

BC MAGAZINE

Q4 2024 Issue

Poultry Edition

- Interview with Gordon Whitbeck
- Spotlight on MgMs
- Ring Trial Results

BioChek

SMART VETERINARY DIAGNOSTICS

Keeping your flock in check. The **smart way**.



BioChek Animal Health Monitoring System

- ELISA and PCR diagnostic test kits
- Reference controls (ELISA)
- Extraction solutions and standards (PCR)
- BioChek Monitoring Software
- BioChek ELISA Assay Robot (BEAR)
- RoboPrep nucleic acid extraction robot

www. biochek.com | since 1997

BioChek
SMART VETERINARY DIAGNOSTICS

202501||HP

WELCOME

A MESSAGE FROM OUR CEO

As we are approaching the end of 2024, we look back on an exciting year in which we launched various new diagnostic test kits

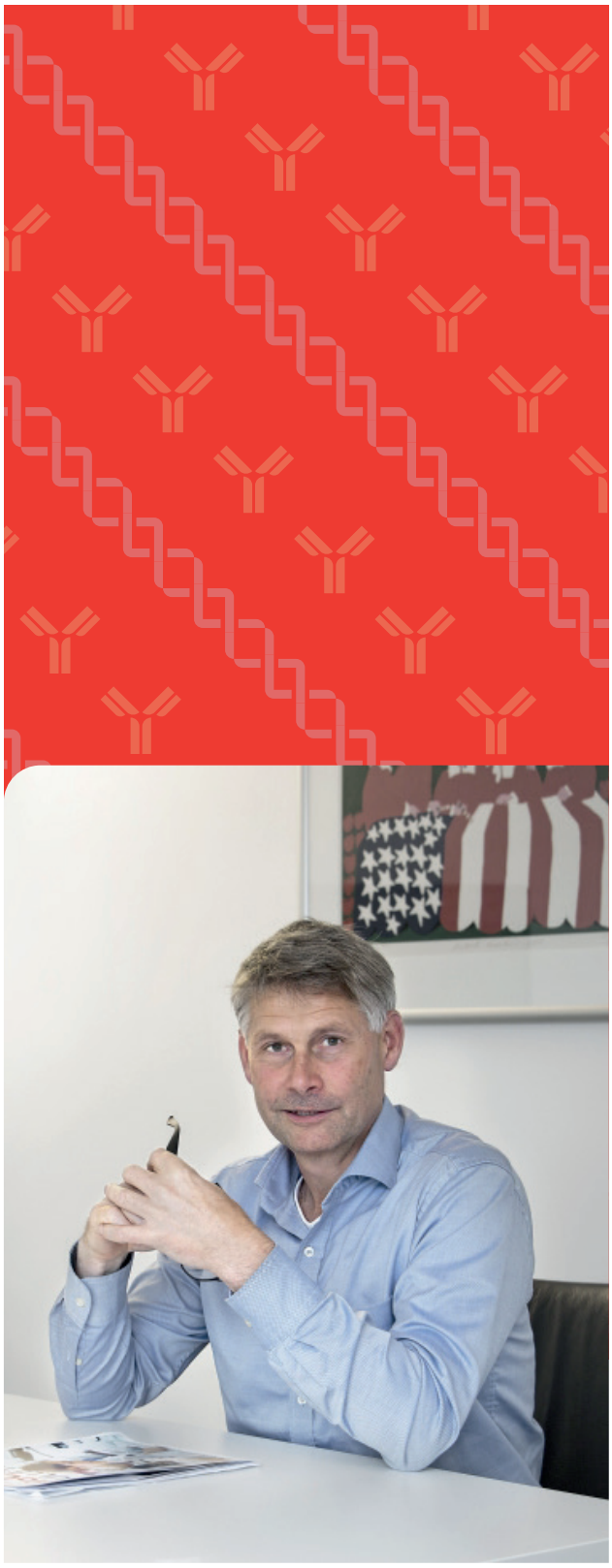
We also entered a new partnership with Bio-X, further solidifying our portfolio offering with several new products to be launched over the next year.

We continue updating and improving our BioChek Monitoring Software, and just this month, we launched our new website.

We hope you will enjoy reading this second issue of our BC Magazine - special Poultry edition, featuring an interview with Gordon Whitbeck of Whitbeck Labs, the launch of the **vet**proof® Mycoplasma Gallisepticum-Synoviae qPCR LyoKit, an update on Ring Trial 2024, a recap of the events in the past few months and a preview of next year.

We take this opportunity to thank you for your trust and wish you 12 months of happiness, 52 weeks of joy, and 365 days of success for 2025!

Barend van Dam



Since 1997, BioChek has been supporting the poultry and swine industries to help improve livestock productivity and promote animal health.

BioChek's extensive portfolio of veterinary diagnostics is used worldwide to detect a wide range of poultry and swine diseases.

Our head office is based in the Netherlands, and we have an R&D department and production facility in the UK, a USDA-licensed facility in the USA, a regional office in South Africa, regional and local sales teams, as well as numerous distributors.



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BioChek
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FEATURED IN THIS ISSUE

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“I can't speak highly enough about our collaboration with the BioChek team, and I look forward to many more years of partnership.”



Photo of Whitbeck Chemistry Lab, courtesy Whitbeck Labs

INTERVIEW WITH GORDON WHITBECK | WHITBECK LABS

IT ALL STARTED WITH JUST ONE KIT, BACK IN 2013

Gordon Whitbeck holds an graduate degree in Chemistry, graduated in Microbiology from the University of Arkansas 49 years ago and has worked in microbiology ever since. Gordon started his own business 46 years ago, in 1978.

Gordon initially focused on veterinary and human medical microbiology and laboratory medicine. In 1992, the Clinical Laboratory Improvement Act was passed. Around that time, the company acquired an analytical chemistry laboratory heavily involved in the nutritional requirements of poultry feed.

In 2012, the company acquired a poultry health laboratory that was part of the Poultry Federation Organization in Arkansas, Oklahoma and Missouri, overseeing the poultry companies in those states, and obtained a unique position in the United States, offering services in three labs: a Microbiology Lab, an Analytical lab, and a Poultry Health Lab. As Gordon says, “We are essentially a one-stop location to cover all aspects, primarily in the poultry industry.”

Whitbeck Labs has been working with BioChek since 2013. At that time, Whitbeck Labs needed a SEST (Salmonella enteritidis, Salmonella spp, Salmonella typhimurium) Kit that their suppliers could not provide, so they searched further.

It started with one kit

They first met Tim (Goode) and Gwen (Slacum) in Atlanta at the IPPE in 2013 and ordered their first kit from BioChek. This initial introduction led to ordering more kits and, over the years, developed into today’s partnership.

Back in 2013, we started with one kit and over the years, we kept adding more and more Poultry diagnostic test kits from BioChek. Now, we have many of BioChek’s kits across the spectrum.

To the question why Whitbeck Labs have been working with BioChek for so long, Gordon shares that they strive to serve their customers as best they can and that many of their customers specifically request BioChek diagnostic kits and ask for the BioChek Monitoring Software.

We run the software here, and our customers can seamlessly transfer the data to analyse and interpret the results. This is the BioChek offer.

Gordon adds: “We want to fulfil our customers’ requests, and BioChek provides the products and services that we request. It’s a great mix of opportunity and reliability. Excellent cooperation, phenomenal customer support, and superb tech support exist. I see it as a partnership”.



Gordon Whitbeck

BioChek has had the answer

Some of the diseases affecting the poultry industry have been around for a long time or have come back: like the metapneumovirus, which is out there now, and has been affecting birds. We have already been ramping up the testing here for about a year and a half.

A similar situation is seen with another disease that's really going across the US, especially in this region: egg drop syndrome. Luckily, we can provide our customers with diagnostic kits because BioChek has it in its portfolio.

We rarely have an issue for which BioChek cannot provide a diagnostic kit. This has allowed us to move along as diseases appear that we don't have routines for yet. Especially in the last couple of years, several things have been coming through that have been different in the industry. BioChek has had the answer.



Microbiology Lab at Whitbeck Labs facilities



Serology Lab at Whitbeck Labs facilities

We see a crossover in diseases like egg drop syndrome and even metapneumovirus between turkey and chicken.

For instance, we have broader testing for ORT. This was a turkey test but is now also used for chicken. Also, testing for fowl adenovirus is emerging.

Some of these emerging issues have to do with the bio-security levels of the poultry companies. Companies tend to get complacent with biosecurity activities, and conditions that would normally be controlled can become a problem. This is an issue that we see across the globe. Again, it comes down to biosecurity, husbandry, and testing.

Last year was our 45th anniversary year. I cannot believe I started 45 years ago as one person, and now we have three generations working at our facilities and servicing customers across the United States.

Our lab's uniqueness? We're private, not government, not university, not state. We're a small private facility with many capabilities.

Looking to the future, we will continue to search for ways to answer our customers' needs. That's what we do, what we're about, and what has brought us to where we are.



It's a family business with three generations working at Whitbeck Labs

REVOLUTIONIZING MYCOPLASMA DIAGNOSTICS

INTRODUCING THE VETPROOF® MYCOPLASMA GALLISEPTICUM-SYNOVIAE QPCR LYOKIT

Unique design | Dual control system | The only truly ready-to-use kit on the market

- Accurate & reliable results
- Enhanced workflow efficiency – truly ready-to-use format
- Robust performance across sample matrices, extraction methods and qPCR cyclers

BioChek is thrilled to introduce our latest development: the **vet**proof® Mycoplasma Gallisepticum-Synoviae qPCR LyoKit.

Designed with the requirements of diagnostic laboratories and the field in mind, this unique, lyophilized solution sets a new standard for convenience (ease of use), accuracy and reliability in Mycoplasma PCR diagnostics.

The new kit has a 4-plex design, enabling the simultaneous detection of:

- Mycoplasma Gallisepticum (Mg; FAM)
- Mycoplasma Synoviae (Ms; HEX)
- Internal (Amplification) Control (IC; ROX) for identification of PCR inhibition to safeguard against false negative results
- Endogenous Control (EnC; CY-5) to verify the presence of avian test matrix and successful DNA extraction

The kit comes in a unique lyophilized format, in which the reaction mix is directly lyophilized in the PCR tubes: making this the only truly ready-to-use Mycoplasma qPCR kit format and allowing shipping at ambient temperatures.



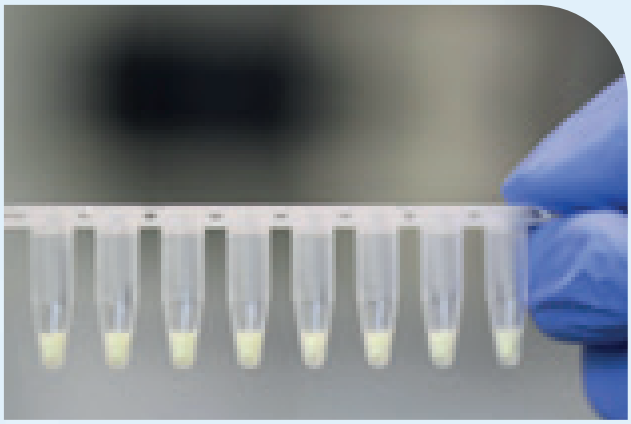


Figure 1 & 2: Picture of a vetproof® Mycoplasma Gallisepticum-Synoviae qPCR LyoKit, containing a 96-well PCR plate prefilled with lyophilized reaction mix, one bag with cap strips, one vial (with purple cap) with Control Template (positive control) and two vials (with clear cap) H2O PCR-grade (negative control).

KEY BENEFITS
VETPROOF® MYCOPLASMA GALLISEPTICUM-SYNOVIAE QPCR LYOKIT

1. ACCURATE & RELIABLE RESULTS

Specificity

Extensive inclusivity and exclusivity testing confirmed the ability of the **vet**proof® Mycoplasma Gallisepticum-Synoviae qPCR LyoKit to accurately detect target pathogens Mycoplasma gallisepticum and Mycoplasma synoviae. No false positives were observed during exclusivity testing on a sample set of 79 other micro-organisms, including 10 non-target Mycoplasma strains.

Genus	Species	Origin/Strain	Mg	Ms	IC	EnC
Mycoplasma	gallisepticum	NCTC 10115	+	-	+	-
Mycoplasma	gallisepticum	ATCC 15302	+	-	+	-
Mycoplasma	gallisepticum	Nobilis® Mg 6/85	+	-	+	-
Mycoplasma	gallisepticum	Poulvac® Myco F	+	-	+	-
Mycoplasma	gallisepticum	Vaxsafe® Mg (TS-11)	+	-	+	-
Mycoplasma	gallisepticum	FLI Mg R30	+	-	+	-
Mycoplasma	gallisepticum	FLI Mg 231	+	-	+	-
Mycoplasma	gallisepticum	FLI Mg 17/90	+	-	+	-
Mycoplasma	gallisepticum	FLI Mg 340/97	+	-	+	-
Mycoplasma	gallisepticum	FLI Mg 16DL0144 AL	+	-	+	-
Mycoplasma	synoviae	NCTC 10124	-	+	+	-
Mycoplasma	synoviae	ATCC 25204	-	+	+	-
Mycoplasma	synoviae	H 11253A/1e 33C	-	+	+	-
Mycoplasma	synoviae	FLI Ms 345	-	+	+	-
Mycoplasma	synoviae	FLI Ms 14 DL	-	+	+	-
Mycoplasma	synoviae	FLI Ms 1853	-	+	+	-

Table 1: Summary of Mycoplasma gallisepticum and Mycoplasma synoviae inclusivity results. Results for the target channels (Mg and Ms) were as expected. All Mycoplasma strains were detected and identified correctly. Results for the IC and EnC were also as expected. Results for the EnC were negative as culture samples were used.

Genus	Species	Origin/Strain	Mg	Ms	IC	EnC
Mycoplasma	cloacale	BC 02	-	-	+	-
Mycoplasma	gallinaceum	BC 03	-	-	+	-
Mycoplasma	gallinarum	BC 04	-	-	+	-
Mycoplasma	gallopavonis	BC 05	-	-	+	-
Mycoplasma	imitans	BC 06	-	-	+	-
Mycoplasma	iners	BC 07	-	-	+	-
Mycoplasma	iowae	BC 08	-	-	+	-
Mycoplasma	lipofaciens	BC 09	-	-	+	-
Mycoplasma	meleagridis	ATCC 25294	-	-	+	-
Mycoplasma	pullorum	BC 10	-	-	+	-

Table 2: Summary of the exclusivity results for the target channels (Mg and Ms). Results for the target channels were as expected. No false positives were observed. Results for the IC and EnC were also as expected. Results for the EnC were negative as culture samples were used.

Sensitivity - Limit Of Detection

Meticulous testing has proven the outstanding sensitivity of the **vet**proof® Mycoplasma Gallisepticum-Synoviae qPCR LyoKit, with limits of detection as low as 2.5 genomic equivalents per reaction for M. gallisepticum and 5 genomic equivalents per reaction for M. synoviae.

Mg & Ms GE/rxn	Rate of recovery Mg (FAM)		Rate of recovery Ms (HEX)	
1×10^6	16/16	100%	16/16	100%
1×10^5	16/16	100%	16/16	100%
1×10^4	16/16	100%	16/16	100%
1×10^3	16/16	100%	16/16	100%
1×10^2	16/16	100%	16/16	100%
50	16/16	100%	16/16	100%
25	16/16	100%	16/16	100%
10	16/16	100%	16/16	100%
5	16/16	100%	16/16	100%
2.5	16/16	100%	13/16	81%
1	8/16	50%	7/16	44%
0	0/16	0%	0/16	0%

Table 3: Summary of the sensitivity results over all matrices, extraction methods and two batches. The LOD was determined at approximately 2.5 GE per reaction for Mycoplasma gallisepticum and 5 GE per reaction for Mycoplasma synoviae. GE = genomic equivalents

2. ENHANCED WORKFLOW EFFICIENCY – TRULY READY-TO-USE FORMAT

By lyophilizing the reaction mix directly into the tubes, we've eliminated the need for any time-consuming preparation steps. Simply add your sample, and you're ready to run the qPCR assay – saving you valuable time and reducing the risk of handling errors and contamination.





Figure 3 & 4: Reaction mix lyophilized into the PCR tubes. Simply add your sample.

3. ROBUST PERFORMANCE ACROSS DIFFERENT SAMPLE MATRICES, EXTRACTION METHODS AND qPCR CYCLERS

Extensive validation trials with the **vet**proof® Mycoplasma Gallisepticum-Synoviae qPCR LyoKit across diverse sample matrices, extraction methods, and qPCR cyclers, have proven the exceptional robustness of the qPCR kit, ensuring consistent, high-quality results under all conditions.

- Sample matrices: swabs (upper respiratory tract swabs & cloacal swabs), tissue samples, culture samples and FTA cards
- Extraction methods: heat boil, lysis buffer, spin column and magnetic bead extraction
- qPCR cyclers: Applied Biosystems™ 7500 Fast, AriaMx, CFX96™, LightCycler® 96/480, Mx3005P, QuantStudio™
- The **vet**proof® Mycoplasma Gallisepticum-Synoviae qPCR LyoKit is broadly applicable on real-time PCR cyclers equipped with FAM, HEX, ROX and CY-5 (or equivalent) channels.

Contact us at info@biochek.com experience the future of Mycoplasma testing with vetproof® **Mycoplasma Gallisepticum-Synoviae qPCR LyoKit!**



SPOTLIGHT ON THE RING TRIAL

DETERMINING LABORATORY PERFORMANCE

About the Ring Trial

The Ring Trial gives BioChek customers the opportunity to determine their ELISA performance by testing defined samples on a specific selected antibody test kit. It also provides participants insight into how their results compare to other laboratories.

The Ring Trial is open to all BioChek customers, but only a limited number of panels are available each year.

Performance

The accuracy and precision of ELISA results define performance.

Accuracy is the degree of exactitude to the true value of a quantity (s/p or titer) (reproducibility).

Precision is the degree of repeated measurements (repeatability) under similar circumstances, showing the same results.

When accuracy and precision are acceptable according to the standards of the Ring Trial, the results are considered reliable; the laboratory has then successfully passed the Ring Trial and is rewarded with a ‘Certificate of Achievement’.

Sample Description

Samples within the same category are identical. Participants will test samples in duplicate and analyze in two separate runs.

All titers for samples within the same sample category form a ‘category titer’ per participant. The ‘Ring Trial Titer’ is the mean titer of all category titer of all participants combined.

Final Results Ring Trial 2024

In 2024, the Ring Trial focused on Infectious Bursal Disease Virus (IBD).

A 3-standard deviations range (99.72% confidence interval) was calculated for each sample category from the mean titers obtained by BioChek’ s Quality Control Department (The BioChek QC Range). A 2SD range (95.44% confidence interval) was calculated from the mean titers obtained by all participants of the ring trial (The Ring Trial Range).



Of the 173 participants, 77,5 % (n = 134) successfully passed all set criteria and received the “Certificate of Achievement”.

Participants who failed to pass all set criteria received tips and tricks from BioChek to identify and correct the cause of the inaccuracy, and were given the opportunity to repeat the Ring Trial and submit the results to BioChek for validation.

Ring Trial 2025 NDV

The BioChek Ring Trial 2025 will focus on Newcastle Disease Virus (NDV), and run from March 15th to July 15th, 2025.

Invitations with full details will be send in January 2025.

SOFTWARE UPDATES

BIOCHEK II MONITORING SOFTWARE UPDATES IN Q4 2024

Earlier this year, we launched a new version of the BioChek Monitoring Software, introducing compatibility with the Tecan Sunrise ELISA reader and the Summary Dashboard. Since then, we have continued to further develop and improve both the software and the dashboard.

Software Update | version 2024.2

Release date: 24 Sep 2024

BioChek Monitoring Software release version 2024.2 features

- A new and improved qPCR quantification tool
- Software can now calculate the pathogen load in the original liquid sample. The use of standards is required for this feature, and the result will automatically show up on the report.
- Dashboard suitable for poultry
- Various other improvements and enhancements

Software Update version 2024.3

Release date: 17 Dec 2024

BioChek Monitoring Software release version 2024.3 features

- Compatibility with the new BioChek PCR assays that contain either ExC or EnC controls, such as the new vetproof ASF PCR kit, the new vetproof MgMs PCR kit and the new vetproof PRRS PCR kit
- New EnC and ExC PCR assay reports
- Various other improvements and enhancements

BioChek
SMART VETERINARY DIAGNOSTICS
Adding value to test results

Users of BioChek Monitoring Software will receive a system notification to install the new version. A working internet connection is required to implement updates.

For any questions relating to our software, please contact support@biochek.com.

Features of the Summary Dashboard

- Compare ELISA data, adding valuable information to your monitoring system
- Serological profile of an infection between the animal groups of a farm
- Serological overview of multiple infections between animal groups to assess primary and secondary causes of a clinical problem
- Vaccine responses
- Monitor and benchmark vaccine take and compliance in and over farms
- Benchmark infection status of all farms or animal groups of your integration or veterinary practice

BIOCHEK ACADEMY - LAB TRAINING

EQUIPING LAB TECHNICIANS WITH CLINICAL, TECHNICAL AND PRACTICAL SKILLS

BioChek organises Open Lab Training throughout the year at the BioChek Academy facilities in Reeuwijk, The Netherlands.

This immersive 2,5 day course provides theoretical understanding of methodologies and equipment, and is designed to equip laboratory technicians with the clinical, technical and practical application of the BioChek ELISA and qPCR tests, methodologies and equipment.

The training combines theoretical with interactive and hands-on sessions. It further provides an introduction and understanding of the BioChek II Monitoring Software and the BioChek ELISA Assay Robot (BEAR).

Participants of the Lab can also enjoy social activities such as a boat trip or a walk along the canals of Gouda, and even some traditional Dutch 'kegelen'. Upon successfully completing the training, participants receive a **Certificate of Achievement**.















BIOCHEK SOUTH AFRICA LAB TRAINING

The BioChek South Africa lab training session, held on 29th and 30th October 2024 at the Birchwood Hotel and conference centre, provided a comprehensive overview of key aspects of ELISA testing. The session covered several important areas, including:

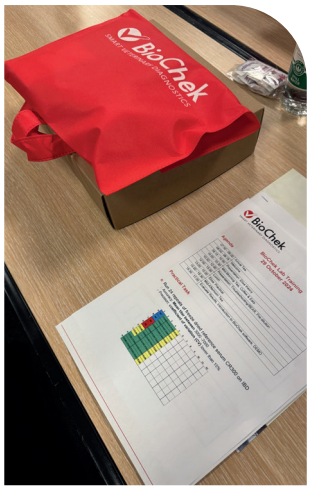
- Kit Handling and preparation
- BioChek ELISA protocol
- Using reference controls
- ELISA equipment and maintenance
- Troubleshooting common ELISA issues

The training consisted of both theoretical presentations and hands-on practical session on the BioChek ELISA testing, allowing attendees to apply what they learned. Participants came from across Sub-Saharan Africa, including South Africa, Kenya, Zambia, Zimbabwe, Botswana, and Namibia.

Feedback from the customers in attendance was overwhelmingly positive. Attendees reported gaining valuable skills in ELISA testing, which will enhance their capabilities in diagnostic work.

Overall, the session was a success, providing practical knowledge and fostering greater confidence in using BioChek's ELISA systems.











Interested in attending an Open BioChek Lab Training or a customized session for your lab technicians?

Contact us at labtraining@biochek.com for more information and to sign up.

LOOKING BACK AT Q4 2024

A RECAP OF Q4 2024 INDUSTRY EVENTS

November was a busy month for BioChek. Not only did some of the team visit and present at events, but we also participated in Poultry-focused congresses with booths and sponsorship, such as the Annual congress of the Poultry Group of the South African Veterinary Association (SAVA) bringing together veterinarians, poultry industry professionals, and researchers and the OVUM - Congreso Latinoamericano de Avicultura - an important poultry-focused event for South America, whereas events like EuroTier a leading trade fair for animal farming and livestock management.

BioChek's SSA team members Natasha Swanepoel and Yegeshini Naidoo represented BioChek and engaged in discussions on the latest developments in poultry health, production, biosecurity, genetics, and welfare.

SAVA 6-8 Nov 2024
Muldersdrift, South Africa



picture above - stand BioChek
picture below - BioChek delegates



OVUM 12-15 Nov 2024
Punta del Este, Uruguay
booth D45 in the main hall

OVUM - Congreso Latinoamericano de Avicultura - is an important poultry-focused event for South America.

We presente ...e only WOAH- of antibodies





In the second week of November, BioChek participated simultaneously in two large industry events, one in South America and one in Europe with the new corporate booth designs. Both events were a great success for the BioChek team to catch up with customers, launch the new product MgMs (see article on page 9 in this issue) and share developments in our portfolio.

EUROTIER 12-15 Nov 2024

Hannover, Germany

BioChek booth

A22 in hall 21









UPCOMING EVENTS Q1 2025

WE LOOK FORWARD TO MEETING UP AT ONE OF THESE UPCOMING EVENTS.

January 2025

week 5

SUN	MON	TUE	WED	THU	FRI	SAT
26	27	**28**	**29**	**30**	**31**	1

IPPE

International Production & Processing Expo

Join us at IPPE from 28-30 January 2025 and visit us at the BioChek **booth #B9047** in Hall B at the Georgia World Congress Center

On the 29th at 12:00PM in **room B301**, we will host a lunch meeting where BioChek's Jantina De Vylder (Business Unit Manager Poultry) will present "*SPOTLIGHT ON aMPV | Monitor your Flock with ART ELISA*"

Atlanta, Georgia USA

March 2025

week 11

SUN	MON	TUE	WED	THU	FRI	SAT
9	10	**11**	**12**	**13**	**14**	15

VIV Asia

Event for Livestock Production and Animal Husbandry

We look forward to meeting you at our **booth No. 3-4521** during VIV Asia 2025 anytime on 12-15 March 2025 where we will share the latest developments and new products in our portfolio. Leading up to VIV Asia, BioChek is hosting a distributors meeting from 8-10 March.

Bangkok, Thailand

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