



JOINT INTERNATIONAL CONGRESS ON ANIMAL SCIENCE 2023

Co-organized by the European Federation of Animal Science (EAAP),
the World Association for Animal Production (WAAP) and Interbull

**CLIMATE CHANGE, BIODIVERSITY AND GLOBAL
SUSTAINABILITY OF ANIMAL PRODUCTION**

**FROM AUGUST 26 TO SEPTEMBER 1, 2023
LYON - FRANCE**



with



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The European Federation of Animal Science (EAAP)

Every year, the EAAP (The European Federation of Animal Science) organizes an international meeting which attracts between 900 and 2,000 people.



The main aims of the EAAP are to promote, by means of active co-operation between its members and other relevant international and national organizations, the advancement of scientific research, sustainable development and production systems; experimentation, application and extension; to improve the technical and economic conditions of the livestock sector; to promote the welfare of farm animals and the conservation of the rural environment; to control and optimise the use of natural resources in general and animal genetic resources in particular; to encourage the involvement of young scientists and technicians. More information on the organization and its activities can be found at www.eaap.org.

Address: Via G. Tomassetti 3 A/1
I-00161 Rome, Italy

Phone: +39 06 4420 2639

E-mail: eaap@eaap.org

Web: <http://www.eaap.org>

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1967-1972	J.M. Rijssenbeek (The Netherlands)
1972-1978	J.H. Weniger (Germany)
1978-1984	E.P. Cunningham (Ireland)
1984-1990	A. Roos (Sweden)
1990-1996	A. Nardone (Italy)
1996-2000	P. Solms-Lich (Germany)
2000-2004	A. Aumaitre (France)
2004-2008	J. Flanagan (Ireland)
2008-2012	K. Sejrsen (Denmark)
2012-2016	P. Chemineau (France)
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Welcome to the EAAP + WAAP + INTERBULL 2023 in Lyon



On behalf of the French Organising Committee, we are very delighted to welcome you to attend the Joint International Congress on Animal Science co-organised by the European Federation of Animal Science (EAAP), the World Association for Animal production (WAAP) and Interbull to be held in Lyon, the capital of the Auvergne-Rhône-Alpes French region, from August 26th to September 1st, 2023.

The general topic of this Congress is 'Climate change, biodiversity and global sustainability of animal production'. Different sessions are jointly organised between the EAAP, WAAP, Interbull and also other partners to cover various areas of knowledge related to animal science, such as genetics, nutrition, physiology, animal health and welfare.

The Auvergne-Rhône-Alpes region covers an area of 69,711 km² in the central-east part of the south of France. It is characterised by diverse natural resources and topographies (including high mountains to the east and volcanos to the west), climates, cultures, folklore, architecture, and languages. The region accounts for 11.9% of the French economic output. It hosts 48,500 farms (with an average of 59 ha), including 51.9% of them for the production of animal products and 10.4% with both plant and animal production. About 20% and 13% of the farms concern the production of beef and milk respectively, and 11% are with sheep, goats or other herbivores. This places the Auvergne-Rhône-Alpes region 3rd in place amongst the other French regions in agriculture. The region had 13% of organic farms, 30% with other labels or quality signs and 30% with short supply chains.



Apart from the outstanding scientific programme, social activities is organised in Lyon, which was the former capital of the Gauls at the time of the Roman empire, a major economic hub during the Renaissance and today the third-largest city and second-largest metropolitan area of France. The city is known as 'the gastronomic capital of the world' and is recognised for its historical and architectural landmarks and for its universities.

The city is also known for its light festival and is a major centre for chemical, pharmaceutical and biotech industries. Several exceptional sites of the region are inscribed on the UNESCO World Heritage List including the historical district of Lyon.

We welcome you and wish you an exceptional stay in Lyon!

Jean-François Hocquette

Senior scientist of INRAE

President of the French Association for Animal Production

The Joint International Congress on Animal Science (EAAP annual congress, WAAP congress and Interbull meeting) is locally co-organised by INRAE (The French National Research Institute for Agriculture, Food, and Environment) and the French Association for Animal Production (AFZ), on behalf of the European Federation of Animal Science (EAAP) and the World Association for Animal production (WAAP) and by "France Génétique Elevage" on behalf of Interbull.

National Organizers of the 74th EAAP Annual Meeting

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Nutrition

Latifa Najar
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Animal Physiology

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Xavier Druart

Livestock Farming Systems

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Horse Production

Marion Cressent
Léa Lansade

Insects

Thomas Lefevre
Anna Zaidman-Rémy

Cattle Production

René Baumont
Christophe Denoyelle

Sheep and Goat Production

Jérémie Jost



Conference website: www.eaap2023.org

YoungEAAP



What is the YoungEAAP?

YoungEAAP is a group of young scientists organized under the EAAP umbrella. It aims to create a platform where scientists during their early career get the opportunity to meet and share their experiences, expectations and aspirations. This is done through activities at the Annual EAAP Meetings and social media. The large constituency and diversity of the EAAP member countries, commissions and delegates create a very important platform to stay up-to-date, close the gap between our training and the future employer expectations, while fine-tuning our skills and providing young scientists applied and industry-relevant research ideas.

Committee Members at a glance

- Ines Adriaens (president)
- Jana Obsteter (vice president)
- Giulia Gislou (secretary)

YoungEAAP promotes Young and Early Career Scientists to:

- Stay up-to-date (i.e. EAAP activities, social media);
- Close the gap between our training and the future employer expectations;
- Fine-tune our skills through EAAP meetings, expand the special young scientists' sessions, and/or start online webinars/trainings with industry and academic leaders;
- Meet to network and share our graduate school or early employment experiences;
- Develop research ideas, projects and proposals.

Who can be a Member of YoungEAAP?

All individual members of EAAP can join the YoungEAAP if they meet one of the following criteria:
Researchers under 35 years of age OR within 10 years after PhD-graduation.

Just request your membership form (ines.adriaens@kuleuven.be) and become member of this network!

Country information: France

Facts about France	
Population	68,014,000
Mainland Portugal	633,186 km ²
Atlantic coast line	3,427 km
National Languages	French

Welcome to France!

France is a vaguely hexagonal country, located in the west of the European continent and bordered by Spain, Italy, Switzerland, Germany, Luxembourg and Belgium. The majority language spoken is French.

This small hexagon has always been a center of civilization, a crossroads of people and a natural bridge between Europe and America.

France is bathed by two seas: the Mediterranean Sea to the south, the Atlantic Ocean to the west and to the north of the island of Great Britain: the Channel Strait.

In the south, a mountain range called the Pyrenees separates France from Spain. To the east, a mountain range called the Alps separates France from Italy. Still to the east, a more modest mountain range, the Jura, separates France from Switzerland. A large European river, the Rhine, is the natural border between France and Germany.

France is rich in culture, gastronomy, traditions and festivals. With its 18 regions, each region has its own historical, cultural and gastronomic heritage. You can discover the Auvergne-Rhône Alpes region with all its traditions and historical inspirations. Some cities have medieval inspirations that give them an ancient charm.

The gastronomic culture is very important for the French, bakeries are present at every street corner. You will be able to taste the famous baguette and croissant which are so much dreamed. Let us not forget the culture of the wine. Indeed, each region produces all kind of wine. In the Auvergne Rhône Alpes region, domains such as La Chartreuse, Chateau Bizard, Domaine Autrand are very well known and famous.



Agriculture in France

In 2019, with 77.0 billion euros, France had the highest total agricultural production among the Member States (about 18% of the total production by the EU), followed by Germany (58.2 billion or 14%), Italy (57.8 billion or 14%), Spain (51.7 billion or 12%), the Netherlands (29.1 bn or 7%), Poland (26.4 billion or 6%) and Romania (19.0 billion or 5%).

Agriculture is a source of economic growth in France: in 2019, the value generated by all agricultural and agri-food activities represented 3.4% of the French GDP. In addition, the foreign trade surplus of agri-food products was 7.8 billion euros in 2019.

Agriculture is an activity that creates jobs: in 2019, production and processing activities related to agriculture, forestry, fishing and agri-food industries employed 1.4 million people (employees and non-salaried) in full-time equivalent, or 5.2% of total national employment. In metropolitan France, women represented 30% of permanent agricultural workers in 2019.

Agriculture has a strong anchoring on the French territory: in 2020, agriculture represented 269,000 km² of the French territory. In metropolitan France, this represents 49% of the territory. In addition, France had 416,400 farms in 2020, 20% less than ten years ago. Cattle production uses 33% of the French agricultural area. The average area of French farms continues to increase to reach 69 ha in 2020 (compared to 55 ha in 2010). The French agriculture is also characterized by a growing importance of organic farming.



France has an important animal production: the country is indeed the second largest European dairy producer and the largest beef producer with the greatest diversity of bovine breeds over the World. It also has the third largest pig population (behind Germany and Spain). The main animal productions are dairy products (36% in value), bovine meat (21%), pork (13%), poultry meat (12%), eggs (6%), veal (4%) and small ruminants (3%).



About Lyon

Lyon constitutes a very interesting place to hold the EAAP + WAAP + INTERBULL congress as it is crossed by two rivers, the Rhône and the Saône, and immediately takes on a particular attraction, that of the banks and quays, walks, daydreams on the terrace, cruises, etc. The city connotes a certain sweetness of life.

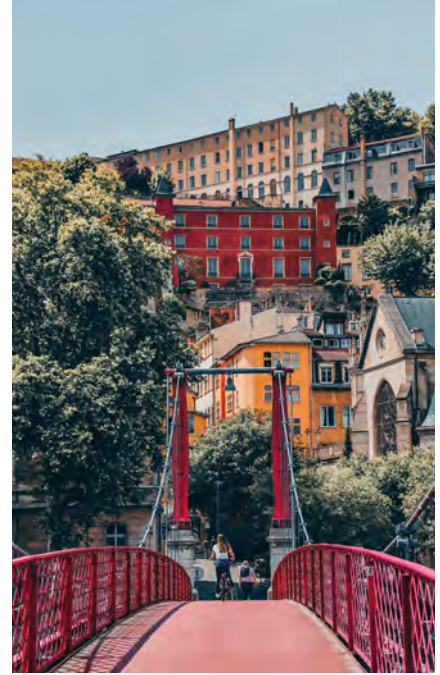
The city born in 43 B.C. preserves a heritage of which its inhabitants are proud and have at heart to develop by making it live: the restaurants, the bookshops, the art galleries or the second-hand shops that enliven the Vieux-Lyon are just a few examples.

One of its most popular attractions, the Parc de la Tête d'Or, adjacent to the convention center, is the largest urban park in France. Totally dedicated to leisure, discovery and relaxation, its green spaces are the scene of many activities: zoos, rides, stores, shows, pony rides, botanical gardens, etc. Everything is gathered to make your visit a magical moment. Young and old children, tourists, sportsmen or simple walkers, everyone will find his happiness there.

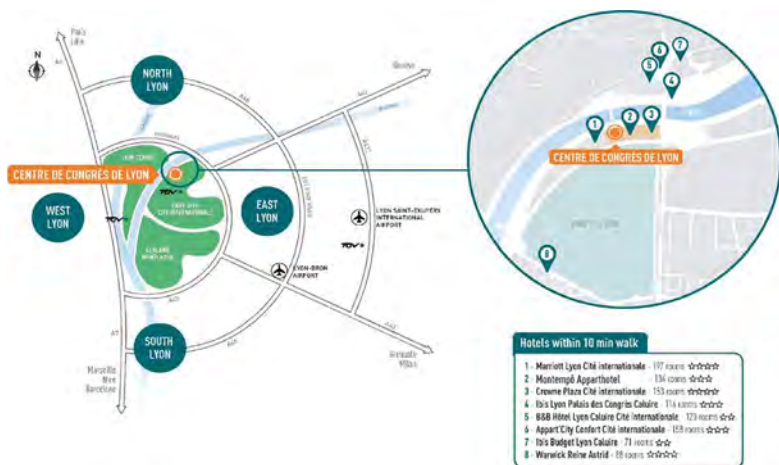
The Auvergne-Rhône-Alpes region offers a wide range of destinations such as the Alps and Mont Blanc, the roof of Europe, the Drôme and Ardèche, evocative of Provence, and the Auvergne and its volcanoes, where many regional research INRAE laboratories are located.

Lyon, internationally known as the capital of gastronomy, as well as its region, have very popular and famous culinary meat and fish specialties such as the pâté en croute (pâté baked in a crust), the brioche sausage, the Poularde de Bresse or even the Lyon quenelle (pike quenelles often served with a crayfish sauce). The region also offers beef meat from breeds adapted to the terroir such as Charolaise, Limousine, Salers, Aubrac.

It will also be the occasion to taste the regional wines in agreement with some of the twenty cheeses AOC (protected designation of origin) of the region such as the Fourme d'Ambert, the Reblochon, the Beaufort, the Abondance, the Saint-Nectaire, the Salers, etc.



Conference venue

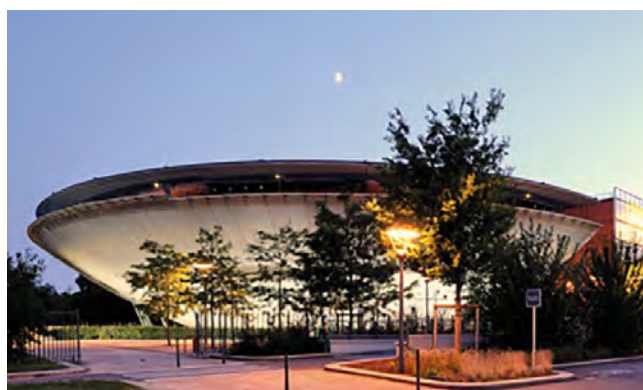
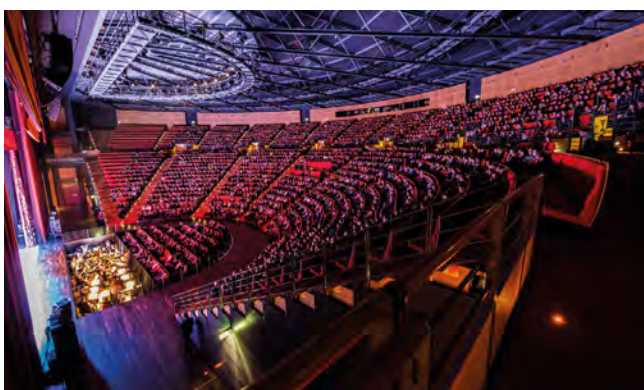


Centre de Congrès de Lyon
1 Quai Charles de Gaulle
69006 Lyon - FRANCE

Centre de Congrès Lyon

The EAAP2023 conference will take place in the Congress Center of Lyon.

In the heart of the Cité internationale, right in the city center, on the edge of the Parc de la Tête d'Or, the Lyon Convention Centre is ideally located and easily accessible by all means of transport.



Practical information

How to get there via Public Transport

It is very easy to travel around Lyon as the city benefits from a very developed transportation system, as well as the traditional taxi.

By bus

- C1 from Lyon Part Dieu train station – Stop at Cité internationale | Centre de Congrès
- C2 from Lyon Part Dieu train station – Stop at Cité internationale | Transbordeur
- C4 from the Jean Macé metro station – Stop at Cité internationale | Centre de Congrès
- C5 from the Cordeliers metro station – Stop at Cité internationale | Centre de Congrès
- C26 from the Grange Blanche metro station – Stop at Cité internationale | Transbordeur
- Bus 70 from Lyon Part Dieu train station – Stop at Cité internationale | Transbordeur

It's possible to take a ticket directly in stations.

Save time and plan your arrival: <http://www.tcl.fr>

By taxi

A taxi station/Cab points are also available at the Congress Center and the Amphitheater.

- Taxi Lyon - Tel: +33 (0)4 72 10 86 86
- Allo taxi - Tel: +33 (0)4 78 28 23 33
- Taxi Lyon - Tel: +33 (0)4 78 26 81 81

By train

The Lyon Convention centre is just 10 minutes away from the Lyon Part Dieu TGV train station and just 15 minutes away from the Perrache TGV train station.

Save time-plan your arrival: <http://www.sncf-connect.com>

By road

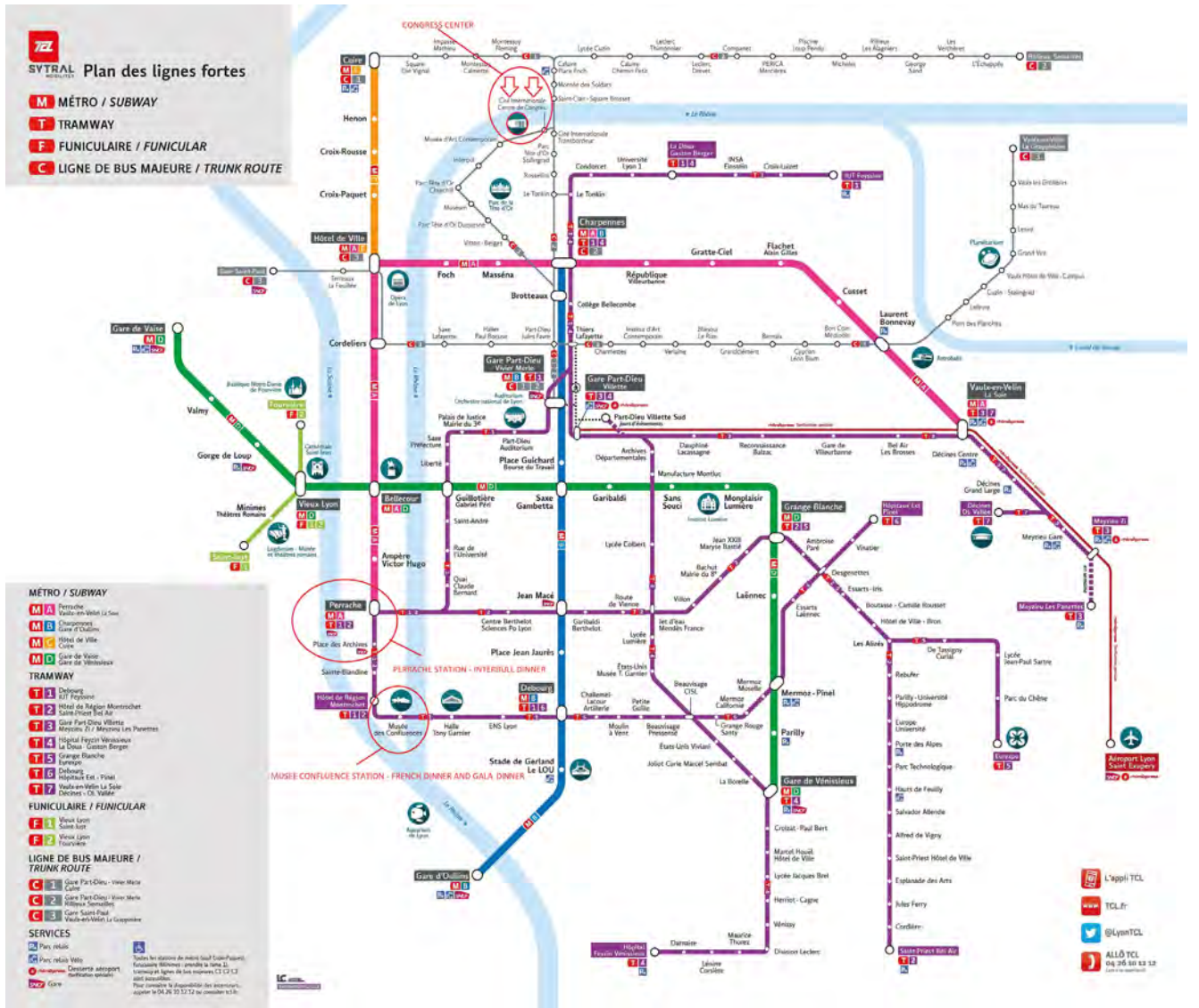
Ideally located in the heart of Europe, the Lyon Convention centre is just 1 hour away from Geneva, 3 hours away from Turin, 4 hours away from Paris, 4 and a half hours away from Milano and 5 hours away from Barcelona by car. The venue has 3 carparks onsite in the heart of the Cité Internationale district.

- Address: Centre de Congrès de Lyon – 1 Quai Charles de Gaulle – 69006 Lyon - FRANCE
- Périphérique Nord Exit at Porte de Saint Clair
- GPS coordinates: Latitude: 45.7851676 | Longitude: 4.8528885
- 3 carparks onsite

By air

- Lyon city centre is less than 30 minutes away from the Saint Exupéry International Airport via the Rhone Express shuttle service
- Lyon Saint Exupéry airport, France's 2nd regional airport, serves 117 destinations of which 80 are international with more than forty airlines
- 50 airports are served daily
- Totally interconnected, Lyon Saint Exupéry airport is directly connected to the TGV (high speed trains) and to the city in under 30 minutes thanks to the Rhone Express shuttle service
- An additional business airport – Lyon Bron is just 20 minutes outside the city

Save time and plan your arrival: <http://www.lyonaerports.com>



Useful information

Official language

The official working language of the congress is English. No translation will be provided.

Passport and visa

Entry formalities in France vary according to the country of origin. European Union (EU) citizens and the European Economic Area (EEA) as well as third-country nationals holding a residence permit of a Schengen State, do not need a Visa to enter in France. All non-EU citizens are asked to contact their local embassies for any specific requirements. All foreign citizens entering France must have either a valid passport or a national valid ID card.

Currency and money exchange

Currency in France is the Euro (€). Most banks are open at 08:30 – 12:30 13:30 – 18:00. Monday through Friday. (Banks at the airports are open 08:30 – 12:00 and 13:30 – 18:00 h). Post offices are open from 9:00 – 12:30 and from 14:00 – 18:30 h. Please notice that there will be no exchange facilities at the congress venue. France also has an extensive network of cash dispensers which operate 24 hours a day. ATM's are widely distributed through the city. Most credit cards allow you to withdraw money from ATM's. You can exchange money from at least four exchange bureaus from Monday to Saturday.

Local time zone

The local time in France is the Central European Time (UTC/GMT +2 hours).

Climate

August, the last month of the summer, in Lyon, is a moderately hot month with average temperatures ranging between max 27.2 °C (81 °F) and min 16 °C (60.8 °F).

Electricity

France uses a 220 V system, sockets have the European standard and plugs are two-prong.

Conference app

An EAAP 2023 App will be available from www.eaap2023.org to all registered delegates before the conference. The conference app will contain comprehensive information about the conference, venue, program and abstracts, as well as interactive possibilities.

Information for participants

The registration desk for Interbull on level 2 'Gratte-Ciel' is open for participants the following days and times:

- Saturday, 26 August 07:30 – 18:00
- Sunday, 27 August: 07:30 – 16:00

The registration desk for WAAP and EAAP on level -1 'Bellecour' is open for participants the following days and times:

- Sunday, 27 August: 07:30 – 18:00
- Monday, 28 August: 07:30 – 19:30
- Tuesday, 29 August: 07:30 – 18:30
- Wednesday, 30 August: 07:30 – 18:30
- Thursday, 31 August: 07:30 – 18:00

Guidelines for authors oral communication

The Organising Committee of the 74th EAAP Annual Meeting will do its utmost to help authors for their presentations and to facilitate their arrival and stay at the congress.

Please take a few minutes to read the following guidelines regarding the on-site organisation of the congress for the smooth running of the sessions.

Oral presentations

After having picked-up your badge at the Welcome Area, you need to go give your presentation file to the technicians in the Preview room located in the Welcome Area.

Please be sure to upload your presentation at least half a day before your scheduled oral presentation.

All presentations scheduled for Monday morning must be uploaded on Sunday.

The preview room will be open from Sunday 27th to Thursday 31st from 08:00 to 18:00.

1. Technical guideline

Presentation format

The file for your oral presentation must be created in a PowerPoint file (.ppt or .pptx). Your presentation should be composed of slides in a landscape format 16:9 according to your allocated time (on average 15 slides for 15 mins and 30 slide for 30 mins).

You will not be allowed to use your personal computer in the conference room.

If you insert images or pictures they must be in the following format: .jpg, or .gif (.pict prohibited) and must be in high definition to allow efficient viewing. Images/pictures resolution should be 1920×1080 minimum (width by height).

If you have video files attached to your power point presentation they must be in the following format: .mpg, .mpeg, .avi, .wmv or .mov and must be saved in the same folder as the presentation.

And do not forget, when saving your final presentation on a USB device, to make sure to include your video files if any, and all links to these multimedia files.

If you operate under Mac:

Oral communications in Macintosh format are supported by the preview system after on-site conversion:

- Please allow sufficient time for conversion of Macintosh files to a format compatible with the pre-projection system.
- Conversion of Keynote presentations with specific animations is not guaranteed.
- Prefer Windows-compatible fonts

The fonts installed on the workstations (pre-projection and rooms) support standard Western European characters.

In the conference room

The computer equipment available in the conference rooms is strictly identical to that in the pre-projection room. A computer screen on the lectern allows you to follow the presentation without having to turn towards the screen. In the event of technical problems, please contact the technical staff in the room, who will take appropriate action.

Each conference room is equipped with the following:

- A video projection system
- Laptop computer with mouse

Click on your name to open your oral presentation and press the 'Escape' key to return to the main menu at the end of your presentation.

Do not come at the last minute in the meeting room hoping to connect your own laptop or your USB key: you will NOT be able to connect it. You should go to the preview room.

Duration of your presentation

Please respect the time allotted to your presentation.

Do not go over the time limit and remember to save time for discussion. Remember to speak directly into the microphone at a suitable speed for everybody to understand.

Official language

The official language of the Congress is English, which means that all presentations and questions must be delivered in English.

2. Authors disclosure of potential conflicts of interest

Except for talks from sponsors, the Scientific Committee requires that all presentations should be as free of commercial bias as possible and free of any information on commercial products or services.

Poster presentations

Posters will be presented in portrait format (A0, 118,9 cm high and 84,1 cm wide) with the title, the addresses of authors, the picture of the presenting author and the scientific content (introduction, methods, results, discussion, conclusion).

The poster should be printed by the participants.

Please indicate the number of your abstract to the staff in the poster room for installation.

The number of your poster will be displayed on the top of the panel.

Posters belonging to the Sessions 01 – 46 should be put up on Monday morning and the poster discussion session takes place on Tuesday August 29th from 14.00 - 15.00 h, when authors should be in attendance at their poster.

The posters should be removed before Tuesday August 29th 18.00 h.

Posters belonging to Sessions 47 – 96 should be put up on Wednesday morning and the poster discussion session takes place on Wednesday August 30th from 14.00 - 15.00 h, when authors should be in attendance at their poster.

The posters should be removed before Thursday August 31st 15.00 h.

General programme

Day	Time	Subject
Saturday, 26 August	08:00 - 17:30	Interbull meeting
	19:30 - 23:00	Interbull dinner
Sunday, 27 August	08:00 – 18:30	Writing and Presenting Scientific papers
	08:00 – 18:00	Interbull meeting and WAAP Plenary Sessions
	18:00 – 20:00	Welcome cocktail
Monday, 28 August	08:30 – 13:00	EAAP study commission sessions
	14:00 – 18:00	EAAP study commission sessions
	18:15 – 20:00	Welcome and Ceremony awards
	20:00 – 22:00	Welcome cocktail
Tuesday, 29 August	08:30 – 13:00	Plenary Session
	14:00 – 15:00	Poster Session
	15:00 – 18:30	Study commission sessions
	20:30 – 01:30	French dinner
Wednesday, 30 August	08:30 – 13:00	Study commission sessions
	14:00 – 15:00	Poster Session
	15:00 – 18:30	Study commission sessions
	18:30 – 20:00	EAAP General Assembly
Thursday, 31 August	08:30 – 13:00	Study commission sessions
	14:00 – 18:00	Study commission sessions
	19:30 – 01:00	Gala dinner
Friday, 1 September	08:00 – 18:00	Technical tours

WAAP Plenary Session (Session 1)

August 27 th 9:00 – 18:00	
'Climate change, biodiversity and global sustainability of animal production'	
09:00 – 09:10	Welcome and Introduction to the 18 th World Congress for Animal Production <i>Philippe Chemineau (France), President of WAAP</i>
Control of green house gas emissions in ruminants farming Co-Chairs: Jean-Louis Peyraud (<i>INRAE and FAA France</i>) and Anne Mottet (<i>FAO Italy</i>) Sponsor: C-Lock inc./GreenFeed Associated partner: the French Academy of Agriculture (FAA)	
09:10 – 09:20	Sponsor presentations and Introduction
09:20 – 10:00	The real place of livestock in GHG emissions and their control for climate change <i>Kris Johnson, Washington State University (USA)</i>
10:00 – 10:40	Global GHG emissions from livestock systems: updated baselines, projections, and mitigation options <i>Dominik Wisser, FAO (Italy)</i>
10:40 – 11:10 Coffee break	
11:10 – 11:30	Genetic control of ruminant methane emissions in livestock <i>Anouk Van Breukelen, Wageningen University Research (the Netherlands)</i>
11:30 – 11:50	Effective strategies to mitigate methane emissions by ruminants <i>Claudia Arndt, ILRI (Kenya)</i>
11:50 – 12:10	Tannins, legumes and methane production by ruminants <i>Bart Lardner, University of Saskatchewan (Canada)</i>
12:10 – 12:30	Enteric methane reduction in ruminants by early-life interventions <i>Diego Morgavi, INRAE (France)</i>
12:30 – 14:00 Lunch break	
Biodiversity as a lever for sustainable animal production Co-Chairs: Michel Rieu (<i>FAA France</i>) and Matthias Gauly (<i>UBZ Italy</i>) Sponsor: Sommet de l'Elevage Associated partner: The French Academy of Agriculture (FAA)	
14:00 – 14:10	Sponsor presentations and Introduction <i>by the co-Chairs</i>
14:10 – 14:50	Sustainable intensification of animal production with sylvopastoral systems <i>Julian Chara, CIPAV (Colombia)</i>
14:50 – 15:30	Sustainability of low-inputs livestock systems <i>Anne Mottet, Food & Agriculture Organization - FAO (Italy)</i>
15:30 – 15:50	Agroecological transformation of tropical livestock production through integrating improved forages <i>An Notenbaert, Alliance Bioversity and CIAT (Kenya)</i>
15:50 – 16:20 Coffee Break	
16:20 – 16:40	Livestock-wildlife conflicts: A struggle for land use and conservation in the U.S. Mountain West <i>Bret Taylor, United States Department of Agriculture (USA)</i>
16:40 – 17:00	Community-based breeding programs (CBBP): Platforms for genetic improvement and biological discovery <i>Joram M. Mwacharo, ICARDA (Ethiopia)</i>
17:00 – 18:00	General discussion and Concluding remarks of both sessions

EAAP-WAAP Plenary Session (Session 26)

August 29th 8:30 – 12:30

Chair: Isabel Casasús

08:30 – 08:45 The livestock sector and research in animal science in France
Xavier Fernandez (France)

08:45 – 09:00 Questions of farmers to science
Christiane Lambert (France)

Primum non nocere: Can we feed the planet without depleting its resources?

09:00 – 09:30 Solutions to achieve sustainable and healthy diets worldwide
Hervé Guyomard (France)

09:30 – 10:00 Moving towards bold food systems resilience
Jessica Fanzo (USA)

10:00 – 10:30 A social-ecological agenda for transforming land management toward sustainability
Tobias Plieninger (Germany)

10:30 – 11:00 Coffee break

11:00 – 11:30 General discussion chaired by Isabel Casasús

Leroy Award Presentation

11:30 – 12:00 EAAP beyond Europe: establishing and using capacity to feed the World
Johannes Soelkner (Austria)

WAAP Award Presentation

12:00 – 12:30 Potential impact of antioxidants and plant derived polyphenols on animal health and productivity
Frank Dunshea (Australia)

Organization of scientific programme

In the 'Room Overview' section (pages 19-23) several abbreviations are shown which are to do with the organization of the various sessions. These are explained below.

EAAP Commissions

The Scientific Programme of the EAAP Annual Meeting is organized by the Scientific Committee of EAAP, chaired by the Vice-President for Scientific Affairs, Dr Johannes Sölkner. The Scientific Committee comprises the Presidents of the 11 Commissions (see pages 100-101) and is assisted by a Secretary, Dr Geoff Pollott.

The 11 Commissions are: Cattle (C), Genetics (G), Health and Welfare (H+W), Horse (H), Livestock Farming Systems (LFS), Nutrition (N), Physiology (Ph), Pig (P), Sheep and Goat (S+G), Insects (I) and Precision Livestock Farming (PLF).

Type of sessions

- **Theme sessions (T)** are on key topics in animal science suggested by a Commission at its Annual Commission Meeting and consist of invited and offered papers
- **Industry sessions (I)** are led and supported by industry organizations involved with a Commission and comprise invited and offered papers
- **Free Communications (bottom-up; BU)** are sessions created from submitted abstracts and titles are announced in early April after abstracts have been received
- **Discovery sessions (D)** are invited and submitted single/multiple presentations on hot/emerging topics suggested by a Commission
- **Challenge sessions (C)** are free format (workshop, open committee, round table) to debate important issues and have no theatre paper presentations, other than an introductory talk
- **Young EAAP sessions (YE)** are to identify topics particularly oriented towards early-career scientists
- **Project sessions (P)** are sessions based around a project which wants to share its results with the wider scientific community, often combined with submitted abstracts.
- **Working Group sessions (WG)** are the results of an EAAP working group

All sessions are open to all delegates to the Annual Meeting.

Room overview

Sunday 27 August 2023
9:00 – 18:00

Room: Auditorium Lumière

Session 01

WAAP Plenary Session

Chair: Chemineau

9:00 – 12:30

Control of green house gas emissions in ruminants farming

Chair: Peyraud / Mottet

14:00 – 18:00

Biodiversity as a lever for sustainable animal production

Chair: Rieu / Gauly

Room	Monday 28 August 2023 8:30 – 13:00	Monday 28 August 2023 14:00 – 18:00
Prestige Gratte Ciel	Session 02 Sustainable livestock farming – defining metrics and rationalising trade-offs? – Part 1 (LFS; D; ATF)	Session 14 Sustainable livestock farming – defining metrics and rationalising trade-offs? – Part 2 (LFS; D ATF)
Foyer Amphitheatre Rhone	Session 03 Up side and down side of 'genomic selection' (G; T; Interbull)	Session 15 Breeding for climate change – mitigation (G; P; ReLivestock)
Bellecour 2 (Streamed WAAP sessions)	Session 04 Adaptation of breeding strategies and genetics to climate change, right animal for right environment (G; WG-AnGR)	Session 16 Alternative and new feed resources to reduce feed/ food competition and enhance circularity of livestock production (N; T)
Bellecour 1	Session 05 Climate care dairy farming: follow up – Part 1 (C; P; CCCFarming)	Session 17 Climate care dairy farming: follow up – Part 2 Chair: Edouard / Becciolini (C; P; CCCFarming)
Gratte Ciel 2	Session 06 Production of high quality animal products and implementation of new technologies in animal husbandry (C; P; GREENANIMO)	Session 18 Carcass grading for quality and efficiency – underpinning future sustainability of beef and lamb (C; T)
Bellecour 3	Session 07 Challenges of fish nutrition for sustainable aquaculture (N; T)	Session 19 Advances in nutritional modelling and feeding systems (in memory of Daniel Sauvant) (N; D)
Gratte Ciel 1	Session 08 Various topics in pig production (P; B)	Session 20 Early career competition 'Innovative approaches to pig and poultry production', supported by Wageningen Academic Publishers (P; EC)
Tête D'or 2	Session 09 Insect applications (I; T)	Session 21 Insects as feed: sustainability, legislation and safety (I; T)
Tête D'or 1	Session 10 Impact of epigenetics and genetics in determining animal physiology (Ph; T)	Session 22 Environmental stress: mitigating the adverse effects on animal physiology (Ph; T)
Gratte Ciel 3	Session 11 Improving pig welfare in conventional production systems (H+W; T)	Session 23 Improving animal welfare in conventional production systems (H+W; T)
Roseraie 3	Session 12 Technologies for outdoor systems: which application and opportunities? (PLF; T)	Session 24 New traits and proxies from sensor technologies for breeding purpose (G/PLF; T)
Roseraie 2	Session 13 Innovations and technological advancements in small ruminant production with particular emphasis in Mediterranean semi-extensive or extensive systems (S+G; T)	Session 25 Molecular measures of diversity and their role in monitoring and management of breeds (G; WG; Interbull, WG-AnGR)

Tuesday 29 August 2023 8:30 – 12.30	Room	Tuesday 29 August 2023
Room: Main Amphitheatre Session 26 EAAP-WAAP Plenary Session, Leroy and WAAP Awards Lectures		Posters 14:00 – 15:00
		Theatre 15:00 - 18:30
	Prestige Gratte Ciel	Session 27 Breeding programs & strategies (G; B)
	Foyer Amphitheatre Rhone	Session 28 Breeding for improved animal health and welfare (G; T)
	Foyer Amphitheatre Parc	Session 29 Innovative animal products and farming systems oriented to new consumer demand and trend (C; P; BovINE)
	Tête D'or Lounge	Session 30 Looking back, looking forward – Research on Beef production and quality in China and France (CSBF) and between Australia-France-China (The Triangle Project) (C; T)
	Bellecour 2 (Streamed WAAP sessions)	Session 31 Pasture based solutions to realise a role for ruminants in a sustainable food system (LFS; T)
	Bellecour 1	Session 32 Beyond rumen: role of nutrition in cattle's intestinal health (N; T) Sponsor presentation – Selko
	Gratte Ciel 2	Session 33 Horses in farms and territories: challenges and new solutions (H; T)
	Bellecour 3	Session 34 Sustainable pig and poultry production, including the use of water (P; WG)
	Gratte Ciel 1	Session 35 Is there a future for experimental animal research in Europe and, if so, what is it? (P; P)
	Tête D'or 2	Session 36 Technologies in insect production + controlling quality (I; C)
	Tête D'or 1	Session 37 Omics and integrative analyses towards understanding inter-organ cross-talk and whole body physiology of livestock (Ph; T)
	Gratte Ciel 3	Session 38 Equal opportunities and open communication for early career scientists (yEAAP; EC)
	Roseraie 3	Session 39 TechCare and ClearFarm: pilots on PLF tools for monitoring animal welfare (PLF; P)
Roseraie 2	Session 40 The transition from pregnancy to lactation in dairy goats and sheep (S+G; T)	

Room	Wednesday 30 August 2023 8:30 – 13:00	Wed 30th Aug pm
		Posters 14:00 – 15:00
		Theatre 15:00 – 18:30
Prestige Gratte Ciel	Session 41 Open the black box: using omics to better understand biological interpretation of complex traits (G; T)	Session 55 Breeding for climate change – adaptation (G; P; ReLivestock)
Foyer Amphitheatre Rhone	Session 42 Animal genetics to address food security and sustainability (G; P; FABRE-TP) Sponsor presentation – Illumina	Session 56 Establishing breeding programs in extensive systems (including developing regions) with climate change in mind (G; WG; FAGRWG)
Foyer Amphitheatre Parc	Session 43 Better calves for better farms: how the young stock can be the key to success (C/G; D)	Session 57 Grassland management and grassland-based feeding systems for efficient and sustainable milk and meat production (C; T)
Tête D'or Lounge	Session 44 Building on a resilient dairy sector – from animal, farm and regional perspective – Part 1 (C; P; R4D/ADSA)	Session 58 The future of animal products: improved quality management, more alternatives or cell-based products? (C; D)
Bellecour 2 (Streamed WAAP sessions)	Session 45 Transformation of livestock practices in response to society's expectations on animal welfare, market demand for animal products and environmental issues (LFS; T)	Session 59 Environmental challenges of cattle tropical grazing systems (C; T; CIRAD, CaSSECS)
Bellecour 1	Session 46 Innovation in ruminant nutrition and feeding (N; T)	Session 60 Minerals in animal nutrition: supplementation – Part 1 (N; I)
Gratte Ciel 2	Session 47 One-health, one nutrition, one Earth: role of nutrition in livestock production (N; D)	Session 61 Resilient livestock farming systems in the face of climate and other global challenges – adaptation and mitigation (LFS; T)
Bellecour 3	Session 48 How can poultry farming systems evolve to meet the major societal and environmental challenges? (P; WG)	Session 62 Poultry and pig low-input and organic production systems' welfare (P/H+W; P)
Gratte Ciel 1	Session 49 Monoguthealth – Part 1 (P; P)	Session 63 Monoguthealth – Part 2 (P; P)
Tête D'or 2	Session 50 Insect genetics and reproduction (I; WG)	Session 64 Project session: Farmyng (I; P)
Tête D'or 1	Session 51 Leveraging the microbiome for resilience and sustainability in ruminant production – insights from H2020 HoloRuminant (Ph; P)	Session 65 Remote sensing applied to livestock farming: discovering physiological and ethological clues to optimize productive performance and animal welfare (Ph; T)
Gratte Ciel 3	Session 52 Nitrogen management in the dairy supply chain and other tools to improve the efficiency and sustainability of cattle farming (C; B)	Session 66 Innovation in non-ruminant nutrition and feeding (N; T)
Roseraie 3	Session 53 PLF for health and welfare – Part 1 (PLF/H+W; T)	Session 67 PLF for health and welfare – Part 2 (PLF/H+W; T)
Roseraie 2	Session 54 Life Green Sheep and Farm management to adapt goat and sheep farming to climate change: solutions and experiments (S+G; P)	Session 68 Small Ruminant Technologies (Sm@RT) and Thematic network EuroSheep (S+G; P)

Room	Thursday 31 August 2023 8:30 – 12:00 Commissions meetings 12.00-13.00	Thursday 31 August 2023 14.00 – 18-00
Prestige Gratte Ciel	Session 69 Methods & genomic prediction (G; B) Genetics Commission Meeting	Session 83 Genetic diversity Chair: Neumann / Schiavo (G; B)
Foyer Amphitheatre Rhone	Session 70 Genetic parameters & GWAS (G; B)	Session 84 EuroFAANG: genotype-to-phenotype research across Europe and beyond (G; P)
Foyer Amphitheatre Parc	Session 71 Building on a resilient dairy sector – from animal, farm and regional perspective – Part 2 (C; P; R4D)	Session 85 Climate care dairy farming: herd management – Part 3 (C; D)
Tête D'or Lounge	Session 72 What are the stakeholder and societal expectations of intrinsic and extrinsic quality of animal products? (C; D) Cattle Commission meeting	Session 86 How to address stakeholder and societal expectations of intrinsic and extrinsic quality of animal products? (C; D)
Bellecour 2 (Streamed WAAP sessions)	Session 73 Molecules in animal nutrition: over and above building blocks (N; T)	Session 87 Carbon sources and sinks within global livestock systems (LFS; T)
Bellecour 1	Session 74 Balancing the feed for the economy, the environment, and society (N; T) Nutrition Commission meeting	Session 88 Minerals in animal nutrition: basal diet – Part 2 (N; I)
Gratte Ciel 2	Session 75 Livestock based circularity for health and sustainable land use (LFS; T) Livestock Farming Systems Commission meeting	Session 89 Explainable models and artificial intelligence supporting farming decisions (PLF; T)
Bellecour 3	Session 76 Humans and horses: from One Health to One Life perspectives (H; T) Horse Commission meeting	Session 90 Genetics in horses (H; T)
Gratte Ciel 1	Session 77 Trade-offs between health, production and welfare in pigs and poultry: which tools do we have and which research is needed? (P; C) Pig Commission meeting	Session 91 Nitrogen excretion and ammonia emission in pig and poultry production (P; B)
Tête D'or 2	Session 78 Insect nutrition (substrates) & insect health (I; T) Insect Commission meeting	Session 92 Inflammation and energy metabolism in young and adult livestock (Ph; T)
Tête D'or 1	Session 79 Improved insight into the reproductive physiology of livestock (Ph; T) Physiology Commission meeting	Session 93 Recent advances on in vitro systems (from cell culture to in vitro digestion methods): relevance as alternatives to animal experimentation for livestock research (Ph; T)
Gratte Ciel 3	Session 80 Animal behaviour (H+W; B) Health and Welfare Com. meeting	Session 94 Free communications in animal health and welfare (H+W; T)
Roseraie 3	Session 81 Precision feeding (PLF/N; T) Precision Livestock Farming Commission meeting	Session 95 Happy Delivering innovative and holistic milk based monitoring and decision-making PLF tools – collaboration with HappyMoo (PLF; P)
Roseraie 2	Session 82 Product quality and efficiency of small ruminant production systems (S+G; T) Sheep and Goat Commission Meeting	Session 96 ERANET-funded 'Grass To Gas' and EU-funded 'SMARTER' projects (S+G; P)

Scientific programme

Sunday 27 August 2023

Session 01.

WAAP Plenary Sessions

Room: Bellecour 2

Date: Sunday 27 August 2023; 9:00 – 18:00

Chair: Chemineau / Peyraud / Mottet / Rieu / Gauly

Theatre Session 01	Book of Abstracts page
9:20 The real place of livestock in GHG emissions and their control for climate change <i>invited</i> K. Johnson	149
10:00 Global emissions from livestock systems: updated baselines, projections, and mitigation options <i>invited</i> D. Wisser, G. Tempio, A. Falcucci and G. Cinardi	149
10:40 Coffee break	
11:10 Genetic control of ruminant methane emissions in livestock <i>invited</i> A.E. Van Breukelen, M.N. Aldridge, R.F. Veerkamp and Y. De Haas	150
11:30 Effective strategies to mitigate enteric methane emissions by ruminants <i>invited</i> C. Arndt	150
11:50 Tannins, legumes and methane production by ruminants <i>invited</i> H.H. Lardner	151
12:10 Enteric methane reduction in ruminants by early-life interventions <i>invited</i> D.P. Morgavi	151
12:30 Lunch break	
14:10 Sustainable intensification of animal production with silvopastoral systems <i>invited</i> J. Chára	152
14:50 Sustainability of low-input livestock systems <i>invited</i> A. Mottet	152
15:30 Agroecological transformation of tropical livestock production through integrating improved forages <i>invited</i> A.M.O. Notenbaert	153
15:50 Coffee break	
16:20 Livestock-wildlife conflicts: a struggle for land use and conservation in the U.S. Mountain West <i>invited</i> J.B. Taylor and H.N. Wilmer	153
16:40 Community-based breeding programs (CBBP): platforms for genetic improvement and biological discovery <i>invited</i> J.M. Mwacharo, A. Haile and B. Rischkowsky	154

Scientific programme

Monday 28 August 2023

Session 02.

Sustainable livestock farming – defining metrics and rationalising trade-offs? – Part 1

Room: Prestige Gratte Ciel

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Lee / O'Mara

	Theatre Session 02	Book of Abstracts page
8:30	'Sustainable livestock systems': what does this mean? – welcome and introduction <i>invited</i> F. O'Mara and M. Lee	154
8:45	Friend or Foe? The role of animal-source foods in healthy and environmentally sustainable diets <i>invited</i> L. Merbold, T. Beal, C. Gardner, M. Herrero, L. Iannotti, S. Nordhagen and A. Mottet	155
9:15	The economic sustainability of dairy production systems in the EU and beyond <i>invited</i> F. Thorne, E. Dillon, T. Donnellan, P. Jeanneaux, R. Jongeneel and L. Latruffe	155
9:45	Methods to assess the sustainability of livestock systems: challenges and opportunities <i>invited</i> E. De Olde	156
10:15	Coffee break	
10:45	SustAnimal – a multi-actor knowledge centre for livestock in future Swedish food systems <i>invited</i> M. Hetta, S. Agenäs, D.J. De Koning, H. Oscarsson, P. Peetz Nielsen and A. Wallenbeck	156
11:00	Breeding livestock for sustainable systems <i>invited</i> P.W. Knap, K.M. Olson and M.A. Cleveland	157
11:30	Panel discussion (morning) <i>invited</i> A. Granados and A.S. Santos	157
12:15	Use of grazing with dairy goats to design sustainable food systems H. Caillat, E. Bruneteau and B. Ranger	158
12:30	Benefits and limits of farm animals to control herbage mass, pests and weeds in orchards: a review G. Maillat, A. Dufils, F. Angevin, S. Ramoneteu, J.L. Peyraud and R. Baumont	158
12:45	A new concept for agro-ecological efficiency at different scales of ruminant production systems H. Nguyen-Ba, P. Veysset and A. Ferlay	159

Session 03.

Up side and down side of 'genomic selection'

Room: Tête D'or Lounge

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Miglior / Jornaux

	Theatre Session 03	Book of Abstracts page
8:30	Issues and perspectives in genomic selection in limited size breeds: the case of Italian Simmental <i>invited</i> N.P.P. Macciotta, L. Degano, D. Vicario and A. Cesarani	159

9:00	Impact of genomic selection on genetic diversity in five European local cattle breeds <i>J.J. Winding, T.H.E. Meuwissen, P. Croiseau, G. Restoux and R. Bonifazi</i>	160
9:15	Accounting for sequential genomic selection in broiler breeding <i>J. Hidalgo, D. Lourenco, S. Tsuruta, V. Breen, W. Herring and I. Misztal</i>	160
9:30	Changes in the genome due to genomic selection in two pig populations <i>Y.C.J. Wientjes, M.P.L. Calus, P. Bijma, A.E. Huisman and K. Peeters</i>	161
9:45	Practical approaches to managing increased homozygosity caused by genomic selection <i>invited C. Baes, C. Obari, B. Makanjuola, C. Rochus, C. Maltecca, F. Schenkel and F. Miglior</i>	161
10:15	Coffee break	
10:45	Positive and negative effects of genomic selection <i>invited I. Misztal</i>	162
11:15	Storing and analysing a million genomes on a desktop computer <i>G. Gorjanc, J. Obsteter, G. Mafra Fortuna, R. Ros-Freixedes, M. Johnsson and I. Pocrnic</i>	162
11:30	Large scale screening for genetic defects in Holstein cattle using transmission disequilibrium test <i>F. Besnard, M. Boussaha, H. Leclerc, J. Jourdain, D. Boichard and A. Capitan</i>	163
11:45	Genomic selection strategies and their potential to maintain rare alleles and de-novo mutations <i>M.F. Schrauf, Y.C.J. Wientjes, H.A. Mulder and J. Vandenplas</i>	163
12:00	Genomic prediction with selected sequence variants in gestation length of New Zealand dairy cattle <i>Y. Wang, K.M. Tiplady, E.G.M. Reynolds, M.A. Nilforooshan, C. Couldrey and B.L. Harris</i>	164
12:15	Novel runs of homozygosity islands in the Finnish Ayrshire population <i>K. Sarviaho, P. Uimari and K. Martikainen</i>	164
12:30	Sometimes we win, sometimes we lose: the consequences of genomic selection <i>invited D. Lourenco, F. Guinan, G. Wiggans, J. Dürr, S. Tsuruta and I. Misztal</i>	165

Session 04.

Adaptation of breeding strategies and genetics to climate change, right animal for right environment

Room: Bellecour 2

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Kargo / Sturaro

	Theatre Session 04	Book of Abstracts page
8:30	Old, native cattle breeds; from critically endangered to successfully utilized in niche productions <i>N. Svartedal and O. Vangen</i>	165
8:45	Kenyan pastoralists and climate change: breeding as a possible adaptation strategy? <i>J. Jandl, M. Wurzinger, L. Gichuki, B. Habermann, R. Siamito and T.A. Crane</i>	166
9:00	Adapting climate-smart breeding practices for small ruminants in pastoral communities of Kenya <i>J.M. Ojango, E. Oyieng, J.W. Gitau, N. Ndiwa, J. Gachora and A.W.T. Muigai</i>	166
9:15	Zooarchaeology for conservation biology: introducing ARETI <i>A. Spyrou, G. Hadjipavlou and D. Bradley</i>	167
9:30	A robustness proxy based on variations in energetic allocation to growth in Duroc fattening pigs <i>G. Lenoir, L. Flatres-Grall, R. Muñoz-Tamayo, I. David and N.C. Friggens</i>	167

9:45	Genetic architecture of skin histology with implications for heat tolerance in beef cattle <i>R.G. Mateescu, F.M. Rezende, K.M. Sarlo Davila, A. Hernandez, A.N. Nunez Andrade, G.A. Zayas, E.E. Rodriguez and P.A. Oltenacu</i>	168
10:00	Ewe-lamb allocation trade-offs shape ewe lifetime production depending on dietary energy scarcity <i>M. Hiltbold and F. Douhard</i>	168
10:15	Coffee break	
10:45	System performance of three dairy-beef genotypes divergent in carcass merit <i>N. Byrne, D. Fahy, M. Kearney and N. McHugh</i>	169
11:00	Characterization and main factors of variation of milk production in suckler cows <i>B. Sepchat, M. Barbet and A. De La Torre</i>	169
11:15	Mediterranean Baladi cattle presents adaptive traits to cope with climate change in the Near East <i>A. Shabtay, E. Lipkin, M. Soller, F. Garcia-Solares, J. Sölkner, E. Shor-Shimoni, A. Bagnato, M.G. Strillacci and M. Cohen-Zinder</i>	170
11:30	Effect of some environmental variables on milk traits in dairy sheep <i>F. Correddu, A. Cesarani, G. Gaspa, I. Peana, G. Fois, C. Dimauro and N.P.P. Macciotta</i>	170
11:45	Genomic tolerance to harsh climate conditions in beef cattle as a result of cross-breeding program <i>R. Tian and H. Asadollahpour Nanaei</i>	171
12:00	Expected selection responses in breeding plans aiming to limit environmental impacts of trout farming <i>S. Pouil, J. Aubin and F. Phocas</i>	171
12:15	Defining resilience traits in sheep from fibre diameter variation of wool <i>E.G. Smith, S.F. Walkom, D.J. Brown and S.A. Clark</i>	172
12:30	Evaluating the impact of uncertainty in estimated breeding values on optimal contribution selection <i>I. Pocrnic, J. Ortiz and G. Gorjanc</i>	172
12:45	Increasing genetic gain without compromising diversity by selection based on mating qualities <i>T.A.M. Niehoff, J. Ten Napel, P. Bijma, T. Pook, Y.C.J. Wientjes, B. Hegedús and M.P.L. Calus</i>	173

Session 05.

Climate care dairy farming: follow up – Part 1

Room: Bellecour 1

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Galama / Rees

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8:30	Holistic perspectives on climate care cattle farming <i>G. Van Duinkerken</i>	173
9:00	Climate care farming aspects in China <i>W. Wang</i>	174
9:30	Producer adoption of climate-smart agriculture practices on U.S. grazing lands <i>A. Blair, K. Cammack, H. Menendez, J. Brennan and K. Ehlert</i>	174
9:45	Assessing impacts of new legislation on Dutch dairy farms using a revised linear programming model <i>A. Van Der Linden, L.M. Alderkamp, C.W. Klootwijk, G. Holshof, N. Van Eekeren, F. Taube and C.E. Van Middelaar</i>	175
10:00	Gaseous emissions (building, storage, pasture) of dairy systems combining or not grazing and housing <i>N. Edouard, X. Vergé, C. Flechard, Y. Fauvel and A. Jacotot</i>	175

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11:00	Agri-food and net zero: a science-policy-society perspective	176
	<i>R. McGuire, S. Huws, C. Foyer, P. Forster, M. Welham, L. Spadavecchia, D. Curry and N. Scollan</i>	
11:15	Testing the effects of grassland swards for yield, greenhouse gas emissions and soil health	176
	<i>P.R. Hargreaves, D.Z. Kreismane, A. Dorbe, K. Klumpp, J. Bloor, A. Cieślak, M. Szumacher, A. Szejner and R.M. Rees</i>	
11:30	How to mitigate methane and ammonia emissions at the farm level with innovative approaches	177
	<i>P.J. Galama, H.J. Van Dooren, H. De Boer and C. Schep</i>	
11:45	Effect of mitigation measures on GHG and ammonia emissions of pilot farms in European countries	177
	<i>D. Ruska, K. Naglis-Liepa, P. Hargreaves, A. Lenerts, M. De Vries, P. Galma, A. Kuipers, A. Cieslak, J. Bell, R. Rees, V. Juskiene and M. Skorupka</i>	
12:00	Economic aspects of mitigation practices on pilot dairy farms in Europe	178
	<i>K. Naglis-Liepa, D. Ruska, A. Lenerts and D. Kreismane</i>	
12:15	Specialized or integrated systems: on-farm eco-efficiency of dairy farming in northern Germany	178
	<i>R. Loges, T. Reinsch, I. Vogeler, C. Kluss and F. Taube</i>	
12:30	Modelling methane emission from dairy cows, barn, and storage	179
	<i>S. Lashkari, F.R. Dalby and C.F. Børsting</i>	
12:45	Impact of sorbent application on NH ₃ and CO ₂ and CH ₄ gas emissions from dairy cattle manure	179
	<i>V. Juskiene, R. Juska, G. Kadziene, D. Stankeviciene and R. Juodka</i>	

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	<i>M. Klopčič, T. Perčič, M. Bric, S. Rogina, G. Šen, T. Kramer, J. Klopčič, D. Drašler and A. Dolinar</i>	

Session 06.

Production of high quality animal products and implementation of new technologies in animal husbandry

Room: Gratte Ciel 2

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Georgieva / Hocquette

Theatre Session 06

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8:45	PLS-DA analysis on hand-held spectrometer for on-line prediction of beef marbling in slaughterhouses	181
	<i>M. Kombolo, A. Goi, M. Santinello, N. Rampado, S. Atanassova, J. Liu, P. Faure, L. Thoumy, A. Neveu, D. Andueza, M. De Marchi and J.-F. Hocquette</i>	
9:00	Application of computed tomography and hyperspectral images for enhanced meat quality evaluation	181
	<i>T. Stoyanchev, I. Penchev, S. Georgieva, A. Daskalova and S. Atanassova</i>	
9:15	Effect of husbandry factors on marbling deposition	182
	<i>A. Nicolazo De Barmon, I. Legrand, J. Normand and J.J. Bertron</i>	
9:30	Effect of birth type on meat quality in Ile-de-France lambs	182
	<i>E. Achkakanova, I. Penchev and S. Georgieva</i>	
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	<i>N.R. Lambe, A. McLaren, K.A. McLean, J. Gordon and J. Conington</i>	

10:00 Do biomarkers of residual feed intake in beef cattle remain consistent regardless of feeding level? 183
G. Cantalapiedra-Hijar, K. Nedelkov, P. Crosson and M. McGee

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10:45 Practical application of Observer XT software for behaviour and welfare research in sheep and cattle 184
N.A. Bozakova and M. Halil

11:00 Software tools and technologies used to study animal behaviour-benefits and capabilities of Observer 184
M. Halil, N. Bozakova and S. Georgieva

11:15 Animal welfare: from research to practice 185
I. Veissier, V. Brunet, D. Ledoux and A. De Boyer Des Roches

11:30 Effects of warm climatic periods on dairy cow behaviour and welfare in a maritime European climate 185
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Session 08.

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Session 10. Impact of epigenetics and genetics in determining animal physiology

Room: Tête D'or 1

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Chair: Jammes

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Session 11.

Improving pig welfare in conventional production systems

Room: Gratte Ciel 3

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Chair: Gottardo / Blanco Penedo

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Session 12. Technologies for outdoor systems: which application and opportunities?

Room: Roseraie 3

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Chair: Maroto-Molina / Gautier

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Session 14.

Sustainable livestock farming – defining metrics and rationalising trade-offs? – Part 2

Room: Prestige Gratte Ciel

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Lee / O'Mara

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Session 15.

Breeding for climate change – mitigation

Room: Tête D'or Lounge

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Pszczola / Neumann

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Session 16. **Alternative and new feed resources to reduce feed/food competition and enhance circularity of livestock production**

Room: Bellecour 2

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Ranilla García / Stergiadis

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Session 17.

Climate care dairy farming: follow up – Part 2

Room: Bellecour 1

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Edouard / Becciolini

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Session 18.

Carcass grading for quality and efficiency – underpinning future sustainability of beef and lamb

Room: Gratte Ciel 2

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Pethick / Neveu

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Session 19.

Advances in nutritional modelling and feeding systems (in memory of Daniel Sauvant)

Room: Bellecour 3

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Baumont / Cannas

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Session 20. Early career competition ‘Innovative approaches to pig and poultry production’, supported by Wageningen Academic Publishers

Room: Gratte Ciel 1

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Vigors / Nilsson

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Session 21.

Insects as feed: sustainability, legislation and safety

Room: Tête D'or 2

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Chair: Veldkamp / Barbosa

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Session 22. Environmental stress: mitigating the adverse effects on animal physiology

Room: Tête D'or 1

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Zachut

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Tuesday 29 August 2023

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EAAP Plenary Session

Room: Amphitheatre

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Room: Prestige Gratte Ciel

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Chair: Egger-Danner / Martin

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Session 29.

Innovative animal products and farming systems oriented to new consumer demand and trend

Room: Foyer Amphitheatre Parc

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Resconi / Realini

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Session 30. Looking back, looking forward – Research on Beef production and quality in China and France (CSBF) and between Australia-France-China (The Triangle Project)

Room: Tête D'or Lounge

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Liu / Pethick

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Session 31.

Pasture based solutions to realise a role for ruminants in a sustainable food system

Room: Bellecour 2

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Boland / Baumont

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15:30	On farm grass growth prediction in Ireland – 4 year evaluation <i>E. Ruelle, L. Bonnard, D. Hennessy, L. Delaby and M. O'Donovan</i>	440
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Session 32.

Beyond rumen: role of nutrition in cattle's intestinal health

Room: Bellecour 1

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Kreuzer / Pinotti

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Session 33

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Room: Gratte Ciel 2

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Session 34. Sustainable pig and poultry production, including the use of water

Room: Bellecour 3

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Bee / Brodziak

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Session 35.

Is there a future for experimental animal research in Europe and, if so, what is it?

Room: Gratte Ciel 1

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Chalvon-Demersay / Van Milgen

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Session 36.

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Room: Tête D'or 2

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Session 37. Omics and integrative analyses towards understanding inter-organ cross-talk and whole body physiology of livestock

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Chair: Louveau

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Room: Gratte Ciel 3

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Chair: Pszczola / Sell-Kubiak / Newton / Obsteter / Gislou

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Session 39. TechCare and ClearFarm: pilots on PLF tools for monitoring animal welfare

Room: Roseraie 3

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Morgan-Davies / Llonch

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17:45	Exploration of indicators measured by PLF sensors to monitor pig welfare during transportation <i>H.-L. Ko, P. Fuentes Pardo, F. Jiménez Caparros, X. Manteca and P. Llonch</i>	502
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Session 40. The transition from pregnancy to lactation in dairy goats and sheep

Room: Roseraie 2

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Hernández-Castellano / Salama

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40.13	Effects of <i>Sulla flexuosa</i> hay as alternative feed resource on goat's milk production and quality <i>S. Boukrouh, A. Noutfia, N. Moula, C. Avril, J.-L. Hornick, M. Chentouf and J.-F. Cabaraux</i>	512
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40.15	Link between chest circumference at late gestation and milk somatic cell count in Sarda ewe-lambs <i>D. Sioutas, A. Ledda, A. Mazza, A. Marzano, M. Sini and A. Cannas</i>	513

Scientific programme

Wednesday 30 August 2023

Session 41.

Open the black box: using omics to better understand biological interpretation of complex traits

Room: Prestige Gratte Ciel

Date: Wednesday 30 August 2023; 8:30 – 13:00

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9:00 Biologically informed genomic predictions with the NextGPjI statistical analysis package E. Karaman, V. Milkevych and L. Janss	514
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9:30 How heritable are metabolomic features? An omic based approach in pigs S. Bovo, G. Schiavo, F. Fanelli, A. Ribani, F. Bertolini, V. Taurisano, M. Gallo, G. Galimberti, S. Dall'olio, P.L. Martelli, R. Casadio, U. Pagotto and L. Fontanesi	515
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11:30 A model including host genotype, gut microbiome, and fat deposition measures in swine F. Tiezzi and C. Maltecca	518
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12:00 Rumen microbiome promote host metabolism and microbial bile acids bio-transformation in sheep B.Y. Zhang, Y. Yu, X.Z. Jiang, Y.M. Cui, H.L. Luo and B. Wang	519
12:15 Blending multivariate models to predict feed efficiency and explore multiple omics in meat sheep Q. Le Graverand, F. Tortereau, C. Marie-Etancelin, A. Meynadier, J.L. Weisbecker and K.A. Lê Cao	520

12:30	The effect of dietary <i>Laminaria digitata</i> on the muscle proteome and metabolome of weaned piglets <i>D.M. Ribeiro, D.F.P. Carvalho, C.C. Leclercq, S. Charton, K. Sergeant, E. Cocco, J. Renaut, J.A.M. Prates, J.P.B. Freire and A.M. Almeida</i>	520
12:45	Search for new mutations in cattle by systematic whole genome resequencing <i>M. Boussaha, C. Ech�, C. Escoufflaire, C. Grohs, C. Iampietro, A. Capitan, M. Denis, S. Fritz, C. Donnadi�u and D. Boichard</i>	521

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41.27	Effect of mitochondrial DNA copy number on productive traits and meat quality in pigs <i>E. Molinero, R.N. Pena, J. Estany and R. Ros-Freixedes</i>	527
41.28	Multi-omics analysis revealed the interaction of microbiota and host in rumen of hanwoo <i>W.C. Park, J.W. Son, M.J. Jang, N.R. An, H.J. Choi, S.A. Jung, J.A. Lim, D.H. Kim, J.H. Cha, S.Y. Choi, Y.J. Lim, S.S. Jang, D.J. Lim and H.H. Chai</i>	527

Session 42.

Animal genetics to address food security and sustainability

Room: Foyer Amphitheatre Rhone

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Soelkner / Granados

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Session 43. Better calves for better farms: how the young stock can be the key to success

Room: Foyer Amphitheatre Parc

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Costa / Keatinge

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12:45	Effects of extending lactation for dairy cows on health, development and production of their calves <i>Y. Wang, R. Goselink, E. Burgers, A. Kok, B. Kemp and A.T.M. Van Kneegsel</i>	536
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Session 44.

Building on a resilient dairy sector – from animal, farm and regional perspective – Part 1

Room: Tête D'or Lounge

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Kuipers / Schuenemann

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Session 45. Transformation of livestock practices in response to society's expectations on animal welfare, market demand for animal products and environmental issues

Room: Bellecour 2

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Thenard / Boyle

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Session 46.

Innovation in ruminant nutrition and feeding

Room: Bellecour 1

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Stergiadis / Alvarez Rodriguez

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Session 47. One-health, one nutrition, one Earth: role of nutrition in livestock production

Room: Gratte Ciel 2

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Latifa / Weill

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Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Stadnicka / Meda

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9:00	Can we enhance environmental impact without compromising bird welfare in broiler systems? <i>invited</i> I. Kyriazakis	596
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Session 49.

Monoguthealth – Part 1

Room: Gratte Ciel 1

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Bee / Trevisi

Theatre Session 49	Book of Abstracts page
8:30 invited Host-microbiota interactions in swine and poultry: disentangling causes and effects <i>J.F. Pérez</i>	609
9:00 Glutamine and glucose metabolism in suckling low birth weight piglets supplemented with glutamine <i>D. De Leonardis, Q.L. Sciascia, S. Goers, A. Vernunft and C.C. Metges</i>	609
9:15 Creep feeding (dry, liquid) and pen hygiene (low, high) impacts pre-weaning growth in pigs <i>S.R. Vasa, G.E. Gardiner, K. O'Driscoll, G. Bee and P.G. Lawlor</i>	610
9:30 The impact of early incubation temperature on broiler walking ability and final meat quality <i>T. Kettrukat and M. Therkildsen</i>	610
9:45 <i>In vitro</i> and <i>in vivo</i> analysis of bioactive substances growth and antioxidant activities <i>M. Mangan, C. Metges and M. Siwek</i>	611
10:00 Prophybiotics, a novel approach for <i>in ovo</i> gut microbiome reprogramming of broilers <i>R.N. Wishna-Kadawarage, R. Hickey and M. Siwek</i>	611
10:15 Coffee break	
10:45 Antibacterial plant blends modulate gut microbiota in organic piglets challenged with <i>E. coli</i> F18 <i>K. Jerez-Bogota, M. Jensen, O. Højberg and N. Canibe</i>	612

11:00	Role of caecal microbiota in flock weight heterogeneity <i>M.Z. Akram, E.A. Sureda, L. Comer and N. Everaert</i>	612
11:15	¹ H-NMR metabolomics reveals alterations in the metabolism of ascarid-infected laying hens <i>O.J. Oladosu, B.S.B. Correia, B. Graf, D. Liebhart, C.C. Metges, H.C. Bertram and G. Daş</i>	613
11:30	Validated machine-learning model to detect IUGR piglets <i>R. Ruggeri, G. Bee, P. Trevisi and C. Ollagnier</i>	613
11:45	<i>In vivo</i> validation of a non-invasive tool to collect intestinal content in pigs – CapSa- <i>I. García Viñado, F. Correa, P. Trevisi, G. Bee and C. Ollagnier</i>	614
12:00	Effect of creep feeding (liquid milk, dry and liquid diet) on pig growth and intestinal structure <i>E.A. Arnaud, G.E. Gardiner, M. Chombart, J.V. O'Doherty, T. Sweeney and P.G. Lawlor</i>	614
12:15	<i>In vitro</i> anthelmintic evaluation of Greek oregano against <i>Ascaridia galli</i> <i>I. Pouloupoulou, E. Sarrou, E. Martinidou, L. Palmieri, D. Masuero, S. Martens and M. Gauly</i>	615

Session 50.

Insect genetics and reproduction

Room: Tête D'or 2

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Sandrock / Maya

	Theatre Session 50	Book of Abstracts page
8:30	Genetic diversity and improvement of the black soldier fly <i>C.D. Jiggins and T. Generalovic</i>	615
	invited	
9:00	Selection for larval weight in the black soldier fly – empirical evidence <i>K. Shrestha, E. Facchini, E. Van Den Boer, P. Junes, G. Sader, K. Peeters and E. Schmitt</i>	616
9:15	Full-sib group records as a practical alternative to individual records in insect breeding <i>L.S. Hansen, A.C. Bouwman, H.M. Nielsen, G. Sahana and E.D. Ellen</i>	616
9:30	Simulating breeding programs based on mass selection in black soldier fly (<i>Hermetia illucens</i>) <i>M. Slagboom, H.M. Nielsen, M. Kargo, M. Henryon and L.S. Hansen</i>	617
9:45	Effects of artificial selection in the black soldier fly – a Pool-seq approach <i>E. Facchini, A. Vereijken, D. Bickhart, A. Michenet, K. Shrestha and K. Peeters</i>	617
10:00	Adaptive responses of black soldier fly to simple low-quality diets <i>A. Gligorescu and J.G. Sørensen</i>	618
10:15	Coffee break	
10:45	Molecular sexing of black soldier flies <i>R.S.C. Rikkers, E. Van Der Valk, A.A.C. De Wit, L. Kruijt, E.D. Ellen, J. Van Den Heuvel and B.A. Pannebakker</i>	618
11:00	Biomarker discovery for the black soldier fly (<i>Hermetia illucens</i>) <i>E.M. Espinoza</i>	619
11:15	Improving black soldier fly genetics by CRISPR/Cas9 gene editing <i>I.N.Y. Nevo Yassaf, A.G. Goren, R.A. Adler and I.A. Alyagor</i>	619
11:30	Expected response to selection on larval size and development time in the housefly (<i>Musca domestica</i>) <i>H.M. Nielsen, T.N. Kristensen, G. Sahana, S.F. Laursen, S. Bahrndorff, J.G. Sørensen and L.S. Hansen</i>	620
11:45	ŸnFABRE: design of reference populations for genomic selection in <i>Tenebrio molitor</i> <i>E. Sellem, A. Donkpegan, Q. Li, K. Paul, A. Masseron, F. Gagnepain-Germain, K. Labadie, B. Vacherie, P. Garrabos, M.A. Madoui and T. Lefebvre</i>	620

12:00	The potential of instrumental insemination for honeybee breeding <i>M. Du, R. Bernstein and A. Hoppe</i>	621
12:15	Genetic analysis of production and behavioural traits of French honeybees <i>T. Kistler, C. Kouchner, C. Dumas, R. Dupain, A. Vignal, F. Mondet, P. Jourdan, B. Basso and F. Phocas</i>	621
12:30	SIMplyBee: R package for simulating honeybee populations and breeding programs <i>J. Obšteter, L.K. Strachan, J. Bubnič, J. Prešern and G. Gorjanc</i>	622
12:45	Demonstrating the principles of genetic inheritance in honeybees using SIMplyBee <i>L. Strachan, J. Bubnič, G. Petersen, G. Gorjanc and J. Obšteter</i>	622

Poster Session 50

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50.16	Exploring the potential for artificial selection in the black soldier fly, <i>Hermetia illucens</i> <i>T. Generalovic and C. Jiggins</i>	623
50.17	Weight of <i>Hermetia illucens</i> eggs from breeding and wild individuals <i>J. Lisiecka, Z. Mikołajczak, M. Dudek, K. Dudek, B. Kierończyk and D. Józefiak</i>	623
50.18	Paternity assignment tool in honey bees (<i>Apis mellifera</i>) <i>S. Andonov, G. Aleksovski, B. Dahle, M. Kovačić, A. Marinič, A. Moškrič, J. Prešern, B. Pavlov, Z. Puškadija and A. Uzunov</i>	624
50.19	Single-step genomic BLUP allows for the genetic evaluation of commercial honeybee queens <i>G.E.L. Petersen, F.S. Hely, M. Araujo, P.F. Fennessy and P.K. Dearden</i>	624
50.20	Deformed wing virus quantification: effect of selection and correlation with varroa related traits <i>M.G. De Iorio, S. Ottati, G. Molinatto, D. Bosco and G. Minozzi</i>	625
50.21	Monitoring the distribution of <i>Apis mellifera</i> genetic resources in Italy using mtDNA information <i>V. Taurisano, A. Ribani, K.E. Johnson, D. Sami, G. Schiavo, S. Bovo, V.J. Utzeri and L. Fontanesi</i>	625

Session 51. Leveraging the microbiome for resilience and sustainability in ruminant production – insights from H2020 HoloRuminant

Room: Tête D'or 1

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Kenny / Morgavi

Theatre Session 51

Book of Abstracts page

8:30	How does the cow's microbiome respond to physiological challenges? invited <i>J. Seifert</i>	626
9:15	Upper respiratory tract microbiota of dairy calves experimentally challenged with BRSV <i>S. O'Donoghue, B. Earley, M.S. McCabe, D. Johnston, K. Ní Dhufhaigh, S.L. Cosby, D.W. Morris and S.M. Waters</i>	626
9:30	Differential effects of <i>Ostertagia ostertagi</i> vaccination and infection on the rumen microbiome <i>J. Lima, T.N. McNeilly, P. Steele, M. Martínez-Álvaro, M.D. Auffret, R.J. Dewhurst, M. Watson and R. Roehe</i>	627
9:45	Novel ruminal microbiome solutions to reducing enteric methane emissions invited <i>T.A. McAllister, L.L. Guan and R.I. Mackie</i>	627
10:30	Coffee break	
11:00	Relationship between feed efficiency and rumen microbiota in feedlot bulls fed contrasting diets <i>A. Ortiz-Chura, M. Popova, G. Cantalapiedra-Hijar and D. Morgavi</i>	628

11:15	Establishment and evolution of ruminotypes of lactating Lacaune ewes <i>T. Blanchard, C. Marie-Etancelin, Y. Farizon, C. Allain and A. Meynadier</i>	628
11:30	Effect of colostrum source and calf breed on diarrhoea incidents in pre-weaned dairy calves <i>S. Scully, P.E. Smith, B. Earley, C. McAloon and S.M. Waters</i>	629
11:45	Metagenome strain deconvolution and abundance estimation enabled by low-error long-read DNA sequence <i>invited D. Bickhart, M. Kolmogorov, E. Tseng, P. Pevzner and T. Smith</i>	629
12:30	Stakeholders views regarding new practices to control microbiomes <i>F. Bedoin, A. Ait-Sidhoum, E. Vanbergue, A. Stygar, T. Latvala, Á. MacKen-walsh, S. Waters, P. Smith and J.K. Niemi</i>	630
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51.10	Temporal establishment of the colon microbiota in angus calves from birth to post-weaning <i>M. Stafford, P. Smith, S. Waters, F. Buckley, E. O'Hara and D. Kenny</i>	630
51.11	Preliminary study of faecal microbiota in a selection experiment for birth weight variability in mice <i>L. El-Ouazizi El-Kahia, N. Formoso-Rafferty, J.P. Gutiérrez, C. Esteban Blanco, J.J. Arranz and I. Cervantes</i>	631
51.12	The effects of crude protein levels on rumen microbiome and CH ₄ of the fattening Hanwoo steers <i>H. Kim, H. Cho, S. Jeong, K. Kang, S. Jeon, M. Lee, H. Kang, S. Lee, S. Seo and J. Seo</i>	631
51.13	Rumen metabolites of periparturient cows varying in SARA susceptibility modify fermentation <i>in vitro</i> <i>H. Yang, S. Heirbaut, J. Jeyanathan, X.P. Jing, N. De Neve, L. Vandaele and V. Fievez</i>	632
51.14	Prevalence of resistant <i>E. coli</i> and their transmission among dairy cattle in Swiss tie stalls <i>B. Köchle, V. Bernier Gosselin and J. Becker</i>	632
51.15	Stability of a <i>Bacillus</i> -based DFM following preparation of a milk replacer and premix <i>G. Copani, A. Segura, N. Milora, M. Schjelde and B.I. Cappelozza</i>	633
51.16	Effects of a <i>Bacillus</i> -based direct-fed microbial on performance and digestibility of lactating cows <i>M. Terré, N. Prat, D. Sabrià and B. Cappelozza</i>	633
51.17	Stability of a <i>Bacillus</i> -based direct-fed microbial post-palletisation under different temperatures <i>B. Cappelozza, C. Galschiet and G. Copani</i>	634
51.18	Microbial signals in peripheral blood mononuclear cells of Australian Angus cattle <i>P. Alexandre, A. Wilson, T. Legrand, R. Farr, S. Denman and A. Reverter</i>	634
51.19	Metabarcoding of milk, faeces and ruminal fluid of Sarda ewes fed with Alfalfa (<i>Medicago sativa</i>) <i>A. Vanzin, D. Giannuzzi, G. Zardinoni, A. Cecchinato, N. Macciotta, F. Correddu, A. Atzori, S. Carta, A. Ledda, S. Schiavon, L. Gallo and S. Pegolo</i>	635
51.20	An experimental approach for assessing causal microbes in early life diarrhoea in lambs <i>L. Voland, D. Graviou, K. Vazeille, A. Ortiz-Chura, D.P. Morgavi and M. Popova</i>	635
51.21	Mycotoxin-deactivating feed additive supplementation in dairy cows fed <i>Fusarium</i> -contaminated diet <i>A. Catellani, Y. Han, V. Bisutti, F. Ghilardelli, F. Fumagalli, E. Trevisi, A. Ceccinato, H. Swamy, S. Van Kuijk and A. Gallo</i>	636
51.22	Effects of 3-NOP on enteric methane production in growing beef cattle offered a forage based diet <i>S.F. Kirwan, L.F.M. Tamassia, N.D. Walker, A. Karagiannis, M. Kindermann and S.M. Waters</i>	636

Session 52. Nitrogen management in the dairy supply chain and other tools to improve the efficiency and sustainability of cattle farming

Room: Gratte Ciel 3

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Righi / Tsiplakou

Theatre Session 52		Book of Abstracts page
8:30	COWFICIENCY project: a field attempt to increase nitrogen use efficiency of dairy cattle <i>A. Foskolos, A. Plomaritou, M.E. Hanlon and D. Kantas</i>	637
	invited	
9:00	Dairy heifers intake capacity: are estimated values still correct? <i>J. Jurquet, Y. Le Cozler, D. Tremblais, F. Launay and L. Delaby</i>	637
9:15	Current status of feed nitrogen use efficiency in dairy replacement heifers in Greece <i>A. Plomaritou, M.E. Hanlon, K. Gatsas, S. Athanasiadis, K. Droumtsekas, D. Kantas and A. Foskolos</i>	638
9:30	Impact of feed-grade and slow-release ureas on dairy cattle performance and nitrogen efficiency <i>M. Simoni, G. Fernandez-Turren, F. Righi, M. Rodríguez-Prado and S. Calsamiglia</i>	638
9:45	Current nitrogen status and management of dairy farms in Greece <i>M.E. Hanlon, A. Plomaritou, E. Tsiplakou, I. Vakondios, T. Michou, D. Kantas and A. Foskolos</i>	639
10:00	Dairy cattle holistic nutritional management for reduced nitrogen pollution <i>A. Foskolos, A. Plomaritou, M.E. Hanlon and D. Kantas</i>	639
10:15 Coffee break		
10:45	Manure management practices of dairy farms in Greece <i>L. Makridis, D. Vouzaras, D. Kantas and A. Foskolos</i>	640
11:00	peNDF modulates chewing activity, rumen fermentation, plasma metabolites, performance in dairy cow <i>Y.C. Cao, L.M. Wang and J.H. Yao</i>	640
11:15	Impact on milk production of feeding organic acids during pre and post-partum period <i>L. Jansen and C. Gordon</i>	641
11:30	Peptide profile as fingerprinting of the ripening period of Alpine Asiago cheese <i>S. Segato, S. Khazzar, G. Galaverna, A. Caligiani, G. Riuzzi, L. Serva, F. Gottardo and G. Cozzi</i>	641
11:45	Producing sustainable milk in agroecology with Normande breed and grassland in Normandy <i>B. Rouillé, F. Lepeltier and L. Morin</i>	642
12:00	Hepatic metabolome of grazing dairy cows with or without feed restriction during early lactation <i>M. Carriquiry, M. García-Roche, A.L. Astessiano, D. Custodio, G. Ortega and P. Chilibroste</i>	642
12:15	Nitrogen balance of lactating cows from herds fed hay-based diets in Northern Italy <i>T. Danese, M. Simoni, R.G. Pitino, G. Mantovani, M.C. Sabetti, F. Righi and M.E. Van Amburgh</i>	643
12:30	Assessing sward managements on nitrogen fixation from a white clover high sugar grass mixture <i>M. Verbeeck, C. Segura, A. Louro-Lopez, N. Loick, P. De-Meo-Filho, S. Pulley, J. Hood, B.A. Griffith, L.M. Cardenas and D. Enriquez-Hidalgo</i>	643
12:45	Amino acid intake of hay-based diets and the relationship with milk production and urea content <i>M. Simoni, R. Pitino, T. Danese, G. Mantovani, E. Tsiplakou and F. Righi</i>	644
Poster Session 52		Book of Abstracts page
52.16	Does acidification affect urinary creatinine in dairy cattle? <i>T. Danese, M.C. Sabetti, M. Simoni, R.G. Pitino, G. Mantovani and F. Righi</i>	644

Session 53.

PLF for health and welfare – Part 1

Room: Roseraie 3

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Maselyne / Calderon Diaz

Theatre Session 53		Book of Abstracts page
8:30	Evaluation of three measuring methods for the ammonia concentration for practical use in pig houses <i>J. Witt, J. Krieter, K. Schröder and I. Czycholl</i>	645
8:45	The information and communication technologies in livestock production – expectations and concerns <i>S. Opalinski, K. Olejnik, E. Popiela, A. Jankowska-Makosa, D. Konkol, M. Korczynski, D. Knecht, R. Kupczynski, I. Tikasz and T. Banhazi</i>	646
9:00	Implementation of a deep learning based system for monitoring farrowing in sows <i>M. Wutke, C. Lensches, A. Holzhauer, M.A. Lieboldt and I. Traulsen</i>	646
9:15	Who's biting? Detecting pig screams for identifying tail biting events <i>P. Hesecker, T. Bergmann, M. Scheumann, S. Ammer, I. Traulsen, N. Kemper and J. Probst</i>	647
9:30	Veterinarians' perceptions of using PLF technologies in pig husbandry in the Netherlands and Germany <i>M.F. Giersberg and F.L.B. Meijboom</i>	647
9:45	Automatic detection and quantification of ear biting in pigs <i>A. Odo, R. Muns, L. Boyle and I. Kyriazakis</i>	648
10:00	Installation modified carbon felt in pig house to control airborne pathogenic microorganisms <i>X.D. Zhao, F. Qi, H. Li and Z.X. Shi</i>	648
10:15 Coffee break		
11:45	Benefit of caliper use at insemination on different genetic types: impact on farrowing performances <i>C. Teixeira Costa, C. Chevance, T. Nicolazo, G. Boulbria, V. Normand, J. Jeusselin and A. Lebret</i>	649
12:00	Combined effect of genetics, gut microbiota and environment on vaccine responses and welfare in hens <i>A. Lecoœur, F. Blanc, D. Gourichon, N. Meme, T. Burlot, V. Guesdon, V. Ferreira, L. Calandreau, L. Warin, F. Calenge and M.H. Pinard Van-Der-Laan</i>	649
12:15	Using triaxial accelerometers to monitor peripartum behaviour of Purebred Spanish mares <i>M.J. García García, F. Maroto Molina, C.C. Pérez Marín and D.C. Pérez Marín</i>	650
12:30	Relationships between direct and indirect genetic effects of RFI and feeding behaviour traits <i>M. Piles, M. Mora, M. Pascual and J.P. Sánchez</i>	650
12:45	Audio-based event detection and health monitoring in poultry <i>F. Hakansson and D.B. Jensen</i>	651
Poster Session 53		Book of Abstracts page
53.13	First approach of using sows' water consumption data to detect the onset of farrowing <i>J. Probst, N. Volkmann, C. Lensches, P. Hesecker, G. Thimm, M. Lieboldt, I. Traulsen and N. Kemper</i>	651
53.14	Social network analysis of cattle and horses inferred from sensor ear tag (SET) and GPS based data <i>U. Heikkilä, K. Ueda, N. Gobbo Oliveira Erünlü, M. Baumgartner, M. Cockburn, I. Bachmann, M. Roig-Pons and S. Rieder</i>	652

Session 54. Life Green Sheep and Farm management to adapt goat and sheep farming to climate change: solutions and experiments

Room: Roseraie 2

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Throude / Satzori

Theatre Session 54		Book of Abstracts page
8:30	Modelling adaptation strategies to climate change in Mediterranean small ruminant systems <i>A. Lurette, S. Lobón, F. Douhard, M. Blanco-Alibes, D. Martin-Collado, A. Madrid, M. Curtil-Dit-Galin and F. Stark</i>	652
8:45	Feed365: Early findings for sheep grazing novel year-round forage systems <i>C.E. Payne, D. Real, A. Loi and C. Revell</i>	653
9:00	Quantifying responses to hot conditions in divergent sheep breeds in South Africa <i>S. Cloete, S. Steyn, J. Van Zyl and T. Brand</i>	653
9:15	Impacts of heat peaks in France on the performances of dairy goats housed in an insulated roof shed <i>K. Boissard, A. Fatet, M. Lambert, P. Sales and H. Caillat</i>	654
9:30	Cortisol level in sheep wool underwent to three different pasture management <i>L. Turini, A. Ripamonti, A. Silvi, E. Giua, A. Mantino, G. Conte, F. Bonelli and M. Mele</i>	654
9:45	How sheep sectors do face environmental, social and economic issues in French Pyrenees region? <i>A.-L. Jacquot, P.-G. Marnet and Y. Le Cozler</i>	655
10:00	Aligning carbon footprint estimates from different tools across Europe <i>A.S. Atzori, O. Del Hierro, B. Lyubov, R. Vial, C. Buckley, M.G. Serra, M. Habeanu, R. Ruiz, L. Lanzoni, M. Acciaro, T. Keady and S. Troude</i>	655
10:15 Coffee break		
10:45	Determining carbon footprint of sheep farms in Europe: first results of the LIFE Green Sheep project <i>S. Throude, M. Acciaro, A. Atzori, R. Ruiz, O. Del Hierro, C. Buckley, L. Bragina, T.W.J. Keady, C. Dragomir, M.A. Gras and J.B. Dollé</i>	656
11:00	Greenhouse gas emission intensity of milk production in three Slovenian goat breeds <i>M. Bizjak, Ž. Pečnik and M. Simčič</i>	656
11:15	No difference in PAC methane emission corrected for milk yield in three Norwegian dairy goat farms <i>J.H. Jakobsen, T. Blichfeldt, K. Dodds and J.C. McEwan</i>	657
11:30	Sustainability of Irish sheep production <i>C. Buckley, L. Bragina and T. Keady</i>	657
11:45	Should animal welfare indicators be integrated into the environmental impact assessment of farms? <i>L. Lanzoni, L. Whatford, K. Waxenberg, R. Ramsey, R.M. Rees, J. Bell, E. Dalla Costa, S. Throude, A.S. Atzori and G. Vignola</i>	658
12:00	Testing mitigation actions to reduce GHG emissions from sheep farming in Europe <i>S. Throude, M. Acciaro, A. Atzori, R. Ruiz, O. Del Hierro, C. Buckley, L. Bragina, T.W.J. Keady, C. Dragomir, M.A. Gras and J.B. Dollé</i>	658
12:15	The effect of forage type on methane production from hill bred lambs grazing alternative forages <i>M. Dolan, T. Boland, N. Claffey, F. McGovern and F. Campion</i>	659
Poster Session 54		Book of Abstracts page
54.15	Preliminary results of the LIFE Green Sheep project in Italy <i>M. Acciaro, M. Decandia, M.G. Serra, S. Picconi, V. Giovanetti, A. Atzori, D. Usai and S. Throude</i>	659

54.16	Carbon footprint assessment of a Pecorino cheese produced in central Italy <i>L. Lanzoni, L. Di Paolo, S. Abbate, M. Giammarco, M. Chincarini, I. Fusaro, A. Atzori, D. Di Battista, S. Throude and G. Vignola</i>	660
54.17	Grass management to adapt goat farming to climate change in western France <i>J. Jost, M.-G. Garnier, L. Robin, M. Proust, M. Bourasseau, R. Lesne, A. Villette, V. Tardif, T. Soulard, O. Subileau and O. Prodhomme</i>	660
54.18	Positive effects of grazing mulberry trees in summer on dairy goats' milk and cheese <i>C. Boyer, H. Le Chenadec, F. Noël, A. Stocchetti, J. Jost, A. Pommaret, S. Fressinaud and R. Delagarde</i>	661
54.19	Effects of heat stress and forage quality on feed intake and milk production of Sarda dairy ewes <i>M. Sini, F. Fulghesu, A. Ledda, A.S. Atzori and A. Cannas</i>	661
54.20	Seasonal rainfall patterns modify summer energy balance and nutritional condition of grazing sheep <i>Y. Yoshihara, B. Chojjilsuren, T. Kinugasa and M. Shinoda</i>	662
54.21	Effect of the inclusion of rumen-protected amino acids in the diet of high production dairy sheep <i>A. Cabezas, D. Martinez Del Olmo, J. Mateos, J. Matilla, M.T. Díaz, R. Bermejo-Poza, J. De La Fuente and V. Jimeno</i>	662

Session 55.

Breeding for climate change – adaptation

Room: Prestige Gratte Ciel

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Sell-Kubiak / Pszczola

	Theatre Session 55	Book of Abstracts page
15:00	Reaction norm model analysis for heat stress tolerance of growth performance in purebred pigs <i>Y. Fukuzawa, S. Ogawa, T. Okamura, N. Nishio, K. Ishii, K. Tashima, K. Akachi, H. Takahashi and M. Satoh</i>	663
15:15	Investigating the slick gene and its effects on heat stress in New Zealand grazing dairy cattle <i>G.M. Worth, E.G. Donkersloot, L.R. McNaughton, S.R. Davis and R.J. Spelman</i>	663
15:30	Use of sensors for the detection and genetic evaluation of heat stress in dairy cattle <i>P. Lemal, M.-N. Tran, M. Schroyen and N. Gengler</i>	664
15:45	Evaluation of heat stress effects on production traits and somatic cell score of Dutch Holstein cows <i>J. Vandenplas, M.L. Van Pelt and H. Mulder</i>	664
16:00	Multi-omics and multi-tissues data to improve knowledge of heat stress acclimation mechanisms <i>G. Huau, D. Renaudeau, J.L. Gourdine, J. Fleury, J. Riquet and L. Liaubet</i>	665
16:15	Should we consider fertility when improving thermotolerance in dairy cattle? <i>M.J. Carabaño, C. Díaz and M. Ramón</i>	665
16:30	Trade-off between fertility and production in French dairy cattle in the context of climate change <i>A. Vinet, S. Mattalia, R. Vallee, A. Barbat, C. Bertrand, B.C.D. Cuyabano and D. Boichard</i>	666
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17:15	Genetic analyses of resilience indicator traits in German Holstein, Fleckvieh and Brown Swiss <i>F. Keßler, R. Wellmann, M. Chagunda and J. Bennewitz</i>	666
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Session 56. Establishing breeding programs in extensive systems (including developing regions) with climate change in mind

Room: Foyer Amphitheatre Rhone

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Leroy / Berg

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Session 57. Grassland management and grassland-based feeding systems for efficient and sustainable milk and meat production

Room: Foyer Amphitheatre Parc

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Berard / Probo

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Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Ellies-Oury / Chriki

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Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Dossa / Salgado

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15:30	How do changes in crop-livestock integration and specialisation affect farm performance in Vietnam? <i>A. Le Trouher, H. Le Thi Thanh, T. Dinh Khanh, T. Han Anh, C.-H. Moulin and M. Blanchard</i>	700
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Session 60.

Minerals in animal nutrition: supplementation – Part 1

Room: Bellecour 1

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Alvarez Rodriguez / Windisch

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16:30	Reduction of trace mineral supplementation on performance and mineral status of fattening pigs <i>E. Gourlez, J.Y. Dourmad, F. Beline, A. Monteiro, A. Boudon, A. Narcy, P. Schlegel and F. De Quelen</i>	711
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60.15	Impact of trace minerals and water/feed deprivation on performance and metabolism of grass-fed beef <i>M.J.I. Abreu, I.A. Cidrini, D. Brito De Araujo, F.D. Resende and G.R. Siqueira</i>	715
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60.20	Marine mineral complex reduces nutrient interactions and allows efficient use of Ca and P in broiler <i>M.A. Bouwhuis, R. Casserly, A. Craig, D. Currie and S. O'Connell</i>	718
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Session 61. Resilient livestock farming systems in the face of climate and other global challenges – adaptation and mitigation

Room: Gratte Ciel 2

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Sturaro / Poulopoulou

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- 61.16 Effect of heat stress on extensive beef cattle's calving percentage in the Central Bushveld Bioregio 727
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- 61.17 Contrasting rearing and finishing regimens on performance and methane emissions of Angus steers 728
J. Clariget, V. Ciganda, G. Banchemo, D. Santander, K. Keogh, D.A. Kenny and A.K. Kelly
- 61.18 Energy and greenhouse gas emissions: tools to discuss sustainability of livestock systems in Amazon 728
D.C.C. Corrêa, R.J.M. Pocard-Chapuis, M. Lenoir, V. Blanfort, J.L. Bochu and P. Lescoat
- 61.19 Microclimate and production of a tropical forage intercropped with pigeon pea 729
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- 61.20 Reducing energy consumption to dry alfalfa using organic acids – a field trial 729
T. Fumagalli and L.L.C. Jansen
- 61.21 Carbon and energy footprint of dehydrated alfalfa production, from planting to factory output 730
D. Coulmier, P. Thiebeau, S. Recous and H. Labanca
- 61.22 Impact of heat waves on the quality of milk and lactic farmhouse goat cheeses in the Aura region 730
S. Raynaud, E. Lemée, H. Le Chenadec, C. Laithier, P. Thorey, C. Boyer, M. Legris, S. Morge, S. Anselmet, V. Bérulle, S. Fressinaud, C. Delbès, M. Brocart, N. Morardet, J. Birkner and Y. Gaüzere
- 61.23 Climate-smart practices can reduce GHG emissions intensity on smallholder dairy farms in Kenya 731
L. McNicol, M. Graham, M. Caulfield, J. Kagai, J. Gibbons, A.P. Williams, D. Chadwick and C. Arndt

Session 62.

Poultry and pig low-input and organic production systems' welfare

Room: Bellecour 3

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Daş / Holinger

	Theatre Session 62	Book of Abstracts page
15:00	Welfare barriers and levers for improvement in organic and low-input outdoor pig and poultry farms <i>C. Leterrier, C. Bonnefous, J. Niemi, PPILOW Consortium and A. Collin</i>	731
	invited	
15:30	Range use relationship with welfare and performance indicators in four organic broilers strains <i>C. Bonnefous, A. Collin, L.A. Guilloteau, K. Germain, S. Mignon-Grasteau, M. Reverchon, S. Mattioli, C. Castellini, V. Guesdon, L. Calandreau, C. Berri and E. Le Bihan-Duval</i>	732
15:45	Case study of a newly-developed genotype for dual-purpose rearing of male chicks <i>H. Pluschke, S. Lombard, B. Desaint, M. Reverchon, A. Roinsard, O. Tavares, A. Collin-Chenot, M. Ferriz, S. Seelig and L. Baldinger</i>	732
16:00	Poultry production: using dual-purpose genotypes to reduce the culling of day-old male chicks? <i>J. Niemi, M. Väre, A. Collin, M. Almadani, M. Quentin, L. Baldinger, S. Steinfeldt, T.B. Rodenburg, F. Tuytens and P. Thobe</i>	733
16:15	Longitudinal assessment of health indicators in four organically kept laying hen flocks <i>L. Jung, M. Krieger, L. Matoni and D. Hinrichs</i>	733
16:30	Alternative pig housing systems with high welfare standards – status quo and perspectives <i>M. Holinger</i>	734
	invited	
17:00	Coffee break	
17:30	Characterising outdoor pig systems in Ireland <i>O. Menant, S. Mullan, F. Butler, L. Boyle and K. O'Driscoll</i>	734
17:45	Animal welfare and pork quality of intact male pigs in organic farming according to genotype <i>B. Lebret, S. Ferchaud, A. Poissonnet and A. Prunier</i>	735
18:00	Large White genetics in organic system: breeding for piglet survival <i>L. Canario, S. Ferchaud, S. Moreau, C. Larzul and A. Prunier</i>	735
18:15	Comparing animal welfare assessments by researchers and free-range pig farmers with the PIGLOW app <i>E.A.M. Graat, C. Vanden Hole, S. Nauta, M.F. Giersberg, T.B. Rodenburg and F.A.M. Tuytens</i>	736

Session 63.

Monoguthealth – Part 2

Room: Gratte Ciel 1

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Bee / Trevisi

	Theatre Session 63	Book of Abstracts page
15:00	Growth performance and digestive tract parameters in weaned piglets fed <i>Nannochloropsis limnetica</i> <i>A.A.M. Chaves, C.F. Martins, D.F. Carvalho, A.R.J. Cabrita, M.R.G. Maia, A.J.M. Fonseca, R.J.B. Bessa, A.M. Almeida and J.P.B. Freire</i>	736
15:15	Synbiotic administration to suckling piglets on health parameters at weaning and postweaning period <i>E.A. Sureda, M. Schroyen, J. Uerlings, F. Fannes, J. Liénart, A. Sabri, P. Thonart, V. Delcenserie, J. Wavreille and N. Everaert</i>	737
15:30	Fine characterisation of a standardized citrus extract and it's effect on weaned piglet performances <i>S. Cisse, J. Laurain and M.E.A. Benarbia</i>	737

15:45	Essential oils and butyric acid effects on growth performance, blood metabolites and health in pigs <i>U. Marume and R.B. Nhara</i>	738
16:00	The impacts of a spectrum of varied lifestyle factors on the porcine gut microbiota <i>L. Comer, E. Arévalo Sureda and N. Everaert</i>	738
16:15	<i>In vitro</i> inhibition of avian pathogenic <i>Enterococcus cecorum</i> isolates by probiotic <i>Bacillus</i> strains <i>M. Bernardeau, S. Medina-Fernandez and M. Cretenet</i>	739
16:30	Effects of breed and early feeding on intestinal microbiota, gene expression and welfare indicators <i>F. Marcato, D. Schokker, S.K. Kar, J.M.J. Rebel and I.C. De Jong</i>	739

16:45 Coffee break

17:15	Yogurt Acid Whey addition affects broiler caecal microbiota composition and metabolic activity <i>I. Palamidi, V.V. Paraskeuas, I. Politis and K.C. Mountzouris</i>	740
17:30	A richer gut microbiota is related to better feed efficiency and diet adaptability in laying hens <i>M. Bernard, A. Lecoeur, J.L. Coville, N. Bruneau, D. Jarret, S. Lagarrigue, F. Calenge, G. Pascal and T. Zerjal</i>	740
17:45	Gut microbiome variations during the productive lifespan of two high-yielding laying hen strains <i>C. Roth, J. Seifert, M. Rodehutschord and A. Camarinha-Silva</i>	741
18:00	A rabbit nutrition hypothesis to prevent digestive problems: 'Feed the fusus coli' <i>K.H. De Greef and M. Van Der Sluis</i>	741
18:15	Gut microbiota of growing rabbits fed diets with different fibre and lipid contents <i>G. Zardinoni, P. Stevanato, A. Trocino, M. Birolo, F. Bordignon and G. Xiccato</i>	742

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63.13	Gut microbiota-metabolome response to dietary porcine intestinal mucosa hydrolysate in piglets <i>S. Segarra, A. Middelkoop and F. Molist</i>	742
63.14	Effects of probiotics isolated from faeces of fast-growing pigs on growth performance of weaning pigs <i>Y.H. Choi, Y.J. Min, J.E. Kim, Y.D. Jeong, H.J. Park, C.H. Kim and S.J. Sa</i>	743
63.15	Effect of butyric acid salts on the palatability of feed for piglets <i>W. Kozera, A. Woźniakowska, K. Karpiesiuk, A. Okorski and G. Żak</i>	743
63.16	Synbiotics-glyconutrients enhance growth performance and fatty acid profile in finishing pigs <i>C.B. Lim, Q.Q. Zhang, S. Biswas, J.H. Song, O. Munezero, J.S. Yoo and I.H. Kim</i>	744
63.17	Impact of gut health product on appetite associated hormones using <i>ex vivo</i> porcine intestinal cells <i>N. Browne and K. Horgan</i>	744
63.18	Development of antimicrobial peptides against multidrug-resistant enterotoxigenic <i>Escherichia coli</i> <i>W.J. Chen, M.Y.W. Kwok, K.C. Wu, K.F. Hua, Y.H. Yu and Y.H. Cheng</i>	745
63.19	Influences of quercetin inclusion to corn-soybean-gluten meal-based diet on broiler performance <i>S. Biswas, Q.Q. Zhang, J.H. Song, C.B. Lim, I.H. Kim and J.S. Yoo</i>	745
63.20	Effects of <i>Bacillus</i> species – fermented products on growth performance and gut health in broilers <i>Y.H. Yu, S.H. Hsiao, Y.H. Cheng, W.J. Chen and K.F. Hua</i>	746
63.21	<i>Lactobacillus ingluviei</i> C37 improves gut health in lipopolysaccharide challenged broiler chickens <i>S. Khempaka, M. Sirisopapong and S. Okrathok</i>	746
63.22	Effects of different probiotics on laying performances, egg quality and gut health in laying hens <i>F. Barbe, L. Blanc, A. Sacy and E. Chevaux</i>	747

- 63.23 Simple methodology to evaluate faeces quality on farm and effect of *S. boulardii* on faecal scoring 747
A. Sacy, F. Barbé, S. Poulain, P. Belloir, C. Paes and E. Chevaux
- 63.24 A comparison of yeast gut health products ability to limit attachment of *Salmonella* to IPEC-j2 cells 748
N. Browne, A. McCormack and K. Horgan
- 63.25 Butyric acid and *Bacillus subtilis* 29784 improve cumulatively the intestinal barrier 748
A. Mellouk, D. Prévéraud, T. Goossens, O. Lemâle, E. Pinloche and J. Consuegra

Session 64.

Project session: Farmyng

Room: Tête D'or 2

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Kihanguila / Gasco

Theatre Session 64	Book of Abstracts page
15:00 Safety of BSF larvae reared on substrates which are spiked or naturally contaminated with aflatoxins <i>K. Niermans, E.F. Hoek- Van Den Hil, N. Meijer, S.P. Salari, M. Gold, H.J. Van Der Fels-Klerx and J.J.A. Van Loon</i>	749
15:15 Transfer of aflatoxin, lead and cadmium from larvae reared on contaminated substrate to laying hens <i>M. Heuel, M. Kreuzer, I.D.M. Gangnat, E. Frossard, C. Zurbrügg, J. Egger, B. Dortmans, M. Gold, A. Mathys, J. Jaster-Keller, S. Weigel, C. Sandrock and M. Terranova</i>	749
15:30 Determination of minimal nutrient requirements of <i>Tenebrio molitor</i> larvae <i>B. Tamim, T. Parr, J. Brameld and A. Salter</i>	750
15:45 FLAGship demonstration of industrial scale production of nutrient resources from mealworms <i>W. Kihanguila</i>	750
16:15 Tailored vitamins and minerals premix for <i>Tenebrio molitor</i> farming <i>E. Barbier, V. Gerfault, T. Lefebvre, F. Peyrichou, C. Ricciardi and N. Tanrattana</i>	751
16:30 <i>Tenebrio molitor</i> genomics revealed limited molecular diversity among available populations <i>L. Panunzi, E. Eleftheriou, B. Vacherie, K. Labadie, T. Lefebvre and M.A. Madoui</i>	751
16:45 Coffee break	
17:15 Assessing the quality of insect-derived products: methods and findings from the FARMYNG project <i>S. Gofflot, A. Pissard, F. Debode, A.C. Laplaize, B. Lorrette and J.F. Morin</i>	752
17:30 Authentication of insect-derived products: methods and findings from the FARMYNG project <i>B. Dubois, A. Marien, S. Guillet, J.-F. Morin, B. Lorrette and F. Debode</i>	752
17:45 More than an organic fertilizer: mealworm frass as a substitute to conventional fertilizers <i>E. Bohuon, D. Houben, G. Daoulas, M.-P. Faucon and A.-M. Dulaurent</i>	753
18:00 The environmental life cycle assessment of Ynsect insect based proteins <i>K. Hsu, A. Eiperle and M. Jouy</i>	753
18:15 Insects' nutrients – the Animal Frontiers special issue <i>T. Veldkamp and L. Gasco</i>	754

Session 65. Remote sensing applied to livestock farming: discovering physiological and ethological clues to optimize productive performance and animal welfare

Room: Tête D'or 1

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Montanholi

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15:00 Time-course change in lamb composition and reflectance properties: implications for authentication <i>L. Rey-Cadilhac, D. Andueza, A. Prunier and S. Prache</i>	754
15:15 Individual adaptive responses of meat ewes facing an abrupt nutritional challenge after lambing <i>E. González-García, M. Gindri, L. Puillet and N.C. Friggens</i>	755
15:30 Large variation in emission intensities from dual-purpose sheep production system <i>B.A. Åby, S. Samsonstuen and L. Aass</i>	755
15:45 Considering the morphology of cows for comfortable milking <i>J. Fazilleau, S. Guiocheau and J.L. Poulet</i>	756
16:00 Classification of honeybee flight activity patterns reveals impact of recruitment behaviours <i>G.E.L. Petersen, D. Gupta, P.F. Fennessy and P.K. Dearden</i>	756
16:30 Implementation of large-scale climate smart agriculture research on U.S. beef cattle grazing lands <i>K. Cammack, A. Blair, L.O. Tedeschi, H.M. Menendez Iii and J.R. Brennan</i>	757
16:45 Coffee break	
17:15 Remote monitoring behaviour of bison in captivity: effects of gender, weather and daytime <i>R.R. Vicentini, D. Moya, J. Church, A.C. Sant'anna, W. Balan, W. Squir and Y.R. Montanholi</i>	757
17:30 Artificial intelligence for measuring the respiration rate in dairy cows <i>L. Dißmann, R. Antia, L. Chinthakayala, N. Landwehr, T. Amon and G. Hoffmann</i>	758
17:45 Using millimetre-wave radar for monitoring sow postural activity in individual pen: first results <i>D. Henry, J. Bailly, T. Pasquereau, W. Hebrard, J.F. Bompa, E. Ricard, H. Aubert and L. Canario</i>	758
18:00 The environmental variance on daily feed intake as a measure of resilience in pigs <i>C. Casto-Rebollo, P. Nuñez, S. Gol, J. Reixach and N. Ibáñez-Escriche</i>	759

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65.11 Factors affecting somatic cell count in ewe milk and its effect on milk yield and composition <i>M. Oravcová, V. Tančin, L. Mačuhová and M. Uhrinčat</i>	759

Session 66. Innovation in non-ruminant nutrition and feeding

Room: Gratte Ciel 3

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Alvarez Rodriguez / Stergiadis

Theatre Session 66	Book of Abstracts page
15:00 Digestibility of soybean meal vs toasted soybeans in newly weaned piglets <i>C. De Cuyper, P. Dubois and S. Millet</i>	760
15:15 Effect of variety and technological treatment on intake of lupin seed in pigs <i>E. Labussiere, H. Furbeyre, M. Guillevic and G. Chesneau</i>	760

15:30	Comparative energy values of 10 forages in finishing pigs <i>D. Renaudeau, J. Pirault, M. Dumesny, S. Lombard and F. Marie</i>	761
15:45	Implication of different amylose/amylopectin ratio on low protein diet on piglet's performance <i>P. Trevisi, D. Luise, F. Correa, S. Viridis, C. Negrini and S. Dalcanale</i>	761
16:00	Effects of two blends of phytoextracts on growth and gut health of weaning pigs to replace zinc oxide <i>D. Luise, F. Correa, C. Negrini, S. Viridis, M. Mazzoni, S. Dalcanale and P. Trevisi</i>	762
16:15	Effect of olive cake in growing pig diets on faecal microbiota fermentation and composition <i>D. Belloumi, P. García-Rebollar, P. Francino, S. Calvet, A.I. Jiménez-Belenguer, L. Piquer, O. Piquer and A. Cerisuelo</i>	762
16:30	Impact of increasing dietary sphingolipids on feed intake and growth performance of piglets <i>S. Chakroun, R. Larsen, J. Levesque, F. Cerpa Aguila, M.-P. Letourneau, J.E. Rico and D.E. Rico</i>	763

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17:15	Faeces microbiota and metabolism correlated with reproductive capacity in early parity sow <i>J. Wang, Q. Xie and B. Tan</i>	763
17:30	Dehydrated sainfoin in rabbit feed: effects of high incorporation on the health and performances of <i>C. Gayraud, P. Gombault, A. Bretaudeau, H. Hoste and T. Gidenne</i>	764
17:45	Nutritional value of defatted larvae meal and whole larvae from black soldier fly <i>P. Belloir, F. Hervo, E. Gambier, L. Lardic, C. Guidou, C. Trespeuch, N. Mème, E. Recoules and B. Méda</i>	764

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66.11	Diet taste monotony decreases feed acceptability and preferences in nursery pigs <i>J. Figueroa, E. Huenul, R. Palomo and D. Luna</i>	765
66.12	Dietary taste variety improves performance in nursery pigs <i>J. Figueroa, T. Cabello, E. Huenul, R. Palomo and D. Luna</i>	765
66.13	Impact of some dietary agro-industrial by-products on the gut microbiota of finishing pigs <i>I. Skoufos, A. Nelli, C. Voidarou, I. Lagkouvardos, E. Bonos, K. Fotou, C. Zacharis, I. Giannenas and A. Tzora</i>	766
66.14	Effects of Greek aromatic/medicinal plants on health and meat quality characteristics of piglets <i>G. Magklaras, C. Zacharis, K. Fotou, E. Bonos, I. Giannenas, J. Wang, L.Z. Jin, A. Tzora and I. Skoufos</i>	766
66.15	Effects of mint leaf powder on performance and egg nutrient composition of laying hens <i>Y.H. Zhang, M.M. Bai, H.N. Liu, X.F. Kong and F.C. Wan</i>	767
66.16	Weaned piglets' gut microbiota regulation by dietary olive, winery, and cheese waste by-products <i>A. Tzora, A. Nelli, A. Tsinas, E. Gouva, G. Magklaras, S. Skoufos, B. Venardou, K. Nikolaou, I. Giannenas and I. Skoufos</i>	767
66.17	Effects of medium-chain fatty acids on feed intake, body weight and egg composition of laying hens <i>F. Cerpa Aguila, S. Chakroun, M.P. Letourneau Montminy, J.E. Rico and D.E. Rico</i>	768

Session 67.

PLF for health and welfare – Part 2

Room: Roseraie 3

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Pastell / Stygar

Theatre Session 67

Book of Abstracts page

15:00	Open-sourcing behavioural algorithms for ruminant welfare monitoring using raw wearable sensor data <i>D. Foy, T.R. Smith and J.P. Reynolds</i>	768
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15:15	Evaluation of an automated cattle lameness detection system <i>N. Siachos, A. Anagnostopoulos, B.E. Griffiths, J.N. Neary, R.F. Smith and G. Oikonomou</i>	769
15:30	Breath analysis in dairy cattle: going beyond methane emission <i>I. Fodor, E. Van Erp-Van Der Kooij and I.D.E. Van Dixhoorn</i>	769
15:45	Dairy cow personality: correlations with age, weight, back fat thickness and activity <i>P. Hasenpusch, T. Wilder, A. Seidel, J. Krieter and G. Thaller</i>	770
16:00	Automatic behaviour assessment of young bulls in pen using machine vision technology <i>A. Cheype, J. Manceau, V. Gauthier, C. Dugué, L.-A. Merle, X. Boivin and C. Mindus</i>	770
16:15	Parity and lactation stage preserve a stable structure in the dynamic social networks in cattle <i>H. Marina, I. Hansson, I. Ren, F. Fikse, P.P. Nielsen and L. Rönnegård</i>	771
16:30	Application of rumen boluses to receive welfare parameters from fattening bulls <i>K. Fromm, J. Heinicke, T. Amon and G. Hoffmann</i>	771
16:45	Coffee break	
17:15	Stepwise modelling for improved bovine health <i>C.M. Matzhold, K.S. Schodl, C.E. Egger-Danner, F.S. Steininger and P.K. Klimek</i>	772
17:30	Is milking order connected to social interactions? <i>I. Hansson, H. Marina and L. Rönnegård</i>	772
17:45	Combining ultra-wideband (UWB) location and accelerometer data for cattle behaviour monitoring <i>S. Benaissa, F. Tuytens, D. Plets, L. Vandaele, L. Martens, W. Joseph and B. Sonck</i>	773
18:00	FEMIR report – the new MIR advising tool <i>L.M. Dale, A. Werner, C. Natterer, E.J.P. Strang, Emissioncow Consortium, Remissiondairy Consortium and J. Bieger</i>	773
18:15	Heat stress relief of dairy cows by evaporative cooling under Mediterranean summer conditions <i>S. Pinto, C. Ammon, F. Estellés, A. Villagra, T. Amon and G. Hoffmann</i>	774

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67.13	Performance of subcutaneous thermochips implanted in dairy cows: preliminary report <i>A.R. Garcia, L.K. Zanetti, T.C. Alves, L.M. Neira, L.F. Pinho, A.N. Barreto, M.J. Moraes, G.G. Ramos, C.E. Grudzinski and G.N. Azevedo</i>	774
67.14	Dairy cow behaviour as proxy for heat stress sensitivity in dairy cows <i>I. Fodor, R.S.C. Rijkers, M. Taghavi and I. Adriaens</i>	775
67.15	Exploring the feeding behaviour of dairy calves: insights from automated milk feeders <i>K.J. Hemmert, M.H. Ghaffari, T. Förster, C. Koch and H. Sauerwein</i>	775
67.16	Characterization of behavioural anomalies of lameness in dairy cows using sensor technology <i>N.L. Mhlongo</i>	776
67.17	Test of Bluetooth low energy localization system for dairy cows in a barn <i>J. Maxa, D. Nicklas, J. Robert, S. Steuer and S. Thurner</i>	776
67.18	Integrating inline milk infrared spectra and genomics to predict metabolic profiling in dairy cattle <i>D. Giannuzzi, L.F. Macedo Mota, H. Toledo Alvarado, S. Pegolo, L. Gallo, S. Schiavon, E. Trevisi and A. Cecchinato</i>	777
67.19	Influence on the water intake of lactating dairy cows <i>J. Heinicke, C. Ammon, T. Amon, G. Hoffmann and S. Pinto</i>	777

Session 68. Small Ruminant Technologies (Sm@RT) and Thematic network EuroSheep

Room: Roseraie 2

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Morgan-Davies / Grisot

Theatre Session 68	Book of Abstracts page
15:00 Sm@RT: Identifying sheep and goats farmers' technological needs and potential solutions <i>C. Morgan-Davies, L. Depuille, J.M. Gautier, A. McLaren, T.W.J. Keady, B. McClearn, L. Grova, P. Piirsalu, V. Giovanetti, I. Halachmi, A. Bar-Shamai, R. Klein, F. Kenyon and I. Llach-Martinez</i>	778
15:15 EuroSheep: increasing flock profitability through improved sheep health and nutrition management <i>P.G. Grisot, B. Fança, A. Carta, S. Salaris, C. Morgan-Davies, I. Beltran De Heredia, R. Ruiz, S. Ocak Yetisign, T.W.J. Keady, B. McClearn, R. Klein, D. Tsiokos and C. Ligda</i>	778
15:30 Sm@RT: Innovative technologies training for small ruminant producers <i>L. Depuille, J.M. Gautier, A. McLaren, T.W.J. Keady, B. McClearn, L. Grøva, P. Piirsalu, V. Giovanetti, I. Halachmi, A. Bar Shamai, R. Klein, F. Kenyon, I. Llach and C. Morgan-Davies</i>	779
15:45 EuroSheep: end-users assessments of flock health and nutrition best practices <i>P.G. Grisot, B. Fança, A. Carta, S. Salaris, C. Morgan-Davies, I. Beltran De Heredia, R. Ruiz, S. Ocak yetisign, T.W.G. Keady, B. McClearn, R. Klein, L. Perucho and C. Ligda</i>	779
16:00 Sm@RT: main lessons from New Zealand on PLF uptake in small ruminants <i>J.M. Gautier, C. Morgan-Davies, L. Depuille, A. McLaren, B. McClearn, L. Grøva, P. Piirsalu, V. Giovanetti, I. Halachmi, A. Bar-Shamai, R. Klein, F. Kenyon, E. Gonzalez-Garcia and T.W.J. Keady</i>	780
16:15 French regional project SO-PERFECTS: project methodology <i>C. Douine, L. Sagot, A.S. Thudor, M. Miquel, M. Bernard, M. Goyenetche and D. Gautier</i>	780
16:30 French regional project SO-PERFECTS: trial results <i>M. Bernard, L. Sagot, A.S. Thudor, C. Douine, M. Miquel, M. Goyenetche and D. Gautier</i>	781
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17:15 Use of innovative and precision tools in research stations with small ruminants: the INRAE case <i>I. Llach, H. Caillat, A. Fatet, S. Breton, T. Aguirre-Lavin, D. Dubreuil, A. Eymard, J. Boucherot, T. Fassier, D. Marcon, S. Parisot, C. Durand, G. Bonnafe, D. Portes, C. Morgan-Davies and E. González-García</i>	781
17:30 FEC check: development of an online tool to aid farmer understanding of roundworm faecal egg counts <i>E. Geddes, A. Duncan, K. Lamont, J. Duncan, F. Kenyon and L. Melville</i>	782
17:45 Assessing sheep behaviour in an human-animal interaction test using infrared termography <i>M. Almeida, A. Afonso, C. Guedes and S. Silva</i>	782

Scientific programme

Thursday 31 August 2023

Session 69.

Methods & genomic prediction

Room: Prestige Gratte Ciel

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Sell-Kubiak / El-Ouazizi

Theatre Session 69	Book of Abstracts page
8:30 Detection of interchromosomal rearrangements in bulls using large genotype and phenotype datasets <i>J. Jourdain, H. Barasc, T. Faraut, C. Grohs, C. Donnadieu, A. Pinton, D. Boichard and A. Capitan</i>	783
8:45 Functional information embedded in the unmapped short reads of whole-genome sequencing <i>G.B. Neumann, P. Korkuć, M. Reißmann, M.J. Wolf, K. May, S. König and G.A. Brockmann</i>	783
9:00 Expanding the capabilities of single-step GWAS with <i>P</i> -values for large genotyped populations <i>N. Galoro Leite, M. Bermann, S. Tsuruta, I. Misztal and D. Lourenco</i>	784
9:15 The Life-Functions Ratio: a new indicator trait of trade-offs to go beyond genetic correlations <i>N. Bedere, O. Cado, N.C. Friggens and P. Le Roy</i>	784
9:30 Impact of pedigree errors on the quality of predicted genetic merit from animal models <i>E.C.G. Pimentel, C. Edel, R. Emmerling and K.-U. Götz</i>	785
9:45 Bias in estimated variance components and breeding values due to pre-correction of systematic effect <i>P. Duenk and P. Bijma</i>	785
10:00 Improving computing performance of genomic evaluations by genotype and phenotype truncation <i>F. Bussiman, C. Cheng, J. Holl, A. Legarra, I. Misztal and D. Lourenco</i>	786
10:15 Coffee break	
10:45 A single-step evaluation of functional longevity of cows including data from correlated traits <i>L.H. Maugan, T. Tribout, R. Rostellato, S. Mattalia and V. Ducrocq</i>	786
11:00 Expected values of genomic prediction validation parameters for non-random validation sets <i>M.P.L. Calus, M. Schrauf, T. Pook, L. Ayres, R. Bonifazi, J. Ten Napel and J. Vandenplas</i>	787
11:15 Unknown parent groups and metafounders in genomic evaluation of Norwegian Red cattle <i>T.K. Belay, A.B. Gjuvsland, J. Jenko, L.S. Eikje and T. Meuwissen</i>	787
11:30 Exploring non linear genetic relationships between correlated traits <i>F. Shokor, P. Croiseau, R. Saintilan, T. Mary-Huard, H. Gangloff and B.C.D. Cuyabano</i>	788
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69.14 Improving the efficiency of genomic evaluations with random regression models <i>A. Alvarez Munera, D. Lourenco, I. Misztal, I. Aguilar, J. Bauer, J. Šplíchal and M. Bermann</i>	789

69.15	Comparison of two software to estimate breeding value in cattle by single-step approach <i>M. Jakimowicz, D. Słomian, T. Suchocki and J. Szyda</i>	790
69.16	Estimating (co)variance components using Monte Carlo EM-REML in a multi-trait SNPBLUP model <i>H. Gao, M.H. Lidauer, M. Taskinen, E.A. Mäntysaari and I. Strandén</i>	790
69.17	Molecular phenotyping to predict neonatal maturity <i>L. Liaubet, N. Marty-Gasset, L. Gress, A. Bonnet, P. Brenaut and E. Maigné</i>	791
69.18	Comparison of genetic maps from different cattle breeds <i>X. Ding, H. Schwarzenbacher, F.R. Seefried and D. Wittenburg</i>	791
69.19	Genomic relationships across metafounders using partial EM algorithm and average relationships <i>A. Legarra, M. Bermann, Q. Mei and O.F. Christensen</i>	792
69.20	Impact of the correlation between SNP effects in different breeds on the accuracy of predictions <i>P. Croiseau, R. Saintilan, D. Boichard and B. Cuyabano</i>	792
69.21	Early prediction of lactation persistency of multiparous cows managed for extended lactation <i>C. Gaillard, M. Boutinaud, J. Sehested and J. Guinard-Flament</i>	793
69.22	Accuracy of genomic prediction by singular value decomposition of the genotype matrix <i>L. Ayres, M.P.L. Calus, J. Ødegård and T. Meuwissen</i>	793
69.23	Enhancing long-term genetic gain through a Mendelian sampling-based similarity matrix <i>A.A. Musa and N. Reinsch</i>	794
69.24	Mining the convergence behaviour of a single-step SNP-BLUP model for genomic evaluation of stature <i>D.S. Dawid Słomian, J.S. Joanna Szyda and K.Ż. Kacper Żukowski</i>	794
69.25	Increase in prediction accuracy can be achieved by combining multiple populations <i>A. Ajasa, S. Boison, H. Gjølven and M. Lillehammer</i>	795
69.26	Enhancing bovine genome SNP call accuracy with autoencoder analysis of nucleotide impact with AI <i>K. Kotlarz, M. Mielczarek, B. Guldbandsen and J. Szyda</i>	795
69.27	Efficient SNP calling: Nextflow vs Bash on the whole genome bovine sequence <i>P. Hajduk, M. Sztuka, K. Liu, K. Kotlarz, M. Mielczarek and J. Szyda</i>	796
69.28	Variant calling and genotyping accuracy of ddRAD-seq: comparison with WGS in layers <i>M. Doublet, F. Lecerf, F. Degalez, S. Lagarrigue, L. Lagoutte and S. Allais</i>	796
69.29	Performing single-step genomic evaluation for superovulatory response traits in Japanese Black cows <i>A. Zoda, R. Kagawa, H. Tsukahara, R. Obinata, M. Urakawa, Y. Oono and S. Ogawa</i>	797
69.30	Production traits in Nellore cattle classified by residual feed intake <i>J.A. Muñoz, R.H. Branco, R.C. Canesin, J.N.S.G. Cyrillo, M.E.Z. Mercadante and S.F.M. Bonilha</i>	797
69.31	Effect of paternal breeding values for residual feed intake on reproductive performance of heifers <i>T. Devincenzi, M. Lema, L. Del Pino, A. Ruggia and E.A. Navajas</i>	798
69.32	Species identification of animal/pig DNA in non-animal food <i>M. Natonek-Wiśniewska and P. Krzyścin</i>	798
69.33	Development of a proxy for feed efficiency prediction in dairy cows based on mid-infrared spectra <i>M. Raemy, T. Haak, F. Schori and S. Ampuero Kragten</i>	799
69.34	Improving taste and flavour in dairy product through analysis of free fatty acid by MIR spectroscopy <i>O. Christophe, R. Reding, J. Leblois, D. Pittois, C. Guignard and F. Dehareng</i>	799
69.35	Modelling growth curves in challenged mice lines divergently selected for birth weight variability <i>V. Mora-Cuadrado, I. Cervantes, J.P. Gutiérrez and N. Formoso-Rafferty</i>	800

69.36	Genomic prediction of commercial layers' bone strength <i>M. Sallam, H. Wall, P. Wilson, B. Andersson, M. Schmutz, C. Benavides, M. Checa, E. Sanchez, A. Rodriguez, I. Dunn, A. Kindmark, D.J. De Koning and M. Johnsson</i>	800
69.37	Variability of daily milk yield during the first 100 days of lactation in Holstein cows <i>E. Kašná, L. Zavadilová and J. Vařeka</i>	801

Session 70.

Genetic parameters & GWAS

Room: Foyer Amphitheatre Rhone

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Egger-Danner / Martin

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8:30	Single-step GBLUP for growth and carcass traits in Nordic beef cattle <i>A. Nazari Ghadikolaei, F. Fikse and S. Eriksson</i>	801
8:45	Genetic parameters of pig birth weight variability <i>Y. Salimiyekta, S.B. Bendtsen, K.V. Riddersholm, M. Aaskov and J. Jensen</i>	802
9:00	Disentangling paternal and maternal components of within litter birth weight variability in mice <i>N. Formoso-Rafferty, L. El-Ouazizi El-Kahia, I. Cervantes and J.P. Gutiérrez</i>	802
9:15	(Co)variances between anogenital distance and fertility in Holstein-Friesian dairy cattle <i>M.A. Stephen, C.R. Burke, N. Steele, J.E. Pryce, S. Meier, P.R. Amer, C.V.C. Phyn and D.J. Garrick</i>	803
9:30	Genetic relationships between productive and reproductive traits on Friesian cows <i>S. Abomselem, A. Badr and A. Khattab</i>	803
9:45	Heritabilities of the mid-infrared spectra of sheep milk throughout the lactation <i>C. Machefert, C. Robert-Granié, J.M. Astruc and H. Larroque</i>	804
10:00	Genetic parameters for the composition of milk fatty acid of Holsteins <i>Y. Masuda</i>	804
10:15	Coffee break	
10:45	External and genetic factors influencing fertility in Latxa dairy sheep breed <i>C. Pineda-Quiroga, I. Granado-Tajada, E. Ugarte and A. Basterra-García</i>	805
11:00	Single-step genome-wide association for milk urea concentration in Walloon Holstein <i>H. Atashi, Y. Chen, C. Bastin, S. Vanderick, X. Hubin and N. Gengler</i>	805
11:15	Genome-wide association study for milk production traits in the Cyprus Chios sheep <i>A.N. Georgiou, G. Maimaris, S. Andreou, A.C. Dimitriou and G. Hadjipavlou</i>	806
11:30	Characterization of additive, dominance, and runs of homozygosity effects inbreeds of dairy cattle <i>H. Ben Zaabza, M. Neupane, M. Jaafar, K. Srikanth, S. McKay, A. Miles, H.J. Huson, I. Strandén, H. Blackburn and C.P. Van Tassell</i>	806
11:45	A genome-wide association study identified a major QTL affecting the red colour in nitrate free hams <i>J. Vegni, M. Zappaterra, R. Davoli, R. Virgili, N. Simoncini, C. Schivazappa, A. Cilloni and P. Zambonelli</i>	807
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70.13	Genetic relationships between milk fatty acids at early lactation and fertility in Holstein cows <i>T. Yamazaki, A. Nishiura, S. Nakagawa, H. Abe, Y. Nakahori and Y. Masuda</i>	807
70.14	Genetic parameters for early-life racing performance in pigeons <i>P. Duenk and D. Shewmaker</i>	808

70.15	Genetic parameters for milk urea in Swiss dairy cattle breeds <i>A. Burren and S. Probst</i>	808
70.16	Estimation of genetic correlations between predicted energy balance and fertility in Holsteins <i>A. Nishiura, O. Sasaki, S. Yamaguchi, Y. Saito, R. Tatebayashi and T. Yamazaki</i>	809
70.17	Comparison of random regression test-day models for production traits of South African Jersey cattle <i>M.G. Kinghorn, E.D. Cason, V. Ducrocq and F.W.C. Nesper</i>	809
70.18	Application of single-step genomic method in routine evaluation of Czech Holstein cattle <i>J. Bauer, J. Šplíchal, D. Fulínová and E. Krupa</i>	810
70.19	A meta-analysis of the genetic parameter estimates for lamb survival <i>S. Fernandes Lazaro, H. Rojas De Oliveira and F. S. Schenkel</i>	810
70.20	Survival analysis in the conservation program of an endangered wild ungulate (<i>Nanger dama mhorri</i>) <i>S. Domínguez, I. Cervantes, E. Moreno and J.P. Gutiérrez</i>	811
70.21	Genetic parameters of maturing rate index and asymptotic adult weight in French beef cattle <i>A. Lepers, S. Aguerre, J. Promp, S. Taussat, A. Vinet, P. Martin, A. Philibert, A. Laramee and L. Griffon</i>	811
70.22	Genetic architecture of the persistency of production, quality, and efficiency traits in laying hens <i>Q. Berger, N. Bedere, P. Le-Roy, T. Burlot, S. Lagarrigue and T. Zerjal</i>	812
70.23	On the potential of improving daily milk yield by extending productive lifespan <i>A. Bieber, F. Hediger, F. Leiber, C. Pfeifer and M. Walkenhorst</i>	812
70.24	Genetic trends in a selection process using electronic feeders to improve feed efficiency in rabbit <i>J.P. Sánchez, M. Pascual and M. Piles</i>	813
70.25	Maturity, a heritable trait in French dairy goat <i>M. Arnal, M. Chassier, V. Clément and I. Palihère</i>	813
70.26	Multivariate genome-wide associations for immune traits in two maternal pig lines <i>C. Große-Brinkhaus, K. Roth, M.J. Pröll-Cornelissen, A.K. Appel, H. Henne, K. Schellander and E. Tholen</i>	814
70.27	Estimation of heritability for digital dermatitis in Polish Holstein-Friesian cows <i>M. Graczyk-Bogdanowicz, K. Baczkiewicz and K. Rzewuska</i>	814
70.28	Genetic parameters for β -hydroxybutyrate concentration in milk in Spanish dairy cows <i>I. Cervantes, M.A. Pérez-Cabal, N. Charfeddine and J.P. Gutiérrez</i>	815

Session 71.

Building on a resilient dairy sector – from animal, farm and regional perspective – Part 2

Room: Foyer Amphitheatre Parc

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Brocard / Klopčič

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8:30	Comparison of self-assessment and objective indicators of attributes driving farms resilience <i>D. Martin-Collado, B. Soriano, J. Lizarralde, J.M. Mancilla-Leyton, N. Mandaluniz, P. Gaspar-García, Y. Mena-Guerrero and A. Prat-Benhamou</i>	815
8:45	Inventory and analysis of needs towards resilient dairy farming in 15 EU countries <i>A.M. Menghi and C.S.S. Soffiantini</i>	816
9:00	Assessment of solutions for resilient dairy farming in fifteen European countries <i>A. Kuipers, J. Zijlstra, R. Loges and S. Ostergaard</i>	816

9:15	Knowledge needs and solutions related to resilience in the European dairy sector <i>K. Kuoppala, M. Rinne, N. Browne and V. Brocard</i>	817
9:30	Resilience of contribution to food security of specialized Walloon dairy systems <i>C. Battheu-Noirfalise, E. Froidmont, D. Stilmant and Y. Beckers</i>	817
9:45	Innovative solutions supporting resilience of dairy farms in Netherlands <i>P.J. Galama, J. Zijlstra and A. Kuipers</i>	818
10:00	Needs of the dairy sector: a Hungarian overview <i>L. Czeglédi, B. Béri, I. Komlósi and E. Török</i>	818

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10:45	Eco-efficient low-cost pasture based dairy production on a mixed farm in Northern Germany <i>R. Loges and F. Taube</i>	819
11:00	Factors contributing to the financial resilience of spring-calving pasture-based dairy farms <i>G. Ramsbottom, B. Horan, K.M. Pierce, D.P. Berry and J.R. Roche</i>	819
11:15	Planning for resilient dairy farms in the USA <i>A. De Vries</i>	820
11:30	Towards a socially sustainable dairy sector with cow-calf contact systems <i>H.W. Neave, M. Bertelsen, E.H. Jensen and M.B. Jensen</i>	820
11:45	Resilient, healthy or efficient? The ideal animal according to breeders of small ruminants in Europe <i>E. Janodet and M. Sautier</i>	821

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71.13	Strategies and cases of resilience from dairy farming community in Slovenia <i>M. Klopčič</i>	821
71.14	How farm management influences the longevity of dairy cows: a comparative study of Swiss dairy farms <i>R.C. Eppenstein, A. Bieber, M. Lozano-Jaramillo and M. Walkenhorst</i>	822
71.15	High herd exit rates existence of small herds: a case study from North West Province, South Africa <i>M.D. Motiang and E.C. Webb</i>	822
71.16	Building on a resilient dairy sector- highlights and discussion <i>A. Kuipers, V. Brocard and M. Klopčič</i>	823
71.17	Economic and environmental impacts of cattle longevity extension by altered reproductive management <i>R. Han, A. Kok, M. Mourits and H. Hogeveen</i>	823

Session 72. What are the stakeholder and societal expectations of intrinsic and extrinsic quality of animal products?

Room: Tête D'or Lounge

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Martin / Roehrig

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8:30	Economic sustainability of different levels of extensiveness in fattening pig farms <i>P. Ferrari, C. Montanari and L. Giglio</i>	824
8:45	How to characterise the European livestock production systems? <i>E. Bailly-Caumette, S. Moakes, C. Pfeifer and D.R. Yáñez-Ruiz</i>	824

9:00	The IntaQt project's stakeholders' involvement: impact on the research work? <i>F. Bedoin, C. Couzy, C. Laithier, C. Berri and B. Martin</i>	825
9:15	EU policy impacts on the sustainability of the livestock sector, insights from the PATHWAYS project <i>N. Roehrig, A. Sans, K.-E. Trier-Kreutzfeldt, M.A. Arias Escobar, F.W. Oudshoorn, N. Bolduc, E. Regnier, P.-M. Aubert and L.G. Smith</i>	825
9:30	Stakeholders' perception of pig and chicken local breeds – a broad survey by the GEroNIMO project <i>M.J. Mercat, A.J. Amaral, R. Bozzi, M. Čandek-Potokar, P. Fernandes, J. Gutierrez Vallejos, D. Karolyi, D. Laloë, Z. Luković, H. Lenoir, G. Restoux, A. Vicente, V. Ribeiro, T. Rodríguez Silva, R. Rouger, D. Škorput and M. Škrlep</i>	826
9:45	Responding to stakeholder needs and consumer-driven demands in the dairy goat and poultry sectors <i>C. Bonardi and M. Gerevini</i>	826
10:00	The INTAQT project: stakeholders' opinions on future multicriteria scoring tools for animal products <i>I. Legrand, A. Nicolazo De Barmon, F. Albert, M. Berton, M. Bourin, V. Bühl, A. Cartoni Mancinelli, R. Eppenstein, D.A. Kenny, E. Kowalski, S. McLaughlin, G. Plesch, F. Bedoin, C. Couzy, C. Berri, B. Martin and C. Laithier</i>	827

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10:45	Co-designing Agroecology farming concepts to increase food sovereignty in the Global South <i>M. Simataa, R. Valkenburg and H. Romijn</i>	827
11:00	Mapping of value chains in the Italian bovine sector <i>M. Finocchi, M. Moretti, A. Mantino, A. Ripamonti, G. Conte and M. Mele</i>	828
11:15	The INTAQT project: stakeholders' expectations on husbandry systems and innovative practices <i>R.C. Eppenstein, V. Bühl, I. Legrand, A. Nicolazo De Barmon, B. Martin, F. Albert, M. Berton, M. Bourin, A. Cartoni Mancinelli, D.A. Kenny, E. Kowalski, S. McLaughlin, G. Plesch, F. Bedoin, C. Couzy, C. Berri and C. Laithier</i>	828
11:30	The INTAQT project: stakeholders' perceptions and points of view on products quality <i>C. Laithier, F. Bédoin, F. Albert, I. Legrand, A. Nicolazo De Barmon, M. Bourin, M. Berton, V. Bühl, R. Eppenstein, A. Cartoni Mancinelli, D.A. Kenny, E. Kowalski, S. McLaughlin, G. Plesch, C. Couzy, C. Berri and B. Martin</i>	829
11:45	Life cycle assessment of different pig production systems around Europe: mEATquality project <i>C. Reyes-Palomo, A. Pignagnoli, S. Sanz-Fernández, P. Meatquality Consortium and V. Rodríguez-Estévez</i>	829

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72.13	Consumer expectations for beef in the French region Auvergne-Rhône-Alpes <i>S. Chriki, J. Normand, C. Brosse, L. Hallez, L. Vallet, V. Payet and J.F. Hocquette</i>	830
72.14	Analysis of preferences and perception of cheese products by Portuguese consumers <i>V.M. Merlino, M. Renna, M. Tarantola, A. Ricci, A.S. Santos, A. Monteiro and J. Nery</i>	830
72.15	How a risk-based strategy could contribute to a more sustainable agri-food system? <i>B. Grossiord and M.P. Ellies-Oury</i>	831
72.16	Perceptions of meat quality of UK stakeholders: from intrinsic to extrinsic factors <i>S. McLaughlin, F. Bedoin, C. Couzy, I. Legrand, A. Nicolazo De Barmon, C. Laithier and N. Scollan</i>	831
72.17	Transforming livestock practices by federating around common values <i>S. Nade</i>	832

Room: Bellecour 2

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Van Milgen / Geraert / Mercier

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8:30	Genetic response of red yeast supplementation in feed to mycotoxin contamination in laying hens <i>S. Hosseini, B. Brenig, W. Tapingkae and K. Gatphayak</i>	832
8:45	Faecal starch content as an indicator of starch digestibility by fattening Japanese Black cattle <i>M. Matamura, S. Uzawa and M. Kondo</i>	833
9:00	Impact of isoacids on performance and digestibility in gilts fed different dietary fibre sources <i>W. Schweer, B. Kerr, M. Socha, A. Cornelison and L. Rodrigues</i>	833
9:15	The enterotype is associated with the phenotype variation in the pigs treated with dietary fibre <i>H. Li and B.E. Tan</i>	834
9:30	A high rumen degradable starch modulates jejunum microbiota and bile acids in dairy goats <i>L.M. Wang, J.H. Yao and Y.C. Cao</i>	834
9:45	Development of a novel endolysin, RalLys8, for the specific inhibition of <i>Ruminococcus albus</i> <i>J. Moon, H. Kim and J. Seo</i>	835
10:00	Dietary microalgae (<i>Nannochloropsis limnetica</i>) and probiotic on performance and intestine of piglets <i>M.F. Pedro, D.F.P. Carvalho, A.M. Almeida, R.J.B. Bessa, A.J.M. Fonseca, A.R.J. Cabrita and J.P.B. Freire</i>	835
10:15 Coffee break		
10:45	Muramidase inclusion reduces gut inflammation in weaned piglets, especially in high protein diets <i>U.M. McCormack, J. Schmeisser, E. Bacou, P. Jenn, F. Amstutz and E. Perez Calvo</i>	836
11:00	Utilization of tryptophane by kynurenine, indoles and serotonin pathways are modified by fructose <i>A. Gual-Crau, M. Jarzaquet, D. Dardevet, D. Rémond, A. Lefèvre, A. Bernalier-Donadille, P. Emond and I. Savary-Auzeloux</i>	836
11:15	Regulation of glucose metabolism in rumen epithelium of cows transitioned from forage to high-grain <i>S. Kreuzer-Redmer, A. Sener, C. Pacifico, F. Dengler, S. Ricci, H. Schwartz-Zimmermann, E. Castillo-Lopez, N. Reisinger and Q. Zebeli</i>	837
11:30	Altering nutrients supply modified dynamics of milk components synthesis in dairy cows <i>J.C. Anger, C. Loncke, R. Bidaux and S. Lemosquet</i>	837
11:45	Phytogetic effects on layer performance, egg quality and cytoprotective response in the ovaries <i>I.P. Brouklogiannis, E.C. Anagnostopoulos, V.V. Paraskeuas, E. Griela, G. Kefalas and K.C. Mountzouris</i>	838
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73.13	Phytogetic effects on layer performance, and cytoprotective response in the ceca <i>E.C. Anagnostopoulos, I.P. Brouklogiannis, V.V. Paraskeuas, E. Griela, G. Kefalas and K.C. Mountzouris</i>	838
73.14	Effects of guanidinoacetic acid supplementation on growth performance in Nellore cattle <i>O.R.M. Neto, I.M.S.C. Farias, R.N.S. Torres, R.V. Ribeiro, W.A. Baldassini, R.A. Curi, L.A.L. Chardulo and G.L. Pereira</i>	839
73.15	In feed histidine supplementation improves muscle carnosine content and meat quality in pigs <i>M. Paniagua, B. Saremi, B. Matton and S. De Smet</i>	839
73.16	Impact of functional amino acids on performance parameters in post-weaning piglet <i>A. Simongiovanni, K. Fenske, F. Witte, H. Westendarp and T. Chalvon-Demersay</i>	840

73.17	Phytobiotics from <i>Thymus</i> species in poultry feed – thymol, carvacrol and rosmarinic acid <i>M. Taghouti</i>	840
73.18	Dietary microalgae (<i>Chlorella vulgaris</i>) and probiotic on performance and intestine of piglets <i>M.F. Pedro, D.F.P. Carvalho, A.M. Almeida, R.J.B. Bessa, A.J.M. Fonseca, A.R.J. Cabrita and J.P.B. Freire</i>	841

Session 74. Balancing the feed for the economy, the environment, and society

Room: Bellecour 1

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: De Campeneere / Bruggeman

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8:30	Effects of linseed oil, a brown seaweed and seaweed extract on methane emissions in beef cattle <i>E. Roskam, D.A. Kenny, V. O'Flaherty, M. Hayes, A.K. Kelly and S.M. Waters</i>	841
8:45	Effect of whey on methane emission and systemic comparison of <i>in vivo</i> and <i>in vitro</i> methane formation <i>H. Luisier-Sutter, M. Terranova, S.L. Amelchanka, K. Schweingruber, S. Hug, K. Müller, L. Isele, K. Sommer and M. Schick</i>	842
9:00	Effects of feeding fresh white clover on digestibility and methane emission in lambs <i>X. Chen, S. Ormston, S. Stergiadis, K. Theodoridou, O. Cristobal-Carballo and T. Yan</i>	842
9:15	Algae for reducing methane from dairy cows: what expectation with French local resources? <i>B. Rouillé, H. Marfaing, F. Dufreneix, S. Point, M. Gillier, R. Boré, J. Jurquet and N. Edouard</i>	843
9:30	Managing the rumen microbiome to reduce methane emissions through dietary interventions <i>G. Pugh, O. Cristobal Carballo, T. Yan, C. Creevey and S. Huws</i>	843
9:45	Production and enteric methane emissions in grazing dairy cows fed flaxseed-based supplement <i>M.A. Rahman, K.V. Almeida, D.C. Reyes, A.L. Konopoka, M.A. Arshad and A.F. Brito</i>	844
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10:45	Establishing conclusive links between the gastrointestinal microbiota and feed efficiency in cattle <i>M.M. Dycus, U. Lamichhane, C.B. Welch, K.P. Feldmann, T.D. Pringle, T.R. Callaway and J.M. Lourenco</i>	845
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11:15	Impact on environment and performance of the replacement of soybean meal in post-weaning pig diets <i>E. Royer, P. Pluk, J. De Laat, G. Binnendijk, K. Goris and P. Bikker</i>	846
11:30	Simulating pig multiperformance in contrasted breeding systems using an individual-based model <i>E. Janodet, F. Garcia-Launay and H. Gilbert</i>	846
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Date: Thursday 31 August 2023; 8:30 – 12:00

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- 75.19 Effect of yoghurt acid whey on quality characteristics of corn silage 857
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Session 76.

Humans and horses: from One Health to One Life perspectives

Room: Bellecour 3

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Evans / Montovani

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Session 77. Trade-offs between health, production and welfare in pigs and poultry: which tools do we have and which research is needed?

Room: Gratte Ciel 1

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Nilsson / Millet

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8:30 The future of genetic selection in pigs and poultry <i>invited</i> L. Verschuren and P.W. Knap	864
9:15 The future of nutrition research in pigs and poultry <i>invited</i> S. Vigers and J.V. Milgen	865
10:00 Economically sustainable and animal welfare friendly animal production: what is the role of research <i>invited</i> A. Silveira and H.A.M. Spooler	865
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Session 78. Insect nutrition (substrates) & insect health

Room: Tête D'or 2

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Biasato / Lefebvre

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10:00 Starch digestion in <i>H. illucens</i> conversion: exploring the role of amylases from larvae and substrate J.B. Guillaume, S. Mezdour, F. Marion-Poll, C. Terrol, C. Brouzes and P. Schmidely	869
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Session 79.

Improved insight into the reproductive physiology of livestock

Room: Tête D'or 1

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Kenny

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9:00 Improving cow fertility by immunizing against inhibin and P4 supplementation 877
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9:15 Characterization of sex chromosomes-linked lncRNAs in Holstein spermatozoa under stress conditions 877
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10:00 Application of an oligo-based FISH method in fertility assessment of boars by chromosomal analysis 879
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79.16	Distribution of adipokines in reproductive tract and embryonic annexes in hen <i>O.B. Bernardi, A.E. Estienne, M.R. Reverchon, A.B. Brossaud, C.R. Rame and J.D. Dupont</i>	884
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Session 80.

Animal behaviour

Room: Gratte Ciel 3

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Dantas / Boyle

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8:30	Creating a culture of openness for the responsible use of video observation in animal sciences <i>M.F. Giersberg and F.L.B. Meijboom</i>	885
8:45	Salivary oxytocin and lachrymal caruncle temperature as indicators of anticipation in growing pigs <i>G.A. Franchi, L.R. Moscovice, H. Telkänranta and L.J. Pedersen</i>	885
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9:30	Detecting onset of farrowing using CUSUM-charts based on sows' activity <i>T. Wilder, B. Baude and J. Krieter</i>	887
9:45	Impact of environmental enrichment on the behaviour and immune cell transcriptome of pregnant sows <i>M.M. Lopes, C. Clouard, J. Chambeaud, M. Brien, N. Villain, C. Gerard, F. Hérault, A. Vincent, I. Louveau, R. Resmond, H. Jammes and E. Merlot</i>	887
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10:45	Lower redness of the facial skin is a marker of a positive human-hen relationship <i>D. Soulet, A. Jahoui, M.-C. Blache, B. Piégu, G. Lefort, L. Lansade, K. Germain, F. Lévy, S. Love, A. Bertin and C. Arnould</i>	888
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80.15	Effects of olfactory exposure to twelve essential oils on behaviour and health of cows with mastitis <i>R. Nehme, C. Michelet, E. Vanbergue, O. Rampin, S. Bouhallab, A. Aupiais and L. Andennebi-Najar</i>	892
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80.19	Behaviour test and study of sheepdogs' abilities <i>B. Lasserre, B. Ducreux, M. Chassier, L. Joly, T. Le Morzadec, P. Cacheux and C. Gilbert</i>	894
80.20	Innovative evaluation method of behavioural reactivity for 'foie gras' ducks <i>C.M. Monestier, A.W. Warin, S.L. Lombard, S.L.M. Laban-Mele and W.M. Massimo</i>	894
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Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Druyan / Bloch

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9:30	Using image classification to estimate feed intake in weaned piglets under commercial conditions <i>T. Van De Putte, J. Degroote and J. Michiels</i>	896
9:45	The value of precision feeding technologies: economic, productivity and environmental aspect <i>J.K. Niemi</i>	897
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10:45	Precision feeding in dairy cows: what do professionals in ruminant nutrition think about it? <i>A. Igier, A. Petillon-Pronk, J. Martin, E. Hertault, N. Gaudillière, J. Jurquet, A. Fischer and Y. Le Cozler</i>	897
11:00	Characterizing dairy cow's individual reaction to a decrease in production concentrate distribution <i>A. Fischer, R. Lehuraux and J. Jurquet</i>	898
11:15	Longitudinal patterns for feeding traits in the two parental populations of the mule duck <i>H. Chapuis, C. Ribas, H. Gilbert, M. Lagüe and I. David</i>	898
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81.11	Effects of monosaccharides on <i>in vitro</i> NDF and starch digestibility, pH and volatile fatty acids <i>E. Raffrenato, G. Esposito and L. Bailoni</i>	900
81.12	Benefit of full matrix application for a novel phytase using a phased-dosing or fixed dosing strateg <i>B.C. Hillen, S. Gilani, R.D. Gimenez-Rico, K.M. Venter, P. Plumstead and Y. Dersjant-Li</i>	901
81.13	Use of fodder beets in French dairy diets: farmers points of views and experimental results <i>V. Brocard, A. Marsault, L. Vivenot, E. Tranvoiz and J. Jurquet</i>	901
81.14	Effect of wilting grass silage on milk production of dairy cows fed two concentrate protein levels <i>M. Grøseth, L. Karlsson, H. Steinshamn, M. Johansen, A. Kidane and E. Prestløyken</i>	902
81.15	Zootechnical performance of dairy cattle fed ensiled Italian ryegrass or winter rye <i>L. Vandaele, J.L. De Boever, T. Van Den Nest and K. Goossens</i>	902
81.16	Performance of NIR spectrometry to predict amino acids content in forages <i>L. Bahloul, V. Larat, P. Riche and B. Sloan</i>	903

Session 82. Product quality and efficiency of small ruminant production systems

Room: Roseraie 2

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Hernández-Castellano / Tsiplakou

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8:30	The performance of cross fostered lambs from birth to weaning on commercial sheep flocks in Ireland <i>F.P. Champion, J. Molloy and M.G. Diskin</i>	904
8:45	Latent factors analysis of protein profile, composition, and cheese-making traits of goat milk <i>N. Amalfitano, G. Secchi, M. Pazzola, G.M. Vacca, M.L. Dettori, F. Tagliapietra, S. Schiavon and G. Bittante</i>	904
9:00	Pyrenean wools: how improving the organisation of the upstream and downstream sectors in the massif <i>C. Viguié, S. Fichot and G. Brunschwig</i>	905
9:15	The Gentile di Puglia merino sheep breeds preliminary wool quality assessment <i>V. Landi, E. Ciani, G. Molina, R. Topputi, F.M. Sarti, A. D'Onghia, G. Mangini, F. Pilla, S. Grande, A. Maggiolino and P. De Palo</i>	905
9:30	Using indoor and outdoor finishing systems to finish hill lambs to carcass weights between 12-16 kg <i>M. Dolan, T. Boland, N. Claffey and F. Champion</i>	906
9:45	Influence of climatic disturbances on the lactation curve in dairy goats <i>A. Harnois Gremmo, N. Gafsi, F. Bidan, O. Martin and L. Pullet</i>	906
10:00	Genetic parameters for fleece uniformity in Alpacas <i>J.P. Gutiérrez, A. Cruz, R. Morante, A. Burgos, N. Formoso-Rafferty and I. Cervantes</i>	907
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10:45	Farmers' competitions: stimulating new management practices by Peruvian alpaca and llama farmers <i>E. Quina, T. Felix, M. Aguilar, G. Gutierrez, J. Candio, J. Gamarra, M. Mamani, A. Mejía and M. Wurzinger</i>	907
11:00	YoGArt project: milk quality and oxidative status of ewes fed microalgae blend <i>A. Mavrommatis, P. Kyriakaki, F. Satolias and E. Tsiplakou</i>	908
11:15	Goat AI programs based on the male effect using less or no hormones progress with suitable results <i>A. Fatet, L. Johnson, L. Jourdain, F. Bidan and P. Martin</i>	908
11:30	Fiber characteristics of cashmere goat in Mongolia <i>S.B. Baldan, M.P. Purevdorj, G.M. Mészáros and J.S. Sölkner</i>	909
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82.13	No effect of meslin flattening on dairy ewes <i>B. Fañça, A. Hardy, M. Rinn and L. Buisson</i>	910
82.14	Quality of cheeses made from the milk of native breeds of goats <i>A. Kawęcka, M. Pasternak, J. Sikora and M. Puchała</i>	910
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82.16	Genetic parameters of medullation types in alpaca fibre <i>A. Cruz, Y. Murillo, A. Burgos, A. Yucra, M. Quispe, E. Quispe and J.P. Gutiérrez</i>	911
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82.18	Synchrotron FTIR microspectroscopy investigation on the sperm cryopreservation of Sanan goat <i>S. Ponchunchoovong, F. Suwor, K. Tammanu and S. Siriwong</i>	912
82.19	A need for knowledge on the utilisation of forage by goats according to the distribution methods <i>B. Fañça and B. Bluet</i>	913
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82.21	Milk fat nutritional indices – a comparative study between retail goat and cow milk <i>G. Papatzimos, P. Mitlianga, M.A. Karatzia, Z. Basdagianni and E. Kasapidou</i>	914
82.22	Mountain caprine milk – the higher the better? <i>M.A. Karatzia, M. Amanatidis, G. Papatzimos, E. Kasapidou, P. Mitliagka and Z. Basdagianni</i>	914
82.23	Results of milk performance of Carpathian goats <i>J. Sikora, A. Kawęcka, M. Puchała and M. Pasternak</i>	915
82.24	Barley in concentrates for dairy goats – effects of alkaline and mechanical treatments <i>A. Martinsen, D. Galméus, H. Volden, K. Hove, M. Silberberg and M. Eknæs</i>	915

Session 83.

Genetic diversity

Room: Prestige Gratte Ciel

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Neumann / Schiavo

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14:15	The detection of putative recessive lethal haplotypes in Irish sheep populations <i>R. McAuley, N. McHugh, T. Pabiou and D.C. Purfield</i>	916
14:30	Assessing the impact of inbreeding on mastitis and digital dermatitis in German dairy cattle <i>J. Mugambe</i>	917
14:45	Genomic inbreeding in the Austrian Turopolje pig population <i>G. Mészáros, B. Berger, C. Draxl and J. Sölkner</i>	917
15:00	A genetic diversity study of a local Belgian chicken breed using the new IMAGE SNP array <i>R. Meyermans, W. Gorssen, J. Bouhuijzen Wenger, O. Heylen, J. Martens, S. Janssens and N. Buys</i>	918
15:15	Genetic diversity in Dutch sheep breeds shaped by geography, history, use and genetic management <i>J.N. Hoorneman, W.J. Windig and M.A. Schoon</i>	918
15:30	Genetic diversity and population structure of the Cyprus Chios sheep and Damascus goat breeds <i>A.C. Dimitriou, G. Maimaris, A.N. Georgiou and G. Hadjipavlou</i>	919
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16:15	Genome-wide analysis of Greek goats with global breeds revealing population structure and diversity <i>E. Tosiou, V. Tsartsianidou, S. Vouraki, V. Papanikolopoulou, L.V. Ekateriniadou, E. Boukouvala, I.G. Bouzalas, I. Sakaridis, G. Arsenos and A. Triantafyllidis</i>	919

16:30	Genome-wide scan for runs of homozygosity in South American camelids <i>S. Pallotti, M. Picciolini, M. Antonini, C. Renieri and V. Napolioni</i>	920
16:45	Exploring global cattle genealogy with tree sequence <i>G. Mafra Fortuna, J. Obsteter, A. Kranis and G. Gorjanc</i>	920
17:00	Which diversity measures are important for small breeds like German Black Pied Cattle (DSN)? <i>G.A. Brockmann, G.B. Neumann, P. Korkuc, M.J. Wolf, K. May and S. König</i>	921
17:15	Characterisation of free-living and exotic animal species at species and individual level <i>M. Zorc, M. Cotman, A. Dovč, J. Zabavnik-Piano and P. Dovc</i>	921
17:30	Comparative analysis of heterozygosity-enriched regions in two autochthonous Italian cattle breeds <i>G. Schiavo, S. Bovo, F. Bertolini, A. Ribani, V. Taurisano, S. Dall'olio, M. Bonacini and L. Fontanesi</i>	922
17:45	Recovering latent population stratification using ADMIXTURE and metafounders in Brown Swiss <i>C. Anglhuber, C. Edel, E.C.G. Pimentel, R. Emmerling, K.-U. Götz and G. Thaller</i>	922

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83.15	Genomic diversity analysis of the Swedish Landrace goat <i>B. Hegedüs, A.M. Johansson and P. Bijma</i>	923
83.16	Effect of interpopulation distance on average heterosis in crosses <i>A. Legarra, D. Gonzalez-Dieguez, A. Charcosset and Z.G. Vitezica</i>	923
83.17	Genome of the extinct Gotland cattle breed <i>M. Johnsson and A.M. Johansson</i>	924
83.18	Genetic variability in Italian Mediterranean buffalo: implications for conservation and breeding <i>M.M. Gómez, R. Cimmino, D. Rossi, G. Zullo, G. Campanile, G. Neglia and S. Biffani</i>	924
83.19	A comparative genome analysis across pig breeds can help to identify putative deleterious alleles <i>M. Ballan, S. Bovo, G. Schiavo, F. Bertolini, M. Bolner, M. Cappelloni, S. Tinarelli, M. Gallo and L. Fontanesi</i>	925
83.20	The effect of recessive genetic defects on pregnancy loss in Swedish dairy cattle <i>P. Ask-Gullstrand, E. Strandberg, R. Båge, E. Rius-Vilarrasa and B. Berglund</i>	925

Session 84. EuroFAANG: genotype-to-phenotype research across Europe and beyond

Room: Foyer Amphitheatre Rhone

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Clark / Kuhn

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14:15	GENE-SWitCH: improving the functional annotation of pig and chicken genomes for precision breeding <i>E. Giuffra, H. Acloque, A.L. Archibald, M.C.A.M. Bink, M.P.L. Calus, P.W. Harrison, C. Kaya, W. Lackal, F. Martin, A. Rosati, M. Watson and J.M. Wells</i>	926
14:30	Genome-wide association studies for body weight in broilers using sequencing and SNP chip data <i>E. Tarsani, V. Riggio and A. Kranis</i>	927
14:45	Using methylation annotation to improve genomic prediction of gene expression in pigs <i>B.C. Perez, J. De Vos, D. Crespo-Piazzuello, M.C.A.M. Bink, M. Ballester, M.J. Mercat, O. Madsen and M.P.L. Calus</i>	927

15:00	The path from functional annotation towards improved genomic prediction in cattle <i>C. Kühn</i>	928
15:15	Biology-driven genomic predictions for dry matter intake within and across breeds using WGS data <i>R. Bonifazi, G. Plastow, M. Heidaritabar, A.C. Bouwman, L. Chen, P. Stothard, J. Basarb, C. Li, Bovreg Consortium and B. Gredler-Grandl</i>	928
15:30	Newly annotated genomic features for biology-driven genome selection: the BovReg contribution <i>G.C.M. Moreira, L. Tang, S. Dupont, M. Bhati, H. Pausch, D. Becker, M. Salavati, R. Clark, E.L. Clark, G. Plastow, C. Kühn, C. Charlier and The Bovreg Consortium</i>	929
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16:15	AQUA-FAANG: decoding genome function to enhance genotype-to-phenotype prediction in farmed finfish <i>D. MacQueen and S. Lien</i>	929
16:30	Integrating functional annotation data in genomic prediction of VNN resistance in European sea bass <i>S. Faggion, R. Mukiibi, L. Peruzza, M. Babbucci, R. Franch, G. Dalla Rovere, S. Ferraresso, D. Robledo and L. Bargelloni</i>	930
16:45	GEroNIMO (Genome and Epigenome eNabled breeding in MOnogastrics) <i>S. Lagarrigue, F. Pitel and T. Zerjal</i>	930
17:00	RUMIGEN: new breeding tools in a context of climate change <i>S. Mattalia, A. Vinet, M.P.L. Calus, H.A. Mulder, M.J. Carabaño, C. Diaz, M. Ramon, S. Aguerre, J. Promp, R. Vallée, B.C.D. Cuyabano, D. Boichard, E. Pailhoux and J. Vandenplas</i>	931
17:15	The genetic basis of ruminant microbiomes – contribution of the HoloRuminant project <i>Y. Ramayo-Caldas, I. Mizrahi, P. Pope, C. Creevey, J.P. Sanchez, R. Quintanilla and D. Morgavi</i>	931

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84.13	The effect of production systems on adipose tissue gene expression in Krškopolje pig <i>K. Poklukar, M. Čandek-Potokar, N. Batorek-Lukač, M. Vrecl, G. Fazarinc and M. Škrlep</i>	932
84.14	A lncRNA gene-enriched atlas for GRCg7b chicken genome using Ensembl, RefSeq and two FAANG databases <i>F. Degalez, M. Charles, S. Foissac, H. Zhou, D. Guan, L. Fang, C. Klopp, F. Lecerf, T. Zerjal, F. Pitel and S. Lagarrigue</i>	932

Session 85.

Climate care dairy farming: herd management – Part 3

Room: Foyer Amphitheatre Parc

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Cieślak / Kuipers

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14:00	Effect of the Rumitech in a high-forage diet on methane production and performance of dairy cows <i>A. Cieslak, H. Huang, B. Nowak, M. Kozłowska, D. Lechniak, P. Pawlak, M. Szumacher-Strabel and J. Dijkstra</i>	933
14:15	invited Sorghum hybrids as viable forage alternative to corn silage when water availability is limited <i>D. Duhatschek, J. Bell, D. Druetto, L.F. Ferraretto, K. Raver, J. Goeser, J. Smith, S. Paudyal, G.M. Schuenemann and J.M. Piñeiro</i>	933
14:30	Feed intake and milk production of dairy cows fed with a ration with ensiled tall fescue <i>M. Cromheeke, L. Vandaele, D. Van Wesemael, J. Baert, M. Cougnon, D. Reheul and N. Peiren</i>	934
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15:00	Greenhouse gas emissions from dairy cows fed best practice diets <i>M. Managos, C. Lindahl, S. Agenäs, U. Sonesson and M. Lindberg</i>	935

15:15	Effects of cashew nutshell liquid on milk production and methane emission of dairy cows <i>R.J.F. Gaspe, T. Obitsu, T. Sugino, Y. Kurokawa and Y. Kuroki</i>	935
15:30	<i>In vivo</i> testing of a methane-suppressing feed additive that acts by altering rumen redox potential <i>C. O'Donnell, C. Thorn, A.C.V. Montoya, S. Nolan, M. McDonagh, E. Dunne, F. McGovern, R. Friel, S. Waters and V. O'Flaherty</i>	936
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16:15	Diurnal variation and repeatability of CO ₂ production in GreenFeed studies with lactating cows <i>A. Guinguina and P. Huhtanen</i>	936
16:30	Repeatability and correlations of residual carbon dioxide and feed efficiency in Nordic Red cattle <i>A. Chegini, M.H. Lidauer, T. Stefanski, A.R. Bayat and E. Negussie</i>	937
16:45	Methane emission from purebred Holstein, Nordic Red and F1 crossbred cows of the two breeds <i>A.L.F. Hellwing, M. Vestergaard and M. Kargo</i>	937
17:00	How does a beef × dairy calving affect the dairy cow's following lactation? <i>R.E. Espinola Alfonso, W.F. Fikse, M.P.L. Calus and E. Strandberg</i>	938
17:15	Extended lactation and milk yield – a randomized controlled trial in high yielding older cows <i>A. Hansson, C. Kronqvist, R. Båge and K. Holtenius</i>	938
17:30	Effect of usage BWB sire on Holstein cow performances <i>K. Elzinga, C. Schrooten, G. De Jong and P. Duenk</i>	939
17:45	Combined analysis: genetic and phenotypic trends in German Holstein dairy cattle <i>L. Hüneke, J. Heise, D. Segelke, S. Rensing and G. Thaller</i>	939

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85.16	Gallic acid alleviates the negative effect of <i>Asparagopsis armata</i> on milk yield in dairy cows <i>R. Huang, P. Romero, C. Martin, E.M. Ungerfeld, A. Demeter, A. Belanche, D.R. Yáñez-Ruiz, M. Popova and D. Morgavi</i>	940
85.17	Milk production in primiparous cows with customized voluntary waiting period <i>A. Edvardsson Rasmussen, E. Strandberg, R. Båge, M. Åkerlind, K. Holtenius and C. Kronqvist</i>	941
85.18	Association of nisin and <i>Cymbopogon citratus</i> against <i>S. aureus</i> isolated from bovine mastitis <i>L. Castelani, T.M. Mitsunaga, L.C. Roma Jr. and L.E.F. Zadra</i>	941

Session 86. **How to address stakeholder and societal expectations of intrinsic and extrinsic quality of animal products?**

Room: Tête D'or Lounge

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Ferrari / Giusti

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14:00	Quick sustainability scan calculator for intensive and extensive pig farms <i>S. Sanz-Fernández, C. Reyes-Palomo, P. Meatquality Consortium and V. Rodríguez-Estévez</i>	942
14:15	Bulk milk and farms characterization in the Parmigiano Reggiano Consortium area: the INTAQT project <i>M. Berton, M.A. Ramirez Mauricio, N. Amalfitano, L. Gallo, A. Cecchinato and E. Sturaro</i>	942

14:30	Bridging environmental sustainability and intrinsic quality traits of pork <i>M. Gagaoua, F. Gondret, F. Garcia-Launay and B. Lebret</i>	943
14:45	Improving milk intrinsic quality: considering synergies and antagonisms of farming practices <i>L. Rey-Cadilhac, A. Ferlay, M. Gelé, S. Léger and C. Laurent</i>	943
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15:15	Current prediction and authentication tools used and needed in EU livestock product chains <i>S. McLaughlin, F. Albert, F. Bedoin, C. Couzy, I. Legrand, A. Nicolazo De Barmon, C. Laithier, C. Manuelian, F. Klevenhusen, S. De Smet, E. Sturaro and N. Scollan</i>	944
15:30	Milk quality assessment for intensive and extensive goat farming of the Skopelos breed in Greece <i>Z. Basdagianni, I. Stavropoulos, G. Manassis, C.G. Biliaderis and I. Bossis</i>	945

15:45 Coffee break

16:15	Rheological evaluation of rennet-induced curdling of goat milks from different farming systems <i>K. Kotsiou, M. Andreadis, A. Lazaridou, C.G. Biliaderis, Z. Basdagianni, I. Bossis and T. Moschakis</i>	945
16:30	Technological tools for authentication assessment of animal products <i>invited C.L. Manuelian</i>	946
17:00	Potential of milk infrared spectroscopy to discriminate farm characteristics: the INTAQT project <i>M.A. Ramirez Mauricio, D. Giannuzzi, L. Gallo, M. Berton, A. Cecchinato and E. Sturaro</i>	946
17:15	A longitudinal cohort study of health and welfare status in extensively and intensively reared goats <i>V. Korelidou, A.I. Kalogianni and A.I. Gelasakis</i>	947
17:30	New tool for accurate analysis of gas concentrations in barns <i>O. Bonilla-Manrique, A. Moreno-Oyervides, H. Moser, J.P. Waclawek, B. Lendl and P. Martín-Mateos</i>	947

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86.13	Implementation of husbandry practices improving quality and sustainability: a living lab approach <i>E. Sturaro, C. Berri, D. Berry, R. Eppenstein, C. Laithier, A. Cartoni Mancinelli, B. Martin and F. Leiber</i>	948
86.14	Muscle proteomics towards molecular understanding of colour and water-holding biochemistry in meat <i>S. Yigitturk</i>	948
86.15	Exploring YOLO deep learning model for goat detection in animal welfare and behavioural monitoring <i>A. Temenos, A. Voulodimos, D. Kalogeras and A. Doulamis</i>	949
86.16	The association between body condition score and the udder skin surface temperature in goats <i>V. Korelidou, A.I. Kalogianni and A.I. Gelasakis</i>	949

Session 87.

Carbon sources and sinks within global livestock systems

Room: Bellecour 2

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Salami / Pouloupoulou

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14:00	Leveraging the measuring and managing of livestock farms on the journey towards Net Zero <i>invited J. Gilliland</i>	950
14:30	The role of carbon sequestration in organic dehesas ruminant farms <i>R. Casado, M. Escribano, P. Gaspar and A. Horrillo</i>	950

14:45	Estimating soil carbon sequestration gaps for ruminant systems across the globe <i>Y. Wang, I. Luotto, Y. Yigini, R. Vargas, D. Wisser, T.P. Robinson, U.M. Persson, C. Cederberg, R. Ripoll-Bosch, I.J.M. De Boer and C.E. Van Middelaar</i>	951
15:00	Agronomic and environmental impacts of sheep integration in cover crop management in Wallonia <i>N. Lorant, B. Huyghebaert and D. Stilmant</i>	951
15:15	Carbon footprint assessment of Korean native beef cattle and options to achieve net-zero emissions <i>R. Ibdhi, T. Kim, J. Byun, R. Bharanidharan, Y. Lee, S. Kang and K. Kim</i>	952
15:30	Carbon Footprint of organic beef from dairy male calves <i>L. Mogensen, T. Kristensen, C. Kramer, A. Munk, P. Spleth and M. Vestergaard</i>	952
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16:15	Model to calculate the impact of interventions on the carbon footprint of dairy <i>A. Esselink</i>	953
16:30	Tools to optimise the carbon footprint of milk production <i>D. Schwarz</i>	953
16:45	Evaluation of feed additives under varying diets of dairy cows on performances and enteric emissions <i>M.E. Uddin, M.R.A. Redoy, S. Ahmed, M. Bulness, D.H. Kleinschmit, J. Lefler and C. Marotz</i>	954
17:00	Supplementation with a calcium peroxide additive mitigates enteric methane emissions in beef cattle <i>E. Roskam, D.A. Kenny, V. O'Flaherty, A.K. Kelly and S.M. Waters</i>	954
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17:30	Feeding a starch and protein binding agent for mitigating enteric methane emissions in sheep <i>P. Prathap, S.S. Chauhan, J.J. Cottrell, B.J. Leury and F.R. Dunshea</i>	955

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87.14	Dairy goat farms in Extremadura: carbon sources and sinks in several management systems <i>L. Madrid, M. Escribano, P. Gaspar and A. Horrillo</i>	956
87.15	Life cycle assessment of IntelliBond on the carbon footprint of a dairy farm <i>D. Brito De Araujo, K. Perryman and J.G.H.E. Bergman</i>	957
87.16	Effects of supplementation of <i>Asparagopsis taxiformis</i> as a means to mitigate methane emission <i>M. Angellotti, M. Lindberg, M. Ramin, S.J. Krizsan and R. Danielsson</i>	957

Session 88.

Minerals in animal nutrition: basal diet – Part 2

Room: Bellecour 1

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Alvarez Rodriguez / Windisch

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14:30	Review on native Se concentrations in feed ingredients <i>D. Cardoso and A. Hachemi</i>	958

14:45	Does USEtox predicts adequately Cu and Zn ecotoxicity in soils amended with animal effluents? <i>E.P. Clement, M.N. Bravin, A. Avadi and E. Doelsch</i>	959
15:00	Challenges in establishing the mineral composition of feed materials <i>G. Tran and V. Heuzé</i>	959
15:15	Swiss feed database: mineral and trace element composition of feedstuffs <i>M. Lautrou, E. Manzocchi and P. Schlegel</i>	960
15:30	Overview of international aquaculture feed formulation database with reference to mineral nutrition <i>D.P. Bureau, L. Manomaitis and F.M. Damasceno</i>	960

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16:15	Mineral analysis: opportunities and limitations <i>invited P. Berzaghi, R. Fornaciari, M. Dorigo and G. Cozzi</i>	961
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17:00	A new phosphorus feeding system for the sustainability of swine and poultry production <i>M.P. Létourneau Montminy, M. Lautrou, M. Reis, C. Couture, N. Sakomura, B. Meda, C.R. Angel and A. Narcy</i>	962
17:15	Phosphorus digestibility of porcine processed animal proteins (PAPs) in broiler diets <i>J. Van Harn and P. Bikker</i>	962
17:30	Prediction of magnesium absorption in dairy cows: An update <i>R. Khiaosa-Ard and Q. Zebeli</i>	963
17:45	Se and Co balance in dairy cows: longitudinal study from late lactation to subsequent mid-lactation <i>J.B. Daniel and J. Martín-Tereso</i>	963

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88.16	Investigation on the variation in phosphorus of wheat bran: effect in diets of fattening pigs <i>R. Puntigam, P. Riesinger, A. Honig, M. Schaeffler, W. Windisch and H. Spiekers</i>	965
88.17	Swiss Feed Database: a closer look at minerals and trace elements in 10 years of roughage surveys <i>E. Manzocchi, M. Lautrou and P. Schlegel</i>	966
88.18	Mineral forage value in the INRAE feeding system for ruminants <i>A. Boudon and G. Maxin</i>	966
88.19	Minerals in cattle nutrition – meet the needs! <i>A.C. Honig, V. Inhuber, H. Spiekers, W. Windisch, K.-U. Götz, G. Strauß and T. Ettle</i>	967
88.20	Ruminant feed rations rich in clay minerals may induce Zn deficiency <i>M. Schlattl, M. Buffler and W. Windisch</i>	967
88.21	Zn, Cu, Mn and Fe balance in dairy calves fed milk replacer or whole milk at two feeding allowances <i>T. Chapelain, J.B. Daniel, J.N. Wilms, L.N. Leal and J. Martín-Tereso</i>	968

88.22	Impact of drinking water salinity on lactating cows <i>A. Iritz and Y. Ben Meir</i>	968
88.23	Seasonal variation of trace essential and toxic minerals in milk and blood of dairy ewes <i>A. Nudda, M.F. Guiso, G. Sanna, A. Cesarani, M. Deroma, G. Pulina and G. Battaccone</i>	969

Session 89. Explainable models and artificial intelligence supporting farming decisions

Room: Gratte Ciel 2

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Foy / Odintsov

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14:00	Measuring the behaviour of lambs in an isolated environment with artificial intelligence methods <i>B. Benet and R. Lardy</i>	969
14:15	Estimating sow posture from computer vision: influence of the sampling rate <i>M. Bonneau, J.A. Vayssade and L. Canario</i>	970
14:30	Estimating pig mass in a high-density pig group during transportation <i>V. Bloch, A. Valros, C. Munsterhjelm, M. Heinonen, M. Tuominen-Brinkas, H. Koskikallio and M. Pastell</i>	970
14:45	Assessment of piglet maturity at birth using computer vision <i>L. Maignel, R. Mailhot, A. Carrier and P. Gagnon</i>	971
15:00	Validation of new software (r-Algo) for predicting meat chemical composition from ultrasound images <i>B. Ahmadi, T. Schwarz and P.M. Bartlewski</i>	971
15:15	Coupling a sow herd model with a bioclimatic model of gestation rooms: development and evaluation <i>E. Dubois, F. Garcia-Launay, N. Quiniou, M. Marcon, J.Y. Dourmad, D. Renaudeau and L. Brossard</i>	972
15:30	Supervised machine learning as a tool to improve farrowing monitoring and stillborn rate in sows <i>C. Teixeira Costa, G. Boulbria, C. Dutertre, C. Chevance, T. Nicolazo, V. Normand, J. Jeusselin and A. Lebret</i>	972
15:45 Coffee break		
16:15	Use of accelerometers to predict the behaviour of growing rabbits <i>M. Piles, J.P. Sánchez, L. Riaboff, I. David and M. Mora</i>	973
16:30	Use of accelerometry data to detect kidding in goats <i>P. Gonçalves, M.R. Marques, A.T. Belo, A. Monteiro and F. Braz</i>	973
16:45	FTIR milk fatty acids quantification for non-invasive monitoring of rumen health in dairy cows <i>F. Huot, S. Claveau, A. Bunel, D. Warner, D.E. Santschi, R. Gervais and E.R. Paquet</i>	974
17:00	Optimizing breeding performance through algorithmic approaches to maximize meat quality in livestock <i>J. Albechaalany, M.P. Ellies-Oury, J.F. Hocquette, C. Berri and J. Saracco</i>	974
17:15	Detection of multiple feeding behaviours in calves using noseband and accelerometer sensors <i>S. Addo, K.A. Zipp, M. Safari, F. Freytag and U. Knierim</i>	975
17:30	Numerical detection of productive anomalies induced by heat stress in dairy cows <i>M. Bovo, M. Ceccarelli, C. Giannone, S. Benni, P. Tassinari and D. Torreggiani</i>	975
Poster Session 89		Book of Abstracts page
89.14	Using existing slaughterhouse data to assist detection of boar taint <i>B. Callens, M. Aluwé, R. Klont, M. Bouwknecht and J. Maselyne</i>	976

Session 90.

Genetics in horses

Room: Bellecour 3

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Stock / Cox

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14:00 Use of linear data for characterization and selection of sport horses with highest genetic potential <i>K.F. Stock, A. Hahn, I. Workel and W. Schulze-Schleppinghoff</i>	977
14:15 Effect of mitochondrial genetic variability on performance of endurance horses <i>A. Ricard, S. Dhorne-Pollet, C. Morgenthaler, J. Speke Katende, C. Robert and E. Barrey</i>	977
14:30 Early life jumping traits' potential as proxy for jumping performance in Belgian Warmblood horses <i>L. Chapard, R. Meyermans, W. Gorssen, N. Buys and S. Janssens</i>	978
14:45 Genetic covariance components of conformation, movement and athleticism traits in Irish Sport Horses <i>J.L. Doyle, S. Egan and A.G. Fahey</i>	978
15:00 Start status in Swedish Warmblood horses <i>Y. Blom, S. Eriksson and Å. Gelinder Viklund</i>	979
15:15 Genetic analysis of the precocity potential in trotting races of Spanish Trotter Horses <i>M. Ripollés-Lobo, D.I. Perdomo-González, M.D. Gómez, M. Ligeró and M. Valera</i>	979
15:30 Is the ability to race barefoot a heritable trait in Standardbred trotters? <i>P. Berglund, S. Andonov, A. Jansson, T. Lundqvist, C. Olsson, E. Strandberg and S. Eriksson</i>	980
15:45 Coffee break	
16:15 Searching for genomic regions associated with conformation traits in the Pura Raza Español horse <i>N. Laseca, C. Ziadi, D.I. Perdomo-González, M. Valera, P. Azor, S. Demyda-Peyrás and A. Molina</i>	980
16:30 Successful genotype imputation from medium to high density in Belgian Warmblood horses <i>L. Chapard, R. Meyermans, W. Gorssen, B. Van Mol, F. Pille, N. Buys and S. Janssens</i>	981
16:45 Inbreeding in the Belgian equine warmblood population: current degree and evolution <i>B. Van Mol, H. Hubrechts, R. Meyermans, L. Chapard, W. Gorssens, M. Oosterlinck, N. Buys, F. Pille and S. Janssens</i>	981
17:00 Population structure assessment using genome wide molecular information in Martina Franca donkey <i>V. Landi, E. Ciani and P. De Palo</i>	982
17:15 Unravelling genomic regions with transmission ratio distortion in horse <i>N. Laseca, A. Cánovas, M. Valera, S. Id-Lahoucine, D.I. Perdomo-González, P.A.S. Fonseca, S. Demyda-Peyrás and A. Molina</i>	982
17:30 Microsatellite-based detection of transmission ratio distortion in the Pura Raza Española horse <i>D.I. Perdomo-González, S. Id-Lahoucine, A. Molina, A. Cánovas, N. Laseca, P.J. Azor and M. Valera</i>	983
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90.14 Estimation of the genetic parameters for temperament in Haflinger horses <i>T.H. Zanon, B. Fürst Waltl, S. Gruber and M. Gauly</i>	983
90.15 Estimation of the genetic propensity to suffer hock osteochondrosis in Pura Raza Española horses <i>M. Ripollés, A. Molina, M. Novales, C. Ziadi, E. Hernández and M. Valera</i>	984

- 90.16 Genetic characterization of white facial marking in Pura Raza Español horses depending on coat colour 984
A.E. Martínez, M.J. Sánchez Guerrero, A. López, M. Ligeró and M. Valera Córdoba
- 90.17 Climate effects on foaling event: genotype-by-environment interactions in horse fertility 985
C. Sartori, E. Mancin, G. Gomez-Proto, B. Tuliozi and R. Mantovani

Session 91. Nitrogen excretion and ammonia emission in pig and poultry production

Room: Gratte Ciel 1

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Millet / Brodziak

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14:00	Impact of raw and digested pig manure on ammonia volatilization after land application <i>F.M.W. Hickmann, R. Rajagopal, N. Bertrand, I. Andretta, M.-P. Létourneau-Montminy and D. Pelster</i>	985
14:15	Influence of housing manure management on ammonia emissions from broiler and laying hen productions <i>E. Caron, P. Le Bras and M. Hassouna</i>	986
14:30	NH ₃ , N ₂ O and CH ₄ emission from piggeries: comparison of several manure management techniques <i>N. Guingand and P. Le Bras</i>	986
14:45	Feeding pigs with low-protein diets: impact of pig manure nitrogen content on biogas production <i>F.M.W. Hickmann, I. Andretta, L. Cappelaere, B. Goyette, M.-P. Létourneau-Montminy and R. Rajagopal</i>	987
15:00	A tool to reduce worker exposure from ammonia and particles in swine and poultry housing <i>N. Guingand, S. Lagadec, K. Amin, D. Bellanger, A.L. Boulestreau-Boulay, C. Delaqueze, C. Depoudent, L. Gabriel, E. Koulete, V. Le Gall, P. Lecorguille, L. Leroux, G. Manac'h, S. Roffi and M. Ruch</i>	987
15:15	Methodological redesign of the poultry mass-balance excretion and variability of nitrogen excretion <i>V. Blazy, E. Caron, D.D. Djenontin-Agossou and Y. Guyot</i>	988
15:30	Access to bedding and an outdoor run for growing-finishing pigs and their impact on the environment <i>A.K. Ruckli, S. Hörtenhuber, S. Dippel, P. Ferrari, M. Gebeska, J. Guy, M. Heinonen, J. Helmerichs, C. Hubbard, H. Spooler, A. Valros, C. Winckler and C. Leeb</i>	988
15:45 Coffee break		
16:15	Reduction of protein and potassium to improve welfare and environmental footprint in broilers <i>T. De Rauglaudre, B. Méda, W. Lambert, S. Fournel and M.P. Létourneau-Montminy</i>	989
16:30	Effects of reducing protein content in broiler diets on environmental impacts <i>J. Gickel, V. Wilke, C. Ullrich and C. Visscher</i>	989
16:45	Effect of reduced-crude protein diets on performance, meat yield, and nitrogen production in broiler <i>C. Gayraud, T. Wise, J.D. Davis, J.C. De Paula Dorigam, V.D. Naranjo and W.A. Dozier, III</i>	990
17:00	Effect of reducing dietary protein content on performance and environmental impact of pig production <i>E. Gonzalo, A. Simongiovanni, C. De Cuyper, B. Ampe, M. Aluwe, W. Lambert and S. Millet</i>	990
17:15	Impact of genotype×feed-interactions in nitrogen- and phosphorus-reduced ration on of fattening pigs <i>C. Große-Brinkhaus, B. Bonhoff, I. Brinke, E. Jonas, S. Kehraus, K.H. Südekum and E. Tholen</i>	991
17:30	Pig performance, carcass composition and meat quality can be maintained with high CP reduction <i>L. Cappelaere, F. Garcia-Launay, W. Lambert, A. Simongiovanni and M.-P. Létourneau-Montminy</i>	991
Poster Session 91		Book of Abstracts page
91.14	Alpha mannan polysaccharide supplement increase growth performance and reduce gas emission in pig <i>J.H. Song, C.B. Lim, M.D.M. Hossain, S. Biswas, J.S. Yoo, I.H. Kim and Q.Q. Zhang</i>	992

91.15	Characteristic of odour substances from broiler farms <i>S.Y. Seo, J.S. Park, S.Y. Park and M.W. Jung</i>	992
91.16	Environmental assessment of layer-type male chicks breeding <i>E. Dubois and M. Quentin</i>	993

Session 92. Inflammation and energy metabolism in young and adult livestock

Room: Tête D'or 2

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Sauerwein

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14:00	Milk metabolites differ with feed efficiency during early lactation but not during feed restriction <i>J. Pires, T. Larsen, S. Bes, I. Constant, D. Roux, M. Tourret, A. De La Torre, I. Ortigues-Marty, F. Blanc and I. Cassar-Malek</i>	993
14:30	Dairy cow inflammatory status is modulated by physiological stage and feed restriction <i>C. Delavaud, A. De La Torre, D. Durand, S. Bes, D. Roux, A. Thomas, M. Tourret, I. Ortigues-Marty, I. Cassar-Malek, M. Bonnet and J. Pires</i>	994
14:45	Energy balance clusters in relation to metabolic and inflammatory status and disease in dairy cows <i>J. Ma, A. Kok, R. Bruckmaier, E. Burgers, R. Goselink, J. Gross, T. Lam, A. Minuti, E. Saccenti, E. Trevisi and A. Van Knegsel</i>	994
15:00	Effects of parity on metabolism, redox status and cytokines in early lactating dairy cows <i>A. Corset, A. Boudon, A. Remot, S. Philau, P. Poton, O. Dhumez, B. Graulet, P. Germon and M. Boutinaud</i>	995
15:15	Tissue distribution and pharmacological characterization of bovine free fatty acids-sensing GPCRs <i>T.C. Michelotti, M. Bonnet, V. Lamothe, S. Bes and G. Durand</i>	995
15:30	Maternal nutrition carry-over effects on beef cow colostrum but not on milk fatty acid composition <i>N. Escalera-Moreno, B. Serrano-Pérez, E. Molina, L. López De Armentia, A. Sanz and J. Álvarez-Rodríguez</i>	996
15:45 Coffee break		
16:15	Different types and doses of colostrum to optimize the passive immune transfer and health in lambs <i>A. Belanche, F. Canto and O. Calisici</i>	996
16:30	Oxidative status in female Holstein calves fed with or without transition milk <i>C.S. Ostendorf, M. Hosseini Ghaffari, B. Heitkönig, C. Koch and H. Sauerwein</i>	997
16:45	Effects of concentrate feeding and hay quality on adipogenesis and inflammation in dairy calves <i>R. Khiaosa-Ard, A. Sener-Aydemir, S. Kreuzer-Redmer and Q. Zebeli</i>	997
17:00	Synergistic benefits of marine derived bioactives to maintain the gut barrier in an <i>ex vivo</i> model <i>M.A. Bouwhuis, I. Nooijen, E. Van Der Steeg and S. O'Connell</i>	998
17:30	Effects of milk replacer diets on the intestinal development of suckled piglets <i>G.Y. Duan, C.B. Zheng, J. Zheng, P.W. Zhang, M.L. Wang, J.Y. Yu, B. Cao, M.M. Li, F. Cong, Y.L. Yin and Y.H. Duan</i>	998
17:45	The impact of early thermal manipulation on the hepatic energy metabolism of mule duck <i>C. Andrieux, M. Morisson, V. Coustham, S. Panserat and M. Houssier</i>	999
Poster Session 92		Book of Abstracts page
92.13	Feed efficiency and responses of plasma and milk isotopic signatures in Charolais beef cows <i>A. De La Torre, J. Pires, I. Cassar-Malek, I. Ortigues-Marty, F. Blanc, L. Barreto-Mendes, G. Cantalapiedra-Hijar and C. Loncke</i>	999

92.14	How the composition of Holstein cow colostrum differs according to the immunoglobulins G level <i>A. Goi, A. Costa and M. De Marchi</i>	1000
92.15	An educational kit for effective prevention and management of energy deficit in dairy cows <i>M. Gelé, M. Boutinaud, A. Bouqueau, M. Marguerit, J. Jurquet, Y. Le Cozler and J. Guinard-Flament</i>	1000
92.16	Inflammation status weakly modulated by short-term feed restriction in lactating beef cows <i>C. Delavaud, J. Pires, M. Barbet, I. Ortigues-Marty, I. Cassar-Malek, M. Bonnet and A. De La Torre</i>	1001
92.17	Metabolic profiles of grazing dairy cows with or without feed restriction during early lactation <i>A.L. Astessiano, M. Garcia-Roche, D. Custodio, G. Ortega, P. Chilibroste and M. Carriquiry</i>	1001
92.18	Hepatic mitochondrial function in grazing dairy cows with or without feed restriction <i>M. García-Roche, D. Custodio, A. Astessiano, G. Ortega, P. Chilibroste and M. Carriquiry</i>	1002
92.19	On-farm emergency slaughtered dairy cows: causes and haematological biomarkers <i>F. Fusi, I.L. Archetti, S.M. Chisari, V. Lorenzi, C. Montagnin, R. Salonia, L. Bertocchi and G. Cascone</i>	1002
92.20	The effect of early feed restriction of ewe lambs on milk miRNAome of the filial generation <i>A. Martín, F. Cecilian, F.J. Giráldez, R. Calogero, C. Lecchi and S. Andrés</i>	1003
92.21	Quercetin supplementation in perinatal sows diet influencing suckling piglets and its mechanism <i>Y. Li, Q.L. Yang, Y.X. Fu, S.S. Zhou, J.Y. Liu and J.H. Liu</i>	1003
92.22	Development of muscle injury in weanling piglets under chronic immune stress <i>Y. Duan</i>	1004

Session 93. Recent advances on *in vitro* systems (from cell culture to *in vitro* digestion methods): relevance as alternatives to animal experimentation for livestock research

Room: Tête D'or 1

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Louveau

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14:00 invited The great power of being tiny: <i>in vitro</i> gut systems in livestock research <i>S.K. Kar</i>	1004
14:30 Comparison of adult intestinal stem cell derived organoids between different ages and sex in pigs <i>R.S.C. Rikkers, O. Madsen, S.K. Kar, L. Kruijt, A.A.C. De Wit, E. Van Der Valk, L.M.G. Verschuren, S. Verstringe and E.D. Ellen</i>	1005
14:45 Butyric glycerides directly and indirectly enhance chicken enterocyte resistance to pathogens <i>A. Mellouk, N. Vieco-Saiz, V. Michel, O. Lemâle, T. Goossens and J. Consuegra</i>	1005
15:00 invited Spheroid and organoid models to study animal reproduction <i>K. Reynaud, M. Ta, C. Pucéat, M. Billet, C. Mahé, L. Schmaltz, L. Laffont, P. Mermillod and M. Saint-Dizier</i>	1006
15:30 3D-cell culture systems; a breakthrough to improve the human and animal disease research <i>E.S. Smirnova, K.A. Adhimalam and T.M. Min</i>	1006
15:45 Coffee break	
16:15 Slurry chemical characteristics and ammonia emissions assessed by different methods <i>L. Sarri, E. Fuertes, E. Pérez-Calvo, A.R. Seradj, R. Carnicero, J. Balcells and G. De La Fuente</i>	1007

16:30	<i>In vitro</i> protein fractionation methods for ruminant feeds B.Z. Tunkala, K. Digiaco, P.S. Alvarez Hess, F.R. Dunshea and B.J. Leury	1007
16:45	Storage conditions of rumen inoculum: impact on gas productions in mini dual flow fermenters V. Berthelot, M. Charef-Mansouri, A.-M. Davila and L.P. Broudiscou	1008
17:00	Dynamics of rumen microbiome and methane emission during <i>in vitro</i> rumen fermentation R. Dhakal, R. Sapkota, P. Khanal, A. Winding and H.H. Hansen	1008
17:15	Effects of <i>Asparagopsis armata</i> inclusion on methane production in semi-continuous fermenters P. Romero, S.M. Waters, D.R. Yañez-Ruiz, A. Belanche and S.F. Kirwan	1009
17:30	Calcium propionate mitigated adverse effects of incubation temperature shift on <i>in vitro</i> fermentation T. He, S. Long and Z. Chen	1009

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93.12	<i>In vitro</i> generation of ovine monocyte-derived macrophages for SRLV infection studies E. Grochowska, M. Ibrahim, M. Wu and K. Stadnicka	1010
93.13	Resistance of probiotics to antibiotics and antagonism to poultry pathogens N. Akhavan, K. Stadnicka, D. Thiem and K. Hryniewicz	1010
93.14	Metabolic footprint of prebiotics and probiotics in Chick8E11 and Caco-2 intestinal cell lines S. Zuo, W. Studziński, K. Stadnicka and P. Kosobucki	1011
93.15	Cellular imagery evaluation of butyric acid biological activities in Caco-2 cell line D. Gardan-Salmon, B. Saldaña, J.I. Ferrero and M. Arturo-Schaan	1011
93.16	Effect of silage sample preparation on rumen fermentation (<i>in vitro</i>) J.A. Huntington, T. Snelling, L.A. Sinclair, H. Warren, D.A. Galway and D.R. Davies	1012
93.17	Repeatability of fermentation kinetics using <i>in vitro</i> gas fermentation B. Jantzen and H.H. Hansen	1012
93.18	Evaluation of rumen bypass protein in processed soybean meal products A. Chariopolitou, A. Plomaritou, A. Tzamourani, K. Droumtsekas and A. Foskolos	1013
93.19	Effect of rumen inoculum on predicted <i>in vivo</i> methane production from barley and oats P. Fant, M. Ramin and P. Huhtanen	1013
93.20	Comparison of <i>in vitro</i> and <i>in vivo</i> methane production in dairy cows D.W. Olijhoek, É. Chassé, M. Battelli, M.V. Curtasu, M. Thorsteinsson, M.H. Kjeldsen, W.J. Wang, G. Giagnoni, M. Maigaard, C.F. Børsting, M.R. Weisbjerg, P. Lund and M.O. Nielsen	1014

Session 94.

Free communications in animal health and welfare

Room: Gratte Ciel 3

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Boyle / Calderon Diaz

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14:00	What impairs laying hens' foot health? A retrospective German study N. Volkmann, A. Riedel, N. Kemper and B. Spindler	1014
14:15	Pododermatitis in broilers: prevalence and risk factors present in reused beddings J. Montalvo, M. Cevallos and M. Cisneros	1015

14:30	Digital dermatitis in French young bulls fattening farms <i>A. Waché, M. Petitprez, E. Dod Ioan, M. Delacroix and C. Guibier</i>	1015
14:45	Prevalence and factors associated with teat-end hyperkeratosis in dairy cows <i>F.G. Silva, C. Antas, A.M.F. Pereira and C. Conceição</i>	1016
15:00	Milk calcium content to detect hypocalcaemia in dairy cows at the onset of lactation <i>T. Aubineau, R. Guatteo and A. Boudon</i>	1016
15:15	PRRSV stabilisation programs in French farrow-to-finish farms: a way to reduce antibiotic use <i>C. Teixeira Costa, G. Boulbria, V. Normand, C. Chevance, J. Jeusselin, T. Nicolazo and A. Lebret</i>	1017
15:30	Monitoring of antimicrobial use on French pig farms from 2010 to 2019 using INAPORC panels <i>A. Poissonnet, I. Corregge, C. Chauvin and A. Hemonc</i>	1017

15:45 Coffee break

16:15	Digital drug registration and its relation to veterinary slaughter findings <i>H. Görge, I. Dittrich, N. Kemper and J. Krieter</i>	1018
16:30	A critical lens to regulations around veterinary antimicrobial use across countries and species <i>G. Olmos Antillón and I. Blanco-Penedo</i>	1018
16:45	An approach of the place of animal health and role of veterinarian in sustainable farming systems <i>A. Scholly-Schoeller and G. Brunschwig</i>	1019
17:00	Developing an animal welfare benchmarking framework for Australian lot-fed cattle <i>T. Collins, E. Taylor, A. Barnes, E. Dunston-Clarke, D. Miller, D. Brookes, E. Jongman and A. Fisher</i>	1019
17:15	H2020 mEATquality: on-farm animal welfare assessment in slaughter pigs <i>T. Rousing, L.D. Jensen, M.L.V. Larsen and L.J. Pedersen</i>	1020
17:30	Variability in pig hair cortisol concentrations at the end of the fattening period <i>P. Levallois, M. Leblanc-Maridor, S. Gavaud, B. Lieubeau, G. Morgant, C. Fourichon, J. Hervé and C. Belloc</i>	1020
17:45	Identification and characterization of IUGR piglets <i>C. Ollagnier, R. Ruggeri, J. Bellon and G. Bee</i>	1021

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94.15	Investigating the association between sole ulcers and sole temperature in dairy cattle using IRT <i>A. Russon, A. Anagnostopoulos, M. Barden, B. Griffiths, C. Bedford and G. Oikonomou</i>	1021
94.16	Osteopathic manipulative treatment: a complementary approach to promote milk production in cows <i>C. Omphalius, A. Hardouin, M. Launay Ventelon and S. Julliard</i>	1022
94.17	The relationship between stress levels and skin allergy or atopy problem by analysing hair cortisol <i>G.W. Park, M. Ataallah and K.H. Park</i>	1022
94.18	SECURIVO: self-assessment tools for biosecurity in veal calves' farms <i>M. Chanteperdrix, M. Drouet, M. Mounaix, M. Tourtier, D. Le Goic, C. Jaureguy, P. Briand, M. Coupin, A. Hemonc and N. Rousset</i>	1023
94.19	Temporally synchronized ruminal vs reticular fluid pH and short chain fatty acids in dairy cows <i>A. Kidane, K.S. Eikanger and M. Eknæs</i>	1023
94.20	Antimicrobial use and main causes of treatment in Italian buffalo farms <i>G. Di Vuolo, F. Scali, C. Romeo, V. Lorenzi, C.D. Ambra, M. Serrapica, G. Cappelli, F. Fusi, E. De Carlo, G.L. Alborali, L. Bertocchi and D. Vecchio</i>	1024
94.21	Herd factors associated with levels of parasitism in alternative pig farms <i>M. Delsart, N. Rose, B. Dufour, J.M. Répérant, R. Blaga, F. Pol and C. Fablet</i>	1024

94.22	Biosecurity and Animal Welfare relationship on buffalo farms through ClassyFarm assessments <i>D. Vecchio, G. Santucci, V. Lorenzi, C. Caruso, C.D. Ambra, M. Serrapica, G. Di Vuolo, G. Cappelli, F. Fusi, E. De Carlo, C. Romeo, F. Scali, G.L. Alborali, A.M. Maisano and L. Bertocchi</i>	1025
94.23	Immune function of pre-weaned calves fed a fortified milk replacer under heat stress conditions <i>A.A.K. Salama, S. Serhan, L. Ducrocq, M. Biesse, A. Joubert and G. Caja</i>	1025
94.24	The effect of udder health on milk composition <i>Z. Nogalski and M. Sobczuk-Szul</i>	1026

Session 95. Happy Delivering innovative and holistic milk based monitoring and decision-making PLF tools – collaboration with HappyMoo

Room: Roseraie 3

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Gengler / Knijn

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14:00	An attempt to predict dairy cows chronic stress biomarkers using milk MIR spectra <i>C. Grelet, H. Simon, J. Leblois, M. Jattiot, C. Lecomte, R. Reding, J. Wavreille, E.J.P. Strang, F.J. Auer, Happymoo Consortium and F. Dehareng</i>	1026
14:15	Prediction of body condition score for the entire lactation in Walloon Holstein cows <i>H. Atashi, J. Chelotti and N. Gengler</i>	1027
14:30	Conditions to develop successful mid-infrared (MIR) based BCS and BCS change predictions <i>J. Chelotti, H. Atashi, C. Grelet, M. Calmels, J. Leblois and N. Gengler</i>	1027
14:45	Large-scale analysis of chronic stress in dairy cows using hair cortisol and blood fructosamine <i>H. Simon, C. Grelet, S. Franceschini, H. Soyeurt, J. Leblois, M. Jattiot, C. Lecomte, R. Reding, J. Wavreille, E.J.P. Strang, F.J. Auer and F. Dehareng</i>	1028
15:00	Calculation of dry matter intake and energy balance based on MIR spectral data at European level <i>V. Wolf, L. Dale, M. Gelé, U. Schuler, U. Müller, N. Gengler, J. Leblois and M. Calmels</i>	1028
15:15	Validation of HappyMoo MIR energy balance models on external datasets with feeding restriction <i>M. Calmels, J. Pires, M. Boutinaud, A. Leduc, C. Leroux, J. Chelotti, L. Dale, C. Grelet, A. Tedde, J. Leblois and M. Gelé</i>	1029
15:30	Genetic analyses of principal components of milk mid-infrared spectra from Holstein cows <i>Y. Chen, P. Delhez, H. Atashi, H. Soyeurt and N. Gengler</i>	1029
15:45	Coffee break	
16:15	MastiMIR – MIR prediction for udder health <i>L.M. Dale, A. Werner, E.P.J. Strang, Happymoo Consortium and J. Bieger</i>	1030
16:30	Prediction of lameness and hoof lesions using MIR spectral data <i>M. Jattiot, L.M. Dale, M. El Jabri, J. Leblois, M.-N. Tran and HappyMoo Consortium</i>	1030
16:45	MIR spectral prediction based on heat stress in dairy cattle <i>L.M. Dale, M. Jattiot, A. Werner, E.J.P. Strang, P. Lemal, Happymoo Consortium, Klimaco Consortium and N. Gengler</i>	1031
17:00	Use of MIR spectra-based indicator for genetic evaluation of heat stress in dairy cattle <i>P. Lemal, L.M. Dale, M. Jattiot, J. Leblois, M. Schroyen and N. Gengler</i>	1031
17:15	A unique overview of enteric methane emissions by dairy cows in Bretagne, France <i>S. Mendowski, O. Garcia, C. Bruand, M. Tournat, T. Viot and L. Meriaux</i>	1032

17:30 Genetic parameters analysis of milk citrate for Holstein cows in early lactation 1032
H. Hu, Y. Chen, C. Grelet and N. Gengler

Poster Session 95

Book of Abstracts page

95.14 Milk fluctuations in daily milk yield associated with diseases in Chinese Holstein cattle 1033
A. Wang, D.K. Liu, C. Mei and Y.C. Wang

Session 96. ERANET-funded ‘Grass To Gas’ and EU-funded ‘SMARTER’ projects

Room: Roseraie 2

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Conington / Vouraki

Theatre Session 96

Book of Abstracts page

14:00 Impact of genomic selection for methane emissions in a high performance sheep flock 1033
S.J. Rowe, T. Bilton, P. Johnson, S. Hickey, A. Jonker, N. Amyes, K. McRae, S. Clarke and J. McEwan

14:30 Improving feed efficiency in meat sheep increases CH₄ emissions measured indoor or on pasture 1034
F. Tortereau, J.-L. Weisbecker, C. Coffre-Thomain, Y. Legoff, D. François, Q. Le Graverand and C. Marie-Etancelin

14:45 Effects of sire and diet on rumen volume and relationships with feed efficiency 1034
N.R. Lambe, A. McLaren, K.A. McLean, J. Gordon and J. Conington

15:00 Evaluating the effect of herbage composition on methane output in sheep 1035
F.M. McGovern, P. Creighton, E. Dunne and S. Woodmartin

15:15 Dry matter intake across life stages in sheep 1035
E. O’Connor, N. McHugh, E. Dunne, T.M. Boland and F.M. McGovern

15:30 Selecting feed-efficient sheep with concentrates alters their efficiency with forages and behaviour 1036
C. Marie-Etancelin, J.L. Weisbecker, D. Marcon, L. Estivalet, Q. Le Graverand and F. Tortereau

15:45 Coffee break

16:15 Genome-wise association study of footrot and mastitis in UK Texel sheep 1036
K. Kaseja, S. Mucha, J. Yates, E. Smith, G. Banos and J. Conington

16:30 Genetic parameters of nematode resistance in dairy sheep 1037
B. Bapst, K. Schwarz, S. Thüer and S. Werne

16:45 Contrasting genetic resistance to GIN on growth performance and feed efficiency of Corriedale lambs 1037
E.A. Navajas, G. Ciappesoni and I. De Barbieri

Poster Session 96

Book of Abstracts page

96.10 Australian Merino: animal welfare and resilience in extensive systems 1038
M. Del Campo, J.L. De Araújo Pimenta, I. De Barbieri, P. Lorenze, F. Rovira and J.M. Soares De Lima

96.11 Prediction of feed efficiency related traits from plasma NMR spectra 1038
A. Marquisseau, F. Tortereau, N. Marty-Gasset, C. Marie-Etancelin and Q. Le Graverand

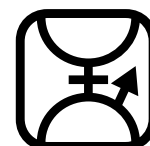
96.12 Metabolism in lambs from two feed-efficiency genetic lines subjected to different early rearing practices 1039
G. Cantalapiedra-Hijar, M.M. Milaon, S. Parisot, C. Durand, M. Vauris, F. Tortereau and C. Ginane

96.13 Genetic link between fertility and resilience in sheep and goat divergent selection experiments 1039
R. Rupp, C. Oget-Ebrad, S. Parisot, T. Fassier, G. Tosser Klopp and S. Freret

96.14	Phenotypic and genetic variability of health and welfare traits in French dairy goats <i>I. Palhiere, A. Bailly-Salins, A. Gourdon, M. Chassier, R. De Cremoux, M. Berthelot and R. Rupp</i>	1040
96.15	Assessment of phenotypic and genetic variability of rumen temperatures in goats <i>I. Palhiere, C. Huau, T. Fossier, R. Rupp and L. Bodin</i>	1040
96.16	Heritability of novel metabolite-based resilience biomarkers in dairy goat <i>M. Ithurbide, T. Fossier, M. Tourret, J. Pires, T. Larsen, N.C. Friggens and R. Rupp</i>	1041
96.17	Rumen size of sheep: difference between a modern and a native Norwegian sheep breed <i>B.A. Åby, M.A. Bhatti and G. Steinheim</i>	1041
96.18	Diurnal feed intake pattern of two sheep breeds fed different silage qualities <i>I. Dønnem, B.A. Åby and G. Steinheim</i>	1042

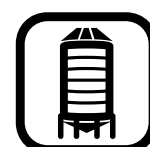
Study commissions

Commission on Animal Genetics



Filippo Miglior	President	Guelph University	Canada	fmiglior@uoguelph.ca
Marcin Pszczola	Vice-President	Poznan University of Life Sciences	Poland	marcin.pszczola@gmail.com
Morten Kargo	Vice-President	Aarhus University	Denmark	morten.kargo@qgg.au.dk
Ewa Sell-Kubiak	Vice-President	Poznan University of Life Sciences	Poland	ewa.sell-kubiak@puls.edu.pl
Francesco Tiezzi	Secretary	University of Florence	Italy	francesco.tiezzi2@unifi.it
Christa Egger-Danner	Industry rep.	Zuchtdata	Austria	egger-danner@zuchtdata.at
Guilherme Neumann	Young Club	Humboldt University	Germany	guilherme.neumann@hu-berlin.de
Ivan Pocnic	Young Club	Roslin Institute	UK	ivan.pocnic@roslin.ed.ac.uk

Commission on Animal Nutrition



Luciano Pinotti	President	University of Milan	Italy	luciano.pinotti@unimi.it
Sam De Campeneere	Vice-President	ILVO	Belgium	sam.decampeneere@ilvo.vlaanderen.be
Latifa Abdenneby-Najar	Vice-President	IDELE	France	latifa.najar@idele.fr
Maria José Ranilla García	Secretary	Universidad de León	Spain	mjrang@unileon.es
Sokratis Stergiadis	Secretary	University of Reading	UK	s.stergiadis@reading.ac.uk
Susanne Kreuzer-Redmer	Secretary	Vetmed Vienna	Austria	susanne.kreuzer-redmer@vetmeduni.ac.at
Javier Alvarez Rodriguez	Secretary	University of Lleida	Spain	javier.alvarez@udl.cat
Daniele Bonvicini	Industry Rep	Prosol S.p.a	Italy	d.bonvicini@prosol-spa.it
Geert Bruggeman	Industry Rep	Nusciencegroup	Belgium	geert.bruggeman@nusciencegroup.com
Eric Newton	Young Club	University of Reading	UK	Newtoeri000@gmail.com

Commission on Health and Welfare



Laura Boyle	President	Teagasc	Ireland	laura.boyle@teagasc.ie
Flaviana Gottardo	Vice-President	University of Padova	Italy	flaviana.gottardo@unipd.it
Giulietta Minozzi	Vice-President	University of Milan	Italy	giulietta.minozzi@unimi.it
Isabel Blanco Penedo	Secretary	University of Lleida	Spain	isabel.blancopenedo@udl.cat
Holinger Mirjam	Secretary	Research Institute of Organic Agriculture FiBL	Switzerland	mirjam.holinger@fibl.org
Angela Trocino	Secretary	University of Padova	Italy	angela.trocino@unipd.it
Julia Adriana Calderon Diaz	Industry Rep	Genusplc	Spain	juliaadriana.calderondiaz@genusplc.com
Mariana Dantas de Brito Almeida	Young Club	University of Tras-os-Montes and Alto Douro	Portugal	mdantas@utad.pt

Commission on Animal Physiology



David Kenny	President	Teagasc	Ireland	David.Kenny@teagasc.ie
Kate Keogh	Vice-President	Teagasc	Ireland	kate.keogh@teagasc.ie
Alan Kelly	Secretary	University College Dublin	Ireland	alan.kelly@ucd.ie
Yuri Montanholi	Secretary	North Dakota State University	USA	yuri.montanholi@ndsu.edu
Maya Zachut	Secretary	Volcani Institute	Israel	mayak@volcani.agri.gov.il
Federico Randi	Industry rep.	Ceva Sante Animale	France	federico.randi@ceva.com
Olaia Urrutia	Young Club	Public University of Navarre	Spain	olaia.urrutia@unavarra.es



Commission on Livestock Farming Systems

Michael Lee	President	Harper Adams University	United Kingdom	MRFLee@harper-adams.ac.uk
Enrico Sturaro	Vice President	University of Padova	Italy	enrico.sturaro@unipd.it
Tommy Boland	Secretary	University College Dublin	Ireland	tommy.boland@ucd.ie
Ioanna Poulopoulou	Secretary	Free University of Bozen	Italy	Ioanna.Poulopoulou@unibz.it
Vincent Thenard	Secretary	INRAE	France	vincent.thenard@inrae.fr
Saheed Salami	Industry rep.	Alltech	UK	saheed.salami@alltech.com
Tiago T. da Silva Siqueira	Young Club	INRA	France	tiago.teixeira.dasilva.siqueira@gmail.com



Commission on Cattle Production

Massimo De Marchi	President	Padova University	Italy	massimo.demarchi@unipd.it
Paul Galama	Vice-President	Wageningen Livestock Research	Netherlands	paul.galama@wur.nl
Joel Berard	Vice-President	Agroscope	Switzerland	joel.berard@agroscope.admin.ch
Jean François Hocquette	Secretary	INRAE	France	jean-francois.hocquette@inrae.fr
Poulad Pourazad	Industry rep	Delacon Biotechnik GmbH	Austria	poulad.pourazad@delacon.com
Angela Costa	Young Club	University of Bologna	Italy	angela.costa2@unibo.it



Commission on Sheep and Goat Production

Vasco Augusto Pilão Cadavez	President	CIMO - Mountain Research Centre	Portugal	vcadavez@ipb.pt
Lorenzo E. Hernandez Castellano	Vice-President	Universidad de Las Palmas de Gran Canaria	Spain	lorenzo.hernandez@ulpgc.es
Antonello Cannas	Secretary	University of Sassari	Italy	cannas@uniss.it
Georgia Hadjipavlou	Secretary	Agricultural Research Institute	Cyprus	georgiah@ari.gov.cy
Neil Keane	Industry rep.	Alltech	Ireland	nkeane@alltech.com
Christos Dadousis	Young Club	University of Parma	Italy	christos.dadousis@unipr.it



Commission on Pig Production

Sam Millet	President	ILVO	Belgium	sam.millet@ilvo.vlaanderen.be
Paolo Trevisi	Vice president	Bologna University	Italy	paolo.trevisi@unibo.it
Giuseppe Bee	Vice president	Agroscope Liebefeld-Posieux ALP	Switzerland	giuseppe.bee@agroscope.admin.ch
Katja Nilsson	Secretary	Swedish University of Agricultural Science	Sweden	katja.nilsson@slu.se
Katarzyna Stadnicka	Secretary	Collegium Medicum Nicolaus Copernicus University	Poland	katarzyna.stadnicka@cm.umk.pl
Grzegorz Brodziak	Industry rep.	Goodvalley Agro S.A.	Poland	grzegorz.brodziak@goodvalley.com
Tristan Chalvon-demersay	Industry rep.	Metex-noovistago	France	tristan.chalvon-demersay@metex-noovistago.com
Stafford Vigors	Young Club	University College Dublin	Ireland	staffordvigors1@ucd.ie

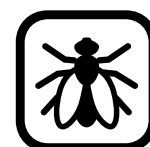
Commission on Horse Production

Rhys Evans	President	Norwegian University College of Green Development	Norway	rhys@hgut.no
Klemen Potočnik	Vice president	University of Ljubljana	Slovenija	klemen.potocnik@bf.uni-lj.si
Roberto Mantovani	Vice president	University of Padua - DAFNAE	Italy	roberto.mantovani@unipd.it
Isabel Cervantes Navarro	Vice president	Complutense University of Madrid	Spain	icervantes@vet.ucm.es
Pasquale De Palo	Secretary	University of Bari	Italy	pasquale.depalo@uniba.it
Jackie Tapprest	Secretary	Animal health laboratory (ANSES)	France	jackie.tapprest@anses.fr
Melissa Cox	Industry rep.	Generatio GmbH – Center for Animal Genetics	Germany	melissa.cox@centerforanimalgenetics.de
Juliette Auclair-Ranzaud	Young Club	Institut français du cheval et de l'équitation	France	juliette.auclair-ronzaud@ifce.fr
Kirsty Tan	Young Club	Christian-Albrechts-Universität zu Kiel	Germany	kirsty.tan89@gmail.com



Commission on Insects

Laura Gasco	President	University of Turin	Italy	laura.gasco@unito.it
Anton Gligorescu	Vice president	Aarhus University	Denmark	angl@bio.au.dk
Christoph Sandrock	Secretary	Research Institute of Organic Agriculture FiBL	Switzerland	christoph.sandrock@fibl.org
David Deruytter	Secretary	INAGRO	Belgium	david.deruytter@inagro.be
Maria Martinez Castillero	Industry rep.	Betabugs	UK	maria@betabugs.uk
Daniel Murta	Industry rep.	Ingredient Odyssey – EntoGreen	Portugal	daniel.murta@entogreen.com
Thomas Lefebvre	Industry rep.	Ynsect	France	thomas.lefebvre@ynsect.com
Matteo Ottoboni	Young Club	Univerity of Milan	Italy	matteo.ottoboni@unimi.it
Cassandra Maya	Young Club	Copenhagen University	Denmark	casma@nexs.ku.dk
Ilaria Biasato	Young Club	University of Turin	Italy	ilaria.biasato@unito.it



Commission on Precision Livestock Farming

Matti Pastell	President	Natural Resources Institute Finland (Luke)	Finland	matti.pastell@luke.fi
Jarissa Maselyne	Vice president	ILVO	Belgium	jarissa.maselyne@ilvo.vlaanderen.be
Francisco Maroto Molina	Vice president	University of Cordoba	Spain	g02mamof@uco.es
Claire Morgan-Davies	Vice president	Scotland's Rural College (SRUC)	United Kingdom	claire.morgan-davies@sruc.ac.uk
Ines Adriaens	Vice president	KU Leuven	Belgium	ines.adriaens@kuleuven.be
Jean-Marc Gautier	Vice president	IDELE	France	jean-marc.gautier@idele.fr
Shelly Druyan	Secretary	ARO, The Volcani Center	Israel	shelly.druyan@mail.huji.ac.il
Radovan Kasarda	Secretary	Slovak University of Agriculture in Nitra	Slovakia	radovan.kasarda@uniag.sk
Michael Odintsov	Secretary	Regrowth s.r.l.s	Italy	m.odintsov.vaintrub@gmail.com
Hiemke Knijn	Industry rep.	CRV	The Netherlands	hiemke.knijn@crv4all.com
Daniel Foy	Industry rep.	AgriGates	USA	d.foy@agrigrates.io
Victor Bloch	Young Club	Luke	Finland	victor.bloch@luke.fi



Technical tours

Friday 1st September 2023

One day

Technical tours will be subject to feasibility and with a minimum registered participant. Some technical tours have already been cancelled for these reasons.

All preliminary programmes mentioned below are not final and are subject to changes.

Transportation (when applicable) will be planned.

TOUR 2

Title: Agroecology of grassland farming systems and cheese production

Preliminary program (subject to change):

- Morning activity: Visit of INRAE Theix & Saint-Nectaire Farm
- Lunch: In a restaurant (to be defined)
- Afternoon activity: Plateau of Gergovie and Museum visit



TOUR 3

Title: Discovery of the Vercors mountain pastures

Preliminary program (subject to change):

- Morning activity: Presentation of the 'Alpages Sentinelles' program by LESSEM scientists and its partners.
- Lunch: In a mountain hut
- Afternoon activity: Local sightseeing or gastronomic tour in the Vercors



(photo © Renaud Jaunatre)

TOUR 6

Title: Come and discover the Farm in Jalogny: research on efficient and sustainable practices in suckling cattle farming

Preliminary program (subject to change):

- Morning activity: Visit of the experimental farm of Ferm'Innov
- Lunch: Local products tasting (on site, meat, wines, etc.)
- Afternoon activity: Visit about wine production



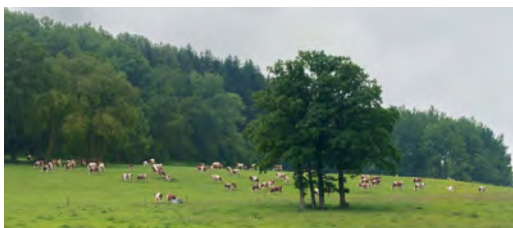
(photo © INRA)

TOUR 7

Title: A unique journey through the Montbéliard Cattle breed with an optimized use of genomics

Preliminary program (subject to change):

- Morning activity: Visit of the UMOTEST Coopex Group: Montbéliard Federation with systematic implementation of genomic selection; Semen production; Female station & Embryo collection; Dairy Farm with full implementation of genomics (Montbéliard breed)
- Lunch: On site, place to be determined
- Afternoon activity: Visit of Royal Monastery of Brou (Bourg en Bresse); Cheese (Comté) making factory or Coopérative de Etrez-Foissiat (Bresse Cream AOP)



(photo © Giorgio Soldi)

TOUR 10

Title: Milk and cheese production in Haute-Savoie (Alps)

Preliminary program (subject to change):

- Morning activity: Visit of the dairy farm producing local cheese Reblochon
- Lunch: In a restaurant (to be defined)
- Afternoon activity: Visit of the De Menthon Castle



TOUR 13

Title: From the meadow to the Charolaise plate

Preliminary program (subject to change):

- Morning activity: Visit of a beef farm & of the slaughterhouse of Paray-Le Monial (a tractor ride will be included with the tour!)
- Lunch: Thematic meal at the Maison du Charolais '7 ways to eat meat'
- Afternoon activity: Discovery of Pierreclos castle



TOUR 14

Title: Fruits, wine and sheep in Drôme: what else

Preliminary program (subject to change):

- Morning activity: Visit of the sheep-pastured orchard (support of the project 'ECORCE') and the dairy cow farm, discussions with the farm director and FiBL France team
- Lunch: Wine tasting with Côtes du Rhône and Clairette de Die wines & lunch at the Auberge de Crussol, local, traditional and inventive food
- Afternoon activity: Visit of the Château de Crussol & visit of the Ferme du Grand Laval, meeting with the farmers and explanations: sheep grazing in orchards and perennial crops, hens associated with fruit trees in mobile hen houses, etc.



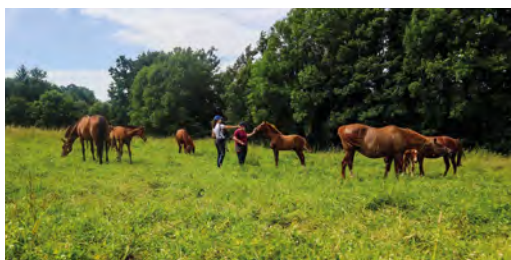
(photo: © Clémence Rivoire – FiBL France)

TOUR 17

Title: Horse tour: health and breeding

Preliminary program (subject to change):

- Morning activity: Visit of Vetagrosup
- Lunch: On site, place to be determined
- Afternoon activity: Visit of Haras Numenor - breeding and reproduction center



(photo: Ifce / Mathilde DHOLLANDE)

TOUR 19

Title: Poultry of Bresse production and regional wine tasting!

Preliminary program (subject to change):

- Morning activity: Visit of a Bresse chicken farm
- Lunch: On site, place to be determined (Bressans lunch in a traditional restaurant)
- Afternoon activity: Wine tasting in a castle



Social events

Interbull dinner

BRASSERIE GEORGES (address: 30 Cr de Verdun Perrache, 69002 Lyon)
Saturday, August 26th 2023 – 7:30 pm to 11:00 pm
Metro station A: Perrache

Description:

Let's celebrate together the 40th anniversary of Interbull!

Registration: included in the Interbull registration fees, first come first served.

Access to the evening is by registration only.

No transfer will be planned. Proper attire required.



French dinner

MUSÉE DES CONFLUENCES (address: 86 Quai Perrache, 69002 Lyon)
Tuesday, August 29th 2023 – 8:30 pm to 1:00 am
Metro Station: Tramway 1: Musée confluence

Preliminary program:

- 08:30 pm: Arrival of participants and aperitif
- 08:30 pm to 01:00 am: Dinner cocktail in the Crystal & in the Terrace
- 09:00 pm: Opening speech by the organizers
- 09:00 pm to 11:00 pm: Free access to all permanent exhibition's rooms; including half guided tours.
- 11:00 pm to 01:30 am: Dancing party
- 01:30 am: End of the evening

Price (per person): 50€ Inc. VAT

Access to the evening is by registration only.

No transfer will be planned. Proper attire required.



Gala dinner

HEAT / H7 (address: 70 Quai Perrache, 69002 Lyon)

Thursday, August 31st 2023 – 07:30 pm to 12:00 am

Metro Station: Tramway 1: Hôtel de Région

Preliminary program:

- 07:30 pm: Arrival of participants and aperitif
- 08:00 pm to 08:30 pm: Typical musical show
- 09:00 pm to 11:00 pm: Seated Dinner
- 09:00 pm: Opening speech by the organizers
- 11:00 pm to 12:00 am: Dancing party, access to outdoor games
- 12:00 am: End of the evening

Price (per person): 90€ Inc. VAT

Access to the evening is by registration only.

No transfer will be planned. Proper attire required.



Touristic tours

Important note:

All tours are included in the Accompanying Person registration fee. We advise you to wear comfortable clothes and shoes.

The old city

Monday, August 28th (HALF DAY - morning)

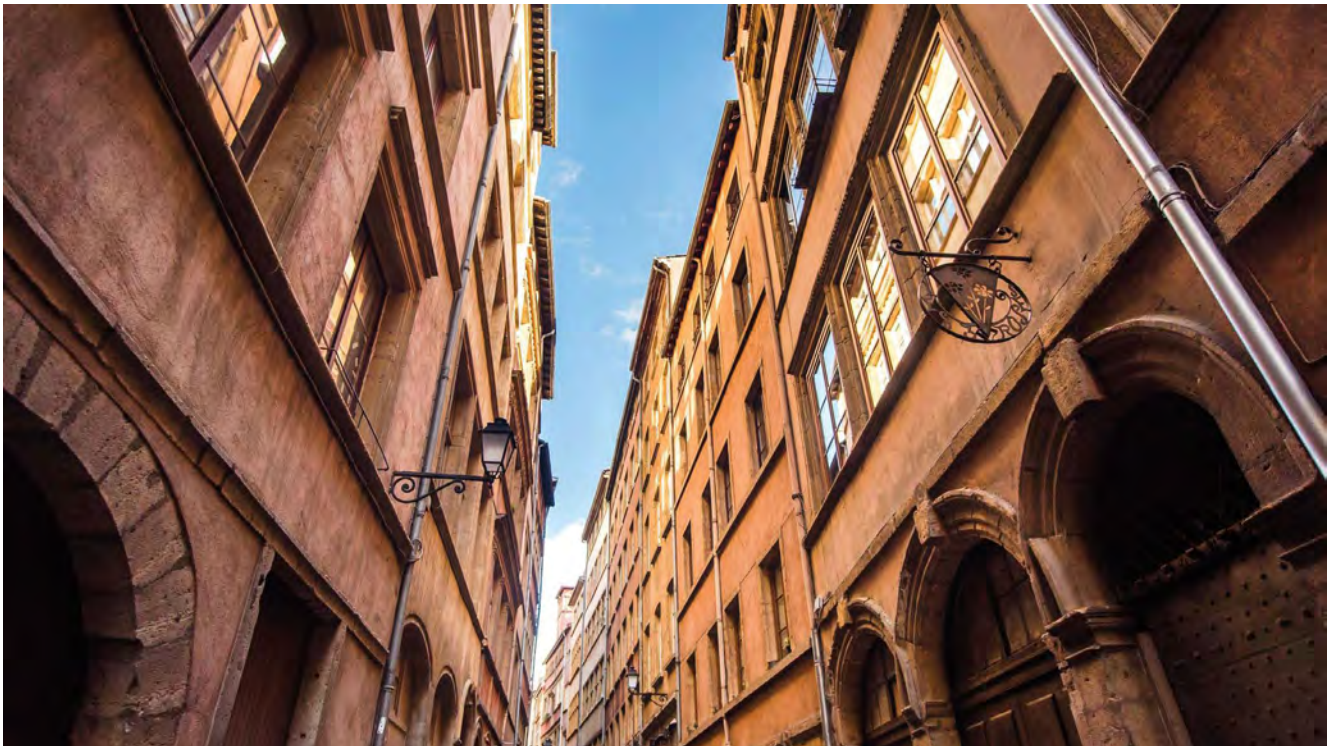
- Let's stroll around this amazing district, listed by UNESCO as a World Heritage site in 1998.
- Let's admire the beautiful Renaissance facades and buildings.
- Let's go through 'Traboules' and 'Miraboules' hidden corridors and byways.
- Let's observe the numerous religious statues.
- Let's have a look at the local restaurants in Lyon, called 'Bouchon' and typical menus.
- Let's discover Renaissance courtyards with Mediterranean colors.
- Let's meet and talk with local artisans (silk, stand glass, ceramics, etc.).
- Let's go inside the gothic Cathedral Saint Jean.
- Then, if you wish to ... let's taste some Lyon food specialties!

Price (per person): 30€ Inc. VAT

(Price for a minimum of 30 participants)

Tour includes:

- Transfer (by public transports)
- English Tour Guide



The silk road - Lyon capital of silk

Tuesday, August 29th (HALF DAY - morning)

Discover the second hill of the city, dedicated to the silk history: 'LA CROIX ROUSSE'

- Visit of the Silk Museum: admire Jacquard silk looms from the XIX century. We will detail the life and the process of the silk workers and weavers.
- Visit of a design and textile 'village' where new companies are helped to begin their activity Silk shop with scarves exclusively made in Lyon, for shopping ...

Price (per person): 50€ Inc. VAT

(Price for a minimum of 30 participants)

Tour includes:

- Transfer (by public transports)
- English Tour Guide



A day in the charming Beaujolais region

Wednesday, August 30th (ALL DAY)

Departure in a coach for a sightseeing tour in the southern part of Beaujolais region, 30 minutes from Lyon to the north, before Burgundy. A fluent English tour guide will be at your disposal.

- Two stops and Photo opportunities in typical villages in the middle of the slopes:
- Photo stop in BAGNOLS, famous for its XIIIth Century castle and typical farms,
- 30 minutes walking tour in OINGT, charming golden stones village, its medieval church and watch Tower, amazing view to the scenery with mountains covered with Douglas firs in the background...
- Then, continuation to ANSE and meeting with a fabulous wine owner, explanations about making wine, pruning vineyards, grapes, diseases etc... You'll visit his private museum and discover tools to take care of the vineyards. Beaujolais Rosé, Côtes de Brouilly and white Beaujolais will be tasted with numerous samples of Olive bread, bacon bread, nuts bread with salami and cheese...
- Back again to the coach in order to reach the northern part of Beaujolais, next to Macon, very near to Burgundy. On the way, many information will be given about this famous region of France by your tour guide.
- Then, on the road again to climb up to the Mount BROUILLY to discover an amazing view to the valley, the east direction to the French Alps.

Price (per person): 155€ Inc. VAT

(Price for a minimum of 30 participants)

Tour includes:

- Transfer
- English Tour Guide
- Lunch
- Admission to all activities





Science for people, life & earth

The French National Research Institute for Agriculture, Food, and Environment (INRAE) is a major player globally in **research and innovation on agriculture, food and the environment**. It is a community of 12,000 people with 273 research, experimental research, and support units located in 18 regional centres throughout France.

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**French National Research Institute
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French association for animal production

Association
française de
zootechnie



A platform to showcase the benefits of animal products and farming, and a hub for all those involved in livestock production.

Our activities

- Conferences & webinars
- CSAAD course in livestock nutrition
- AFZ Award for doctoral research
- Scientific communication
- Scientific expertise

Our tools

- **FeedTables.com**: livestock feeds database
- **Feedipedia.org**: livestock feeds encyclopaedia
- **Feedinamics.com**: calculator of nutritive values
- **Optim'AI**: diet optimiser for dairy cows

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Peer reviewed research shows that completely replacing sulphates with IntelliBond improves fibre digestibility^[1,2,3,4,5,6,7,8,9] and can increase milk production^[9,10].

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1) Faulkner et al, 2017, 2) Miller et al, 2020, 3) Guimaraes et al, 2019, 4) Guimaraes et al, 2020, 5) Caldera et al, 2019, 6) Genther et al, 2015, 7) Van Kuijk et al, 2022, 8) Ibraheem et al, 2021, 9) Daniel et al, 2020, 10) Yasui et al, 2014.

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Founded on 9 October 1979 at the initiative of representative organisations in the cattle sector, INTERBEV was recognised on November 18th, 1980 as an interbranch organisation for meat and livestock by ministerial decree.

INTERBEV'S KEY OBJECTIVES :

REPRESENTATION

INTERBEV acts as a genuine spokesperson for the livestock and meat sector. As a “from the field to the fork” inter-professional organisation, INTERBEV has a large representation to make the voice of all the bovine, calf, sheep, horse and goat professionals heard in all instances nationally or internationally. This representation, recognised by all those involved with INTERBEV and by its National Organisations, gives it a leading role in defending the interests of the entire sector.

DIALOGUE

INTERBEV is duty bound to define common positions to the 22 National Organisations that it is composed of. Dialogue is a key objective of the inter-professional organisation and as the interests of professional federations sometimes differ, it is essential that INTERBEV provides the possibility for exchanges, discussions and common reflections, with its first objective being to identify a consensus. The ability of the meat industry to organise itself and enter into dialogue gives weight to the inter-professional organisation's messages since they represent the position of all those involved in the industry.

COMMUNICATION

Lifestyles are changing as are the eating habits of the French who are increasingly adopting a responsible attitude to eating. This has been observed for some years by professionals within the livestock and meat sector, who are all members of INTERBEV, and are committed to facing the new challenges of sustainability through their collective approach to social responsibility: the Pact for Social Commitment. The PACT also aims at the promise of enhanced meat quality, one of the industry's objectives resulting from the French National Food Conference. To promote this, the inter-professional organisation launched a collective communication campaign entitled “LOVE MEAT, EAT BETTER”, signed “Naturally Flexitarian”.

INTERBEV'S STRATEGIC FOUNDATION

The inter-professional organisation's strategic base set up by INTERBEV in 2017, is a collective approach to social responsibility, integrating the industry's plans set out at the French National Food Conference (États Généraux de l'Alimentation). This strategy, called PACTE, is based on 5 core values: Progress, Future, Dialogue, Transparency and Expertise.

Its objective is to provide a global response to the expectations of society and those involved in the industry in terms of good production and consumption practices, with evidence and guarantees in support of this. It aims to highlight the strengths of the sector, to identify areas for improvement by working particularly with environmental and animal welfare NGOs and to use collective tools, in order to provide sustainable food.

This approach is under the guidance of the internationally recognised ISO 26000 standard, entitled Social Responsibility. In 2018 INTERBEV was the first food industry inter-professional organisation to be awarded a level 3 out of 4 AFNOR certificate “CSR commitment confirmed”, later confirmed in 2021.





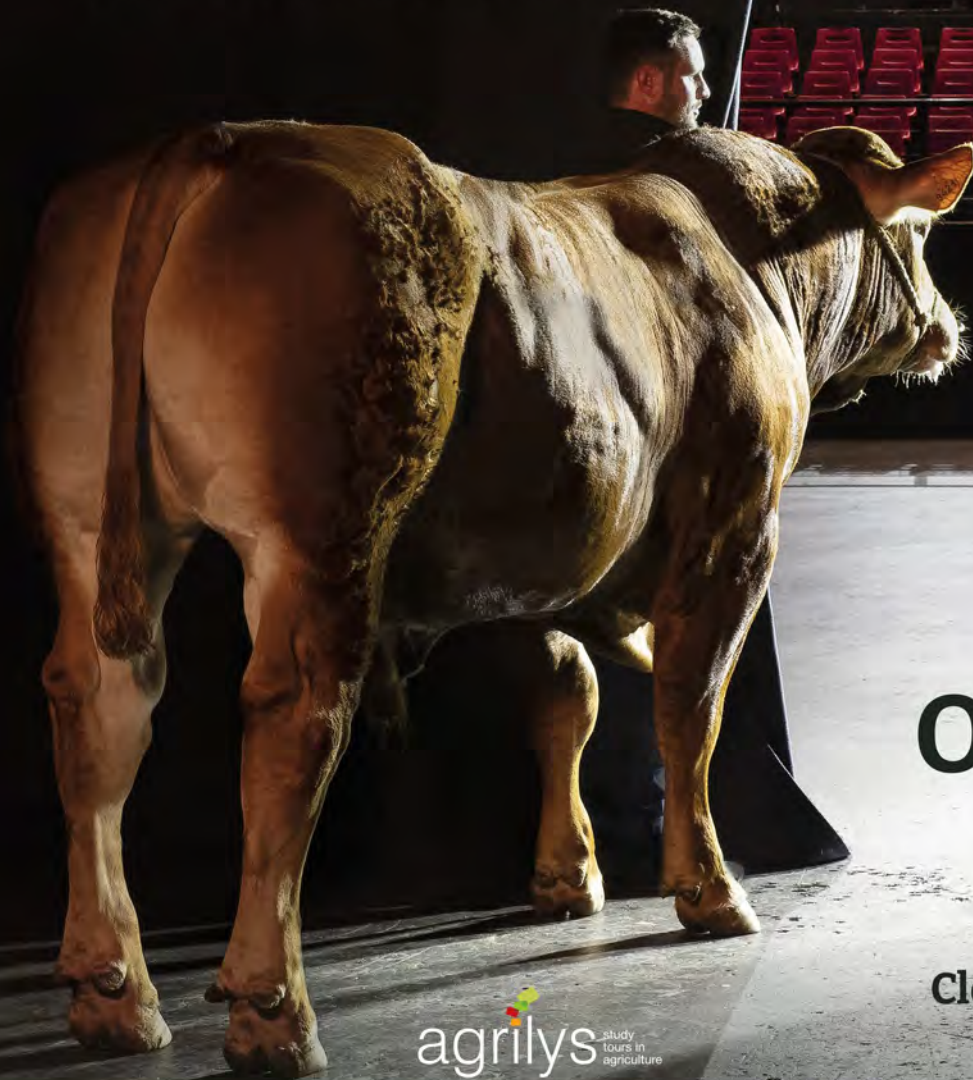
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- Produce and disseminate new knowledge and innovations for sustainable livestock farming

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