826.

Ashraf H, Dikarlo P, Masia A, Zarbo IR, Solla P, Ijaz UZ, Sechi LA. <u>Mycobacterium avium</u> subspecies paratuberculosis (MAP) infection, and its impact on gut microbiome of individuals with multiple sclerosis. Sci Rep. 2024 Oct 14;14(1):24027. doi: 10.1038/s41598-024-74975-4.

Martins L, Orsel K, Eshraghisamani R, Hernández-Agudelo JM, Pereira AC, Shaukat W, Koets AP, Bannantine JP, Ritter C, Kelton DF, Whittington RJ, Weber MF, Facciuolo A, Dhand NK, Donat K, Eisenberg S, Salgado MA, Kastelic JP, De Buck J, Barkema HW. <u>Invited review: Improved control of Johne's disease in dairy cattle through advancements in diagnostics, testing, and management of young stock.</u> J Dairy Sci. 2025 Feb;108(2):1162-1181. doi: 10.3168/jds.2024-24643.

Steuer P, Barkema HW, Tejeda C, Hernández JM, Ulloa F, Salgado M. <u>Response of</u> <u>Mycobacterium avium subsp. paratuberculosis isolates to reactive oxygen stress generated by</u> <u>treatment with copper ions.</u> Vet Microbiol. 2024 Nov;298:110251. doi: 10.1016/j.vetmic.2024.110251.

Kuenstner JT, Zhang P, Potula R, Galarneau JM, Bach H. <u>Human antibodies against</u> Mycobacterium avium ssp. paratuberculosis combined with cytokine levels for the diagnosis and selection of Crohn's disease patients for anti-mycobacterial therapy-A pilot study. PLoS One. 2024 Oct 4;19(10):e0308911. doi: 10.1371/journal.pone.0308911.

Taylor EN, Channa K, Orpin PG, Hanks J, Taylor NM. <u>Changes in the Johne's disease situation</u> in <u>GB dairy herds over 10 years, as revealed by regular milk ELISA data</u>. Prev Vet Med. 2024 Nov;232:106317. doi: 10.1016/j.prevetmed.2024.106317.

Forden CA. <u>Phagolysosomal resistance hypothesized to be a danger signal</u>. Scand J Immunol. 2024 Oct;100(4):e13400. doi: 10.1111/sji.13400.

Sharma K, Sharma S, Dhanda S, Bangar Y, Kumar N, Chaubey KK. <u>Meta-analysis of prevalence</u> <u>of paratuberculosis in cattle using published estimates under serum and milk ELISA</u>. Res Vet Sci. 2024 Oct;178:105366. doi: 10.1016/j.rvsc.2024.105366.

Morrison R, Hanks J, Orpin PG, Strain S, Taylor EN, Rose DC. <u>Challenges for the management</u> of Johne's disease in the UK: Expectation management, space, 'free riding', and vet-farmer communication. Prev Vet Med. 2024 Oct;231:106295. doi: 10.1016/j.prevetmed.2024.106295.

