

**Combined Workshop 2025 of the WPSA
Working Group 6 (IFRG) and Working Group 12 (Physiology)
from October 22-24, 2025 in Berlin, Germany**

WEDNESDAY, 22 October 2025

10:00 – 11:00 **Participant registration/Badge collection**

11:00 – 11:30 **Welcome and outline of the program**

Keynote lecture:

11:30 – 12:15 **Strategies stimulating microbiota colonization and gut health in broilers**

Nadia Everaert, Muhammad Zeeshan Akram, Haoran Zhao, Matthias Corion, KU Leuven, Belgium

12:15 – 13:15 **Lunch Buffet**

Session 1: Gut health and microbiome

13:15 – 13:35 **Early life fecal microbiota transplantation from different donors modulates cecal microbiota, short-chain fatty acid profiles, and fermentation capacity in broiler chickens**

Horan Zhao, Muhammad Zeeshan Akram, Luke Comer, Elena Fako, Matthias Corion, Nadia Everaert, KU Leuven, Belgium

13:35 – 13:55 **Sex specific gut microbiota, host response, and intestinal function in broilers: implications for separate rearing strategies**

Matthias Corion¹, Muhammad Zeeshan Akram¹, Ester Arévalo Sureda¹, Luke Comer¹, Jeroen Maertens², Natasja Smeets², Nadia Everaert¹, ¹KU Leuven, Belgium, ²Kemin Europa NV, Belgium

13:55 – 14:15 **Linking microbiota and performance in commercial turkey flocks**

Jean E. de Oliveira, Luisa A. Gene, Anne Goderis, Henk Enting, Jennifer Roux-Hardy, Marine Maudoux, Michel Richet, Cargill Animal Nutrition and Health, Belgium

14:15 – 14:45 **Coffee/tea break**

Session 2: Influence of incubation factors on embryonic and post-hatch development

14:45 – 15:05 **Green monochromatic light during incubation shapes hypothalamic function and metabolic traits via epigenetic mechanisms**

Asaf Marco, Joanna Bartman, Tali Rosenberg, Hadar Parnas, Ronit Yosofov, Natalie Avital-Cohen, Ron Weiss, Gal Harmatz, Israel Rozenboim, The Hebrew University of Jerusalem, Israel

15:05 – 15:25 **Hypoxic manipulation during incubation: effects on muscle vascularization, growth, and woody breast incidence in broilers**

Amit Haron, Melanie Emambu, Gay Levkovich, Dimitry Shinder, Dror Sagi, Shelly Drujan, Agricultural Research Organization, Volcani Center, Israel

15:25 – 15:45 **Effects of thermal manipulations of broiler embryos from 7 to 16 days of incubation on embryo heat production, yolk sac consumption and organogenesis**

Itallo Conrado Sousa Araújo^{1,2}, Illona van den Anker-Hensen¹, Borge Laurensen¹, Monique Ooms¹, Henry van den Brand¹, ¹Wageningen University, the Netherlands, ²Federal University of Minas Gerais, Brazil

15:45 – 16:00 **Short break**

Session 3: Optimizing incubation temperature profiles and short poster presentations

16:00 – 16:20 **Investigation into the effect of incubation temperature on sex ratios of ostrich embryos**

Zanell Brand, B.S. Snyman, Western Cape Department of Agriculture, South Africa

16:20 - 16:40 **Differences in temperature incubation between conventional and slower-growing broilers**

Emmanuel Chesnais, Jenna Coton, Roberto Yamawaki, HUBBARD, France

Poster presentations

16:40 – 16:45 **Temperature stimulation of Lohmann Brown laying hen embryos: influence on hatching performance and growth during the first 10 weeks post-hatching**

Arlette Harder, Barbara Tzschentke, Institute for Agricultural and Urban Ecological Projects (IASP) at Humboldt-Universität zu Berlin, Germany

16:45 – 16:50 **Relationship between hatching egg and chick quality in broiler chickens**

Florian Wehle, Optibrut GmbH, Nordhorn, Germany

16:50 – 16:55 **Effect of herbal feed supplementation on intestinal health and Goblet cells in chickens experimentally infected with *Eimeria Tenella***

*Ferdinand Grégoire Tchodo¹, Simplicie D. Karou¹, Wéré Pitala¹, Kokou Tona¹, Batomayena Bakoma²,
¹CERSA, University of Lomé, Togo, ²Laboratory of Pharmaceutical Sciences Research, University of Lomé, Togo*

18:00 – 21:00 **Welcome evening (visit to the brewery of the Technical University Berlin)**

THURSDAY, 23 October 2025

Session 4: In-Ovo Sex determination and -identification

Keynote lecture:

08:30 – 09:15

GOLDA: A genetic solution to end male chick culling in the egg industry

Yuval Cinnamon¹, Enbal Ben-Tal Cohen¹, Olga Genin^{1,3}, Michael Pfann^{1,2}, Michal Mimon¹, Izel Cohen^{1,2}, Tatiana Kushnir¹, Amit Haron¹, Dmitry Shinder^{1,3}, Shanthi Dharanivasan¹, Eva Lamed³, Christina Tepe³, Shelly Druyan¹, ¹Agriculture Research Organization, Volcani Centre, Israel; ² The Hebrew University of Jerusalem, Israel; ³ Poultry by Huminn – NRS, Israel

09:15 – 09:35

Male chick detection and culling prevention with a duplex recombinase polymerase amplification in a SIMPLE microfluidic platform

Simão Santos¹, Dries Vloemans¹, Vasso Skouridou², Ciara K. O'Sullivan², Jeroen Lammertyn¹, Dragana Spasic¹, ¹KU Leuven, Belgium, ²INTERFIBIO, Universitat Rovira I Virgili, Avinguda Països Catalans, Spain

09:35 – 09:55

Evaluation of *in-ovo* sex determination via PCR analysis of allantoic fluid

Jeroen Snijder, Carla van der Pol, HatchTech Research, The Netherlands

09:55 – 10:15

Onset of pain perception in pre-hatch chicks: anatomical and electrophysiological evidence

Longfei Cheng^{1,2}, Anna Papazoglou³, Marco Weiergraeber³, Damian Krings³, Qin Pu², Inga Tiemann¹, Ruijin Huang², ¹Osnabrueck University of Applied Sciences, Germany, ²University of Bonn, Germany, ³Federal Institute for Drugs and Medical Devices (BfArM), Germany

10:15 – 10:45

Coffee/tea break

Session 5: Perinatal development

10:45 – 11:05

The chicken hatching muscle: a bioenergetic and transcriptomic view

Jonathan Dayan, Zehava Uni, The Hebrew University of Jerusalem, Israel

11:05 – 11:25

The physiological response of the broiler embryos to different egg storage durations: a transcriptomic study

Anne Pennings^{1,2}, Kristen Diehl³, Jan Wijnen², Carla van der Pol², Jeroen Snijders², Henry van den Brand¹, ¹Wageningen University & Research, The Netherlands, ²HatchTech Group, The Netherlands, ³USDA-ARS, Beltsville, U.S.A.

11:25 – 11:45

Acoustic detection of thermal stress in day-old chicks using conventional recurrent neuronal networks

Özge Günaydin¹, Mina Mounir¹, Cui Gao¹, Fien Vanlerberghe², Eduardo Romanini², Hilke Willemsen², Tomas Norton¹, KU Leuven, Belgium, ²Petersime NV., Belgium

11:45 – 12:05

Feed and water consumption and body weight development in layer chickens during the first 3 days post-hatch

Zhanyue Wu, Henry van den Brand, B.F.A. Laurensen, M. Ooms, I. van den Anker, T.E.M. Johansson, I.C. de Jong, Roos Molenaar, Wageningen University and Research, The Netherlands

12:05 – 13:05

Lunch Buffet

Session 6: 50 years of IFRG & several incubation topics

Keynote lecture:	
13:05 – 13:50	Past, present, and future of incubation and fertility research: what have we been talking about at the IFRG over the last 50 years? <i>Nick French, retired, UK</i>
13:50 – 14:10	Functional properties of a natural incubator – the avian nest <i>Charles Deeming, Lincoln University, UK</i>
14:10 – 14:30	Differences in eggshell conductance within a batch of eggs and the effect on hatchability and chick quality <i>Lotte Hebbink, Royal Pas Reform, The Netherlands</i>
14:30 – 14:50	Early transfer of eggs after <i>in-ovo</i> sex identification – a practical study <i>Anke Förster, Josefine Stuff, Jörg Hurlin, Agri Advanced Technologies, Germany</i>
14:50 – 15:20	Coffee/tea break with 50 years IFRG cake

Session 7: Students Competition for Nick French Price

15:20 – 15:40	Impact of 2% CO₂ during storage on hatching eggs quality and embryonic development <i>Pauline Javaloyes, Nelly Bernardet, Frédéric Elleboudt, Hans Adriaensen, Anne Collin, Sophie Réhault-Godbert, INRAE, Université de Tours, France</i>
15:40 – 16:00	Red and green light increase non-visual, extra-retinal photoreceptor mRNA expression in the chick brain at hatch <i>Louisa Kosin, Zuzanna Gardocka, Alex R. Johnston, Simone L. Meddle, The University of Edinburgh, UK</i>
16:00 – 16:20	Effect of early thyroid hormone manipulation on broiler embryo development and metabolism <i>Melanie Emambu^{1,2}, Amit Haron¹, Dima Shinder^{1*}, Shelly Druyan¹, ¹Agricultural Research Organization, Volcani Center, Israel, ²The Hebrew University, Israel</i>
16:20 – 16:40	Effective disinfection of hatching eggs with accelerated electrons <i>Josefine Stuff, Christian Große-Brinkhaus, Jörg Hurlin, Agri Advanced Technologies, Germany</i>
16:40 – 17:00	Interval-based pre-incubation thermal stimulation reverses egg storage-induced developmental arrest, enhancing CAM angiogenesis, mineral accretion, hatchability and postnatal physiology in tropical Plymouth Rock hybrid chickens <i>Sasu Prince¹, Adjei-Mensah Benjamin², Agbehadzi Richard Koblah², Rachida Adjima Tankouano¹, Felicia Emmanuella Ellison³, Danquah Cynthia Amaning³, Tona Kokou¹, Hamidu Jacob Alhassan³, Were Pitala¹, ¹CERSA, Université de Lomé, Togo, ²University of Ghana, Ghana, ³College of Agriculture and Natural Resources, KNUST, Ghana</i>
17:00 – 17:20	Effects of three genetic strains and thermal manipulation on hatching parameters, chick quality and organs of broiler chickens raised in tropical climate <i>Andande et al., Centre d'Excellence Régional en Sciences Aviaires (CERSA), Université de Lomé, Togo</i>
17:20 – 17:35	Meeting of the evaluation committee for the Nick French Prize
19:00 – 23:00	Gala dinner – celebration of the 50th Anniversary of WG6 IFRG; Award ceremony, the announcement of the results of the Nick French Award competition, cultural event

FRIDAY, 24 October 2025

Session 8: Fertility and Reproduction

09:00 – 09:20	Fertility and hatchability of ostrich eggs following artificial insemination <i>Pfunzo Muvhali^{1,2}, Maud Bonato³, Irek Malecki^{2,4}, Schalk Cloete², ¹Directorate Animal Sciences, Western Cape, South Africa, ²University of Stellenbosch, South Africa, ³University of Venda, South Africa, ⁴The University of Western Australia, Australia</i>
09:20 – 09:40	Effect of Egg Storage Time on Fertility, Hatchability, and Chick Quality in Shuborno Strain <i>Raziul Islam, Kamrun Nahar Monira, Shabiha Sultana, Yousuf Ali, Shakila Faruque, Sazedul Karim Sarker, Bangladesh Livestock Research Institute, Bangladesh</i>
09:40 – 10:00	Semen characteristics and artificial insemination of Cabot's Tragopan (<i>Tragopan caboti</i>) <i>Marcel Bawej, Marta Michalak, Artur Kowalczyk, Wroclaw University of Environmental and Life Sciences, Poland</i>
10:00 – 10:20	Reproductive traits in traditional Italian light turkeys (<i>Meleagris gallopavo</i>) breeds reared for biodiversity conservation: a preliminary study <i>Stefano Paolo Marelli¹, Luisa Zaniboni¹, Nicolaia Iaffaldano², Vera Perricone¹, Silvia Cerolini¹, ¹University of Milan, Italy, ²University of Molise, Italy</i>
10:20 – 10:50	Coffee/tea break

Session 9: Cracking the hatchability crisis?

	Keynote lecture
10:50 – 11:35	Fertility of chickens: Understanding and modelling the 'minefield' for balanced genetic improvement <i>Victor Olori, Global Genetic Evaluation System and Team, Aviagen, UK</i>
11:35 – 11:55	Fertility concerns in the United States: Is there a failure to incorporate changes to breeder management? <i>Mike Wineland, Hatchery Consult LLC, North Carolina, U.S.A</i>
11:55 – 12:15	Fertility (and hatchability), what about the female? <i>Ron Meijerhof, Poultry Performance Plus, The Netherlands</i>

Wrap up of Combined Workshop and business meetings

12:15 – 12:30	Wrap up
12:30 – 12:45	Business meeting WG 6 (IFRG)
12:45 – 13:00	Business meeting WG 12
13:00 – 14:00	Lunch buffet and Goodbye