

Tuesday 15th September

17:00-18:00: Registration of participants

18:00: Welcome reception at the conference venue

Wednesday 16th September

08:30-09:00: Registrations - Welcome & coffee

09:00-10:20: Plenary Session – Key note speakers

10:20-11:00: Coffee break

11:00-12:40: Sessions

12:40-14:00: Lunch

14:00-15:20: Sessions

15:20-16:00: Coffee break

16:00-17:20: Sessions

SESSION: PLENARY SESSION – KEY NOTE SPEAKERS

ROOM: AULA MAGNA

TIME: 9:00-10:20

Presenter	Title	Time
Prof. Marcella Guarino	Welcome and Introduction	09:00-09:20
Ms. Anne Mottet <i>Livestock Policy Officer – FAO- Italy</i>	Trends in the global livestock sector: challenges and opportunities	09:20-09:50
Prof. Jörg Hartung <i>University of veterinary medicine Hannover, Germany</i>	Status of PLF in European farms - the farmers' perspective	09:50-10:20

SESSION 1: CATTLE – MILKING

ROOM: AULA MAGNA

TIME: 11:00-12:40

CHAIR: Sandra Rose-Meierhöfer (*Germany*)

CO-CHAIR: Bernadette Earley (*Ireland*)

Presenter	Author(s)	Title	Time
Bernadette O'Brien	B. O'Brien, C. Foley, J. Shortall, L. Shalloo	An economic appraisal of automatic and conventional milking within a grass based seasonal milk production system	11:00
Claudia Arcidiacono	S.M.C. Porto, C. Arcidiacono, U. Anguzza, G. Cascone	Field performance evaluation of a computer vision-based system for the automatic detection of dairy cow behaviour housed in free-stall barns	11:20
Cathriona Foley	C. Foley, J. Shortall, B. O'Brien	Milk Production, Cow Traffic and Milking Duration at Different Milking Frequencies in an Automated Milking System Integrated with Grazing	11:40
Julia Heinicke	J. Heinicke, S. Rose-Meierhöfer, C. Ammon, R. Brunsch	Evaluation of quarter-individual milk yield in an automatic milking system	12:00
Gil Katz	G. Katz, D. Bezman, L. Lemberskiy-Kuzin, U. Merin, G. Leitner	Real-time evaluation and on-line separation of milk according to its industrial properties	12:20

SESSION 2: POSITION AND CATTLE
ROOM: AULA MAGNA
TIME: 14:00-15:20

CHAIR: Ilan Halachmi (*Israel*)
CO-CHAIR: Henk Hogeveen (*The Netherlands*)

Presenter	Author(s)	Title	Time
James Oltjen	J.W. Oltjen, J.W. Stackhouse, L.C. Forero, K.R. Stackhouse-Lawson	Mobile beef herd spatial tracking and database for sustainability and lifecycle analysis	14:00
Susanne Demba	S. Rose-Meierhöfer, C. F. Børsting, W. Auer, V. Gföllner, C. Ammon, S. Demba	Validation of a positioning system in a loose housing dairy barn by using a wireless local area network	14:20
Christina Umstatter	C. Umstatter, D. McSweeney, C. Foley, P. Halton, K. Heitkaemper, M. Schick, B. O'Brien	Labour costs of fencing in grazing systems and virtual fencing as a potential technological solution	14:40
Ilaria Fontana	I. Fontana, E. Tullo, D. Gottardo, C. Bahr, S. Viazzi, K. H. Sloth, M. Guarino	Validation of a commercial system for the continuous and automated monitoring of dairy cows activity	15:00

SESSION 3: POSITION AND CATTLE
ROOM: AULA MAGNA
TIME: 16:00-17:20

CHAIR: Christina Umstätter (*Switzerland*)
CO-CHAIR: Claudia Kamphuis (*The Netherlands*)

Presenter	Author(s)	Title	Time
Adolfo Armando Rayas Amor	G.C. Miranda-de la Lama, E. Morales-Almaráz, G. Licona-Velázquez, G. Robles-José, R. Vieyra-Alberto, R.G. Cruz-Monterrosa, C.G. Martínez-García, A.A. Rayas-Amor	Validation of a tri-axial accelerometer for recording grazing and ruminating time of dairy cows	16:00
Isabelle Veissier	M.-M Mialon, K. H. Sloth, I. Veissier	Real time positioning to detect early signs of welfare problems in cows	16:20
Nora Hammer	N. Hammer, F. Adrion, E. Holland, M. Staiger, D. Jezierny, E. Gallmann, T. Jungbluth	Simultaneous detection of cattle by using an UHF-RFID system	16:40
Matti Pastell	J. Backman, L. Frondelius, J. Mononen, M. Pastell	Filtering methods to improve the accuracy of dairy cow indoor positioning data	17:00

SESSION 4: SOUND AND CHICKENS/PIGS
ROOM: MEDICINA
TIME: 11:00-12:40

CHAIR: Dries Berckmans (*Belgium*)
CO-CHAIR: Alberto Peña Fernández (*Belgium*)

Presenter	Author(s)	Title	Time
Irenilza Alencar Nääs	I. A. Nääs, M. S. Baracho, Y. B. Tolon, F. R. Caldara, R. G. Garcia	Comparison of group and individual housing of lactating sows using vocalization analysis	11:00
Martijn Hemeryck	M. Hemeryck, D. Berckmans, E. Vranken, E. Tullo, I. Fontana, M. Guarino, T. van Waterschoot	The Pig Cough Monitor in the EU-PLF project: results and multimodal data analysis in two case studies	11:20
Theo Demmers	Q. Tong, I. M. McGonnell, C. E. B. Romanini, H. Bergoug, N. Roulston, V. Exadaktylos, D. Berckmans, M. Guinebretière, N. Eterradossi, P. Garain, T. G. M. Demmers	Optimising incubation of broiler eggs using external stimulation	11:40
Arda Aydin	A. Aydin, S. Viazzi, C. Bahr, D. Berckmans	Fully automated monitoring tool to detect feed uptake of multiple broiler chickens by sound analysis	12:00
Ilaria Fontana	I. Fontana, E. Tullo, A. Peña Fernández, D. Berckmans, E. Koenders, E. Vranken, J. McKinstry, A. Butterworth, D. Berckmans, M. Guarino	Frequency analysis of vocalisations in relation to the growth in broiler chicken	12:20

SESSION 5: IMAGE AND BROILERS
ROOM: MEDICINA
TIME: 14:00-15:20

CHAIR: Harry Blokkhuis (*Sweden*)
CO-CHAIR: Alberto Peña Fernández (*Belgium*)

Presenter	Author(s)	Title	Time
Daniel Berckmans	M.A. Kashiha, A.R. Green, T.G. Sales, C. Bahr, D. Berckmans, R.S. Gates	Application of image processing on hen tracking in an environmental preference chamber	14:00
Anna Johansson	A. Johansson, H. J. Blokkhuis, D. Berckmans, A. Butterworth	Development of an automatic method to assess the human-animal relationship in broilers at flock level	14:20
Matteo Barbari	M. G. L. Cândido, C. G. S. Teles Junior, I. F. F. Tinôco, J. C. P. Arcila, P. P. Queiroz, K. P. Oliveira, L. G. F. França, D. J. R. Coelho, M. Barbari	Evaluation of the feeding behaviour of broilers in different thermal environments via image analysis	14:40
Alberto Peña Fernández	A. Peña Fernández, E. Tullo, V. Exadaktylos, E. Vranken, M. Guarino, D. Berckmans	Broiler activity and distribution as behaviour-based welfare indicators	15:00

SESSION 6 : SHEEP
ROOM: MEDICINA
TIME: 11:00-12:40

CHAIR: Thomas Bartzanas (*Greece*)

Co-CHAIR: Tom Van Hertem (*The Netherlands*)

Presenter	Author(s)	Title	Time
J.A. Abecia	J.A. Abecia, M. Pascual-Alonso, L.A. Aguayo-Ulloa, G.A. Maria	Comparison of several devices to measure body temperature in sheep	11:00
Bruno Meunier	C. Ginane, A. Boissy, M. Houdebine, G. Fleurance, MM. Mialon, M. Silberberg, B. Meunier	Development of a multi-sensor and multi-application device for monitoring indoor and outdoor sheep behaviour	11:20
G.A. Maria	M. Pascual-Alonso, L. Aguayo-Ulloa, G.C. Miranda-de la Lama, M. Villarroel, S. Alierta, M. Mitchell, G.A. María	Effect of 4 hour transport on the welfare of cull ewes using sensors	11:40
D.K. Papanastasiou	D.K. Papanastasiou, T. Bartzanas, C. Kittas	Interannual variation of potential heat-stress of sheep in Greece during summer	12:00
Harriet Wishart	H. Wishart, C. Morgan-Davies, A. Waterhouse	A PLF approach for allocating supplementary feed to pregnant ewes in an extensive hill sheep system	12:20

SESSION 7: INFORMATION TECHNOLOGY IN PLF
ROOM: 201
TIME: 14:00-15:20

CHAIR: Vasileios Exadaktylos (*Belgium*)
Co-CHAIR: Jasper Wouters (*Belgium*)

Presenter	Author(s)	Title	Time
Heidi Mai-Lis Andersen	H. M-L. Andersen, E. Jørgensen, L. J. Pedersen, L. Foldager	Can use of online measurements in EVOP designs reduce the time to locate production optimum?	14:00
I. Pouloupoulou	I. Pouloupoulou, F. Chatzipapadopoulos	Saving resources using a cloud livestock farm management tool	14:20
A.L.H. Andriamandroso	A.L.H. Andriamandroso, F. Lebeau, J. Bindelle	Changes in biting characteristics recorded using the inertial measurement unit of a smartphone reflect differences in sward attributes	14:40
Matthijs Vonder	M.R. Vonder, B.D. van der Waaij, E. Harmsma, G. Donker	Near real-time large scale (sensor) data provisioning for PLF	15:00

SESSION 8: SUPPORT FROM DATA
ROOM: MEDICINA
TIME: 16:00-17:20

CHAIR: Kees Lokhorst (*The Netherlands*)
Co-CHAIR: Ilaria Fontana (*Italy*)

Presenter	Author(s)	Title	Time
R.P.J. van Winden	A.H. Ipema, R.M. de Mol, P.H. Hogewerf, B. Prins, F.D. Sijbrandij, R.P.J. van Winden, M.J.A. Hanenberg, R. Jorritsma	Real time operational support in young stock rearing	16:00
Henk Hogeveen	W. Steeneveld, J.C.M. Vernooij, H. Hogeveen	Effect of sensor systems on production, health, reproduction and economics on Dutch dairy farms	16:20
Matti Pastell	J. Nikander, M. Laajalahti, S. Kajava, A. Sairanen, M. Järvinen, M. Pastell	Development of a general cowshed information management system from proprietary subsystems	16:40

Tom Van Hertem	E. Koenders, L. Rooijackers, T. Van Hertem, E. Vranken, D. Berckmans, D. Berckmans	Towards the development of a practical visualisation tool for farmers and other stakeholders	17:00
----------------	--	--	-------

Thursday 17th September

08:30-09:00: Welcome & coffee

09:00-16:00: Industry Session

09:00-10:20: Sessions

10:20-11:00: Poster Session and Coffee break

11:00-12:40: Sessions

12:40-14:00: Lunch

14:00-15:20: Sessions

15:20-16:00: Coffee break

16:00-17:20: Sessions

17:30 Closing Session

18:00-19:00: Advisory Board European Committee for PLF

SESSION 9: HEALTH AND CATTLE
ROOM: MEDICINA
TIME: 09:00-10:20

CHAIR: Jeffrey Bewley (USA)
Co-CHAIR: Daniele Torreggiani (Italy)

Presenter	Author(s)	Title	Time
Rudi De Mol	R.M. De Mol, M.-H. Troost, A. Sterk, R. van Winden, R. Jorritsma, F.D. Sijbrandij, N. Hennes, E.J. Lankhorst, P.H. Hogewerf	Application of multivariate analysis of sensor data for the detection of metabolic disorders in dairy cows	09:00
Bernadette Earley	B. Earley, E. Lynch, M. McGee	Impact of abrupt weaning at housing on leukocyte distribution, neutrophil function, lymphocyte immune phenotypes, and acute phase protein response of suckled beef calves – biomarker discovery	09:20
Lilli Frondelius	L. Frondelius, S. Kajava, H., Lindeberg, J. Mononen, M. Pastell	Measuring the effect of hoof lesions on cow's walking, lying and eating behaviour	09:40
Margherita Caccamo	M. Caccamo, G. C. Guarnera, G. Licitra, G. Azzaro, R. Petriglieri, G. Gallo	Estimation of cow's body condition score through statistical shape analysis and regression machines from images acquired using low-cost digital cameras	10:00

SESSION 10: OESTRUS AND CALVING
ROOM: MEDICINA
TIME: 11:00-12:40

CHAIR: Tami Brown-Brandl (USA)
Co-CHAIR: Karen Helle Sloth (Denmark)

Presenter	Author(s)	Title	Time
Claudia Kamphuis	C. Kamphuis, K. Huijps	Using successful inseminations to evaluate sensitivity of automated heat detection systems	11:00

K.A. Dolecheck	K.A. Dolecheck, W.J. Silvia, G. Heersche Jr., C.L. Wood, K.J. McQuerry, J.M. Bewley	Can automated estrus detection compete with timed artificial insemination as a reproductive management strategy?	11:20
C.J. Rutten	C.J. Rutten, W. Steeneveld, C. Kamphuis, K. Huijps, H. Hogeveen	Development of a predictive model for the onset of calving	11:40
Matthew Borchers	M.R. Borchers, Y-M. Chang, A.E. Stone, B.A. Wadsworth, J.M. Bewley	Predicting impending calving using automatic activity and rumination measures in dairy cattle	12:00
João Batista Gonçalves Costa Jr	J.B.G. Costa, Jr, Z. Weller, J.C. Whittier, R. K. Peel, V. Peripolli, J.O.J Barcellos, J.K. Ahola	Passive monitoring of reticulo-rumen temperature to predict calving in dairy cows	12:20

SESSION 11: REAL TIME - CATTLE

ROOM: MEDICINA

TIME: 14:00-15:20

CHAIR: Matti Pastell (Finland)

CO-CHAIR: Claudia Arcidiacono (Italy)

Presenter	Author(s)	Title	Time
Jeffrey Bewley	A.E. Stone, B.A. Wadsworth, C.A. Becker, J.M. Bewley	Breed, production, and temperature humidity index influences on reticulorumen temperature, lying time, neck activity, and rumination behaviour	14:00
Diarmuid McSweeney	D. McSweeney, C. Foley, P. Halton, C. Umstatter, B. O'Brien	Proof of concept for the feasibility of the "Virtual fence" technology for application in intensive grazing systems	14:20
Bengt-Ove Rustas	B.-O. Rustas, T. Eriksson	Hydrogen sulphide as a marker for rumen protein degradation in dairy cows	14:40
Kathalijne Visser	E.K. Visser, J.T.N. Van der Werf, H. Gunnink, V.A. Hindle, J.W. Van Riel, I.D.E. Van Dixhoorn, M.A. Gerritzen	Transport of heifers: rumination and lying activity	15:00

SESSION 12: FEED AND CATTLE

ROOM: MEDICINA

TIME: 16:00-17:20

CHAIR: Giovanni Cascone (Italy)

CO-CHAIR: Christina Umstätter (Switzerland)

Presenter	Author(s)	Title	Time
Andrea Pezzuolo	A. Pezzuolo, L. Magrin, G. Cozzi, F. Marinello, L. Sartori	Precision and efficiency of a mechanized delivery system of solid feeds for veal calves	16:00
Gabriele Mattachini	G. Mattachini, E. Riva, J. C. A. M. Pompe, G. Provolo	Automatic monitoring of cow behaviour to assess the effects of variations in feeding delivery frequency	16:20
Jeffrey Bewley	A. N. Shelley, D. L. Lau, A. E. Stone, J. M. Bewley	Measuring feed volume and weight with machine vision	16:40
Jessica Roberts	J. Roberts, M. Trotter, D. Schneider, D. Lamb, G. Hinch, R. Dobos	Daily grazing time of free-ranging cattle as an indicator of available feed	17:00

SESSION 13: PRODUCTION PIGS
ROOM: 201
TIME: 09:00-09:40

CHAIR: Simona Maria Carmela Porto (*Italy*)
CO-CHAIR: Martijn Hemeryck (*Belgium*)

Presenter	Author(s)	Title	Time
Dan Børge Jensen	D. B. Jensen, C. Cornou, N. Toft, A. R. Kristensen	A multi-dimensional dynamic linear model for monitoring slaughter pig production	09:00
Thomas Banhazi	T. M. Banhazi, A. Banhazi	Long term monitoring of growth rates and environmental parameters on selected European pig farms	09:20

SESSION 14: ENVIRONMENT AND CHICKENS
ROOM: 201
TIME: 11:00-12:40

CHAIR: Hongwei Xin (*USA*)
CO-CHAIR: Dimitris Papanastasiou (*Greece*)

Presenter	Author(s)	Title	Time
Theo Demmers	T.G.M. Demmers, Q. Tong, L. Rooijackers, E. Koenders	Monitoring dust concentration in broiler houses	11:00
Fatima Baptista	M. O. Vilela, J. L. Oliveira, C. G. S. Teles Junior, I. F. F. Tinôco, F. Baptista, M. Barbari, T. C. Santos, C. F. Souza	Spatial variation of enthalpy in a commercial broilers housing in a hot climate region	11:20
Fatima Baptista	R. Osorio Hernandez, I. F. F. Tinôco, L. B. Mendes, L. M. Guerra Garcia, M. Barbari, F. J. F. Baptista, B. F. Tinôco	CFD modeling of the thermal environment in a negative pressure tunnel ventilated broiler barn during the first week of life	11:40
Bas Rodenburg	T. B. Rodenburg, M. A. Gerritsen, E. Topelberg, R. Stump, M. Naguib	Distance to the popholes does not affect use of the winter garden in laying hens	12:00
Thomas Bartzanas	M. Markousi, C. Baxevanou, D. Fidaros, T. Bartzanas, C. Kittas	3D numerical investigation of poultry farms pollutant emissions over complex terrains	12:20

SESSION 15: PIGS
ROOM: 201
TIME: 14:00-15:40

CHAIR: Irenilza Nääs (*Brazil*)
CO-CHAIR: Maciej Oczak (*Austria*)

Presenter	Author(s)	Title	Time
Hongwei Xin	F. Lao, J. P. Stinn, H. Xin, T. Brown-Brandl, K. Liu	Determination of piglet location in farrowing crates based on depth and digital images	14:00
Felix Adrion	F. Adrion, N. Hammer, F. Eckert, S. Götz, E. Gallmann	Adjustment of a UHF-RFID system for hotspot monitoring of fattening pigs	14:20
Matteo Barbari	T. C. Santos, C. C. S. Carvalho, G. C. Silva, T. A. Diniz, L. V. Santos, S. J. M. Moreira, I. F. F. Tinôco, M. Barbari, M. O. Vilela, R. S. Gates	Influence of the air temperature on the pig's behaviour associated with different housing management	14:40

Matteo Barbari	T. C. Santos, C. C. S. Carvalho, G. C. Silva, T. A. Diniz, I. F. F. Tinôco, M. Barbari, R. S. Gates, M. O. Vilela, C. G. S. Teles Junior, C. F. Souza	Bioclimatic evaluation of enthalpy of growing pigs housed and finishing in semiarid regions of Brazil	15:00
Nathalie Quiniou	M. Marcon, L. Brossard, N. Quiniou	Precision feeding based on individual daily body weight of group-housed pigs with an automatic feeder developed to allow for restricting feed allowance	15:20

SESSION 16: PIGS/SOWS
ROOM: 201
TIME: 09:00-10:20

CHAIR: Marcella Guarino (*Italy*)
CO-CHAIR: Alberto Peña Fernández (*Belgium*)

Presenter	Author(s)	Title	Time
Christian Manteuffel	C. Manteuffel, E. Hartung, M. Schmidt, G. Hoffmann, P. C. Schön	Validation of individual parturition indicators for sows based on light barriers	09:00
Christian Manteuffel	C. Manteuffel, E. Hartung, M. Schmidt, G. Hoffmann, P.C. Schön	Individual quantitative prediction of the onset of parturition in sows based on light barriers	09:20
Yannick Ramonet	Y. Ramonet, C. Bertin	Use of accelerometers to measure physical activity of group-housed pregnant sows. Method development and use in six pigs herds	09:40
Maciej Oczak	M. Oczak, K. Maschat, D. Berckmans, E. Vranken, J. Baumgartner	Classification of nest-building behaviour in sows on the basis of accelerometer data	10:00

SESSION 17: CATTLE
ROOM: 211
TIME: 11:00-12:40

CHAIR: Isabelle Veissier (*France*)
CO-CHAIR: Ilaria Fontana (*Italy*)

Presenter	Author(s)	Title	Time
Cees Lokhorst	C. Lokhorst, B. J. Wulfse	Chain cooperation as critical success factor in Smart Dairy Farming	11:00
Clément Allain	C. Allain, A. Chanvallon, R. Courties, D. Billon, N. Bareille	Technical, economic and sociological impacts of an automated estrus detection system for dairy cows	11:20
Francesco Marinello	F. Marinello, A. Pezzuolo, D. Cillis, F. Gasparini, L. Sartori	Application of Kinect-Sensor for three-dimensional body measurements of cows	11:40
Thomas Bartzanas	V. Anestis, T. Bartzanas, C. Kittas	Life cycle inventory analysis for the milk produced in a Greek commercial dairy farm – The link to Precision Livestock Farming	12:00
Oleksiy Guzha	O. Guzha, H. Ardö, A. Herlin, M. Nilsson, K. Åström, C. Bergsten	Automatic detection of social interactions in the waiting area of automatic milking stations using a video surveillance system	12:20

SESSION 18: INFRARED TECHNOLOGY

ROOM **211**
TIME: **14:00-15:00**

CHAIR: **Andy Butterworth (UK)**
CO-CHAIR: **Anna Johansson (Sweden)**

Presenter	Author(s)	Title	Time
Mhairi Sutherland	M. Sutherland, S. Dowling, B. Backus, M. Stewart	The use of infrared thermography to assess stress in pigs	14:00
Tami Brown-Brandl	T. M. Brown-Brandl, M. D. Hayes, G. R. Rohrer, R. A. Eigenberg	Thermal comfort evaluation of three genetic lines of modern pigs using thermal images	14:20
Mairi Stewart	M. Stewart, A. L. Schaefer, M. A. Sutherland, M. T. Wilson	Automated applications of infrared thermography for disease detection in cattle	14:40

POSTER SESSION

TIME: 10:20-11:00

Poster number	Presenter	Author(s)	Title
1	C.van der Weerd	C. van der Weerd, J. de Boer	Focusing on behaviour to ensure adoption of Big Data information services in Precision Livestock Farming
2	Tal Schcolnik	T. Schcolnik, E. Ishay, H. Honig	Incorporating automated daily milk components into modern dairy farm management
3	Miel Hostens	M. Hostens, K. Hermans, J. De Koster, M. Van Eetvelde, E. De Preester, H. Bogaert, B. Van Ranst, S. Moerman, J. Vandepitte, G. Opsomer	Bovi-Analytics: A platform to educate veterinary students Big Data in dairy cows. An initiative to create the veterinary stethoscope version 3.0?
4	Karen Helle Sloth	K. H. Sloth, D. Frederiksen, S. Klimpel	Estimated cow time-budgets using a Real Time Location System
5	Stephanie Geischer	S. Geischer, B. Haidn, R. Peis, J. Harms, E. Misha	Is a commercial available Pedometer accurate enough to determine lying times of cows for research purpose?
6	Bernadette Earley	B. Earley, D.J. Prendiville, J. Lowe, C. Spahr, P. Kettlewell	Radiotelemetry systems for measuring the body temperature of cattle
7	Karen Helle Sloth	K.H. Sloth, D. Frederiksen, S. Klimpel	Estrous induced changes in cow behavioral activities measured with RTLS
8	John Shortall	J. Shortall, C. Foley, R. Sleator, B. O'Brien	A comparison of the labour requirements on Irish dairy farms with automatic and conventional milking systems integrated with grazing
9	Claudia Arcidiacono	C. Arcidiacono, G. Cascone, V. Catania, R. Di Natale, A. R. Intilisano, M. Mancino, G. Monteleone, S. M. C. Porto	Feasibility study on the development of a real-time inertial sensor-based system for dairy cow behaviour detection in free stall barns
10	Ilaria Fontana	E. Tullio, I. Fontana, A. Peña Fernandez, D. Berckmans, E. Koenders, E. Vranken, S. N. Brown, A. Butterworth, H. Gunnink, M. Guarino	Risk factor for footpad dermatitis and hock burns in broiler chickens
11	Diego Pereira Neves	D. P. Neves, S. Abdanan Mehdizadeh, T. M. Banhazi, J. R. Hutchinson, I. A. Nääs	The effects of feed particle size on feeding kinematics in young broiler chickens
12	Dimitris Papanastasiou	T. Bartzanas, , D. K. Papanastasiou, I. Skoufos, A. Tzora, D. Fidaros, C. Baxevanou, P. Panagakis, C. Kittas	Environmental friendly poultry production using novel precision livestock techniques
13	Rodrigo Garófalho Garcia	R. G. Garcia, M. R. S. Santana, I. A. Nääs, F. R. Caldara, C. Eyng, I. C. L. A. Paz	Image analysis for studying the behaviour of broilers exposed to artificial LED lighting
14	Ibiara Correia de Lima Almeida Paz	G. A. A. Baldo, I. C. L. Almeida Paz, M. S. Amadori, I. A. Nääs, R. G. Garcia, F. R. Caldara, E. A. Garcia, A. B. Molino, J. A. Vieira Filho, C. Sanfelice	Walking ability, carcass and breast percentage of broiler chickens
15	Ibiara Correia de Lima Almeida Paz	I. C. L. Almeida Paz, M. S. Amadori, G. A. A. Baldo, I. A. Nääs, R. G. Garcia, F. R. Caldara, E. A. Garcia, A. B. Molino, J. A. Vieira Filho, C. Sanfelice	Walking ability of broilers with different gait scores
16	Rodrigo Garófalho Garcia	F. R. Caldara, L. S. Santos, I. A. Nääs, R. G. Garcia, R. K. S.	Environmental effect on surface temperature of newborn piglets

		Santos, L. Foppa, M. Moi, G. B. Moura	
17	Fabiana Ribeiro Caldara	F. R. Caldara, L. S. Santos, M. Moi, R. G. Garcia I. A. Nääs, L. Foppa, S. P. Machado, R. Moura	Effect of birth weight on the surface temperature of piglets
18	Fabiana Ribeiro Caldara	F. R. Caldara, I. A. Nääs, R. G. Garcia, D. E. Graciano, L.Foppa, I.C.L. Almeida Paz, R. Moura, S.P. Machado	Identification of joint swelling in pigs using infrared thermography