



## Scientific Sessions – Theatre Presentations

Tuesday 27 August: 14:00 - 15:30

Session	Parallel Session 1: PLF data and its exploitation for solutions and decision-making (1)	Parallel Session 2: PLF technology for Sheep	Parallel Session 3: PLF sensing and monitoring techniques for dairy animals
Location	Kane Building, Room G2	Location: Kane Building, Room G19	Location: Kane Building, Room G18
Time	Presentation Details		
14:00	Opportunities and challenges for real-time management (RTM) in extensive livestock systems <i>A. Waterhouse, J.P. Holland, A. McLaren, R. Arthur, C.A. Duthie, S. Kodam and H. Wishart</i>	Relationship between accelerometer features and behavioural traits in Sarda dairy sheep submitted to short term grazing tests <i>R. Cossu, M. Decandia, G. Molle, M. Acciaro, M. Mameli, A. Cabiddu, M.G. Serra, C. Manca, S.P.G. Rassu, C. Dimauro and V. Giovanetti</i>	Sensor Technologies in Dairy Farms in Finland <i>M. Utriainen, M. Pastell, M. Rinne, S. Kajava and H. Myllymäki</i>
14:15	The effect of timing of a single-dose artificial insemination on sow fertility <i>G. Germain, J. Labrecque and J. Rivest</i>	Machine Learning of Maternal Quality in Sheep <i>B.B. Odevci and E. Emsen</i>	The use of infrared reflectance spectroscopy to predict the dry matter intake of lactating grazing dairy cows <i>B. Lahart, S. McParland, E. Kennedy, T.M. Boland, T. Condon, N. Galvin and F. Buckley</i>
14:30	Monitoring body temperature in chickens during an infectiology experiment using a sensor-based telemetric system <i>A. Keïta, M. Amelot, D. Courtois, T. Le Coq, S. Bougeard, C. Courtillon, J.P. Moysan and S. Soubies</i>	Mobile precision flock management tool for intensively managed meat sheep <i>B.B. Odevci and E. Emsen</i>	Development of educational VR simulator of livestock houses <i>Rack-woo Kim, Uk-hyeon Yeo, Sang-yeon Lee, Jun-kyu Kim, and In-bok Lee</i>



# THE EUROPEAN CONFERENCE ON PRECISION LIVESTOCK FARMING

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Location	Kane Building, Room G2	Location: Kane Building, Room G19	Location: Kane Building, Room G18
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14:45	Machine learning to realize phosphate equilibrium at field level in dairy farming <i>H. Mollenhorst, M.H.A. de Haan, J. Oenema, A.H. Hoving-Bolink, R.F. Veerkamp and C. Kamphuis</i>	Pilot study to assess the accuracy of the RumiWatch noseband sensor for detecting grazing behaviour of sheep <i>J. Werner, H. Schulte and U. Dickhöfer</i>	Development and implementation of machine vision techniques to measure eye temperature, heart rate and respiratory rate in cattle <i>M. Jorquera-Chavez, S. Fuentes, E.C. Jongman, R. D. Warner and F. R. Dunshea</i>
15:00	A decision support system for energy use on dairy farms <i>P. Shine, M. Breen, J. Upton, A. O'Donovan and M. D. Murphy</i>	Development of a predictive model to identify the day of lambing in extensive sheep systems using autonomous Global Navigation Satellite System (GNSS) <i>E. S. Fogarty, G. Cronin, D. Swain, L. Moraes and M. Trotter</i>	Considering pre-processing of accelerometer signal recorded with sensor fixed on dairy cows is a way to improve the classification of behaviours <i>L. Riaboff, S. Aubin, N. Bédère, S. Couvreur, A. Madouasse, E. Goumand, A. Chauvin and G. Plantier</i>
15:15	A methodology for daily analysis of AMS data providing herd characterization and segmentation <i>S. Benni, F. Bonora, P. Tassinari, and D. Torreggiani</i>	Precision livestock farming: National Institute of Food and Agriculture contributions and opportunities <i>A. Van Goor, P. Chitnis, and C. Kirk Baer</i>	Use of a 3D imaging device to model the complete shape of dairy cattle and measure new morphological phenotypes <i>C. Allain, A. Caillot, L. Depuille, P. Faverdin, J. M. Delouard, L. Delattre, T. Luginbuhl, J. Lassalas and Y. Le Cozler</i>



## Scientific Sessions – Theatre Presentations

### Tuesday 27 August: 16:00 - 17:30

Session	Parallel Session 4: PLF data and its exploitation for solutions and decision-making (2)	Parallel Session 5: PLF technology for grass management	Parallel Session 6: PLF technology for milking of dairy animals
Location	Kane Building, Room G2	Location: Kane Building, Room G18	Location: Kane Building, Room G19
Time	Presentation Details		
16:00	C.O.W. - Precision in identifying the performance of your dairy cows <i>M.M. Kelleher, P. Owens, K. Downing, D. O’Riordan, E. Kennedy and R. Evans</i>	Improved estimation of grassland biomass using machine learning and satellite data <i>R. Marwaha, F. Cawkwell, D. Hennessy and S. Green</i>	Prospects for precision milking management in automatic milking systems <i>D. Reinemann, M. Zucali, V. Inzaghi, P. Thompson, J. Penry, P. S. Boloña and J. Upton</i>
16:15	Using a Data Lake Stack in Animal Sciences <i>D. Schokker, I. N. Athanasiadis, B. Visser, R. F. Veerkamp and C. Kamphuis</i>	Development of automata to improve individual management of health in pig production <i>Y. Rousselière, A. Hemonic, J. Thomas and M. Marcon</i>	Effect of changing teatcup removal and vacuum settings on milking efficiency of an automatic milking system <i>J. Upton, P. Silva Bolona and D.J. Reinemann</i>
16:30	Interactive Insight in Big Livestock Data <i>R. Snijders, A.P.J. de Jong, T. Albers, B.D. van der Waaij and M.R. Vonder</i>	How accurate is the Grasshopper® system in measuring dry matter quantity of Swiss and Danish grassland? <i>L. Hart, F. Oudshoorn, R. Latsch and C. Umstatter</i>	Effect of teatcup removal setting on milking efficiency and udder health in a pasture based AMS <i>P. Silva Boloña, J. Upton and D.J. Reinemann</i>



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Location	Kane Building, Room G2	Location: Kane Building, Room G18	Location: Kane Building, Room G19
Time	Presentation Details		
16:45	Modelling restricted feeding conditions on cow's feeding behaviour on pasture-based milk production systems to develop a Decision Support System <i>A. Shafiullah, J. Werner, E. Kennedy, L. Leso, B. O'Brien and C. Umstätter</i>	Dry matter yield evaluation of grass varieties on commercial farms <i>M. O'Donovan, N. Byrne, A. Geogehan and M. O'Leary</i>	A new method of measuring liner overpressure <i>P. Thompson, A. Dzidic, G. Mein, J. Penry, S. Sanford, A. Squitieri and D. Reinemann</i>
17:00	Impact of broiler behaviour on key production indices <i>T. Van Hertem, K. De Baere, L. Carpentier, A. Peña Fernández, T. Norton, S. Cardinaels, J. Zoons and E. Vranken</i>	A preliminary near infrared spectroscopy calibration for the prediction of un-dried fresh grass quality <i>D.J. Murphy, B. O'Brien, M. O'Donovan, T. Condon, A. Claffey and M.D. Murphy</i>	Predicting somatic cell counts in an automatic milking rotary using conductivity and generalized additive models <i>D. Anglart, C. Hallén-Sandgren and U. Emanuelson</i>
17:15	Evaluating rumen temperature during the pre-slaughter phase as a predictor for meat quality <i>N. Rutherford, F. Lively, and G. Arnott</i>	Evaluation of remote sensing technologies and cloud services to support grassland management <i>J. Kaivosoja, O. Niemeläinen, R. Näsi, R. Burke, T. McCarthy, B. O'Brien, D. Murphy, M. Murphy, F. Oudshoorn, L. Hart, K. Umstätter and E. Honkavaara</i>	At-market sensor technologies to develop proxies for resilience and efficiency in dairy cows <i>W. Ouweltjes, Y. de Haas, and C. Kamphuis</i>



## Scientific Sessions – Theatre Presentations

Wednesday 28 August 11:00 - 13:00

Session	Parallel Session 7: PLF product development, optimization and testing in field conditions (1)	Parallel Session 8: Monitoring animal health and behaviour	Parallel Session 9: Performance and welfare of dairy animals (1)
Location	Kane Building, Room G2	Location: Kane Building, Room G18	Location: Kane Building, Room G19
Time	Presentation Details		
11:00	PLF technology and real-time monitoring should improve welfare in extensive systems, but does the duty of care change and require modification of the welfare guidelines for livestock keepers? <i>A. Waterhouse</i>	Assessing feasibility of using depth images to acquire body condition score of sows <i>C.F.S. Condotta, T. M. Brown-Brandl, L.A. Rempel, J.R. Miles, A.J. Cross, G.A. Rohrer and K.O. Silva-Miranda</i>	Social acceptance of digital livestock farming technologies: the dairy sector <i>J. Pfeiffer, A. Gabriel and M. Gandorfer</i>
11:15	Predicting grass growth on farm, utilisation of the MoSt Grass Growth model <i>E. Ruelle and D. Hennessy</i>	Monitoring pig behaviour by RFID registrations <i>R.M. de Mol, P.H. Hogewerf, R.G.J.A. Verheijen, N.C.P.M.M. Dirx and J.B. van der Fels</i>	Interactive comparison tool for management of reproduction based on pregnancy rate <i>L. Krpáľková, S. Burns, N. O' Mahony, A. Carvalho, S. Campbell, G. Velasco-Hernandez and J. Walsh</i>
11:30	Can a new electronic warning system prevent collisions between vehicles and semi-domestic reindeer? <i>I. Hansen, S.M. Eilertsen, G.H.M. Jørgensen and J. Karlsson</i>	Monitoring of approaching farrowing in pens with possibility of temporary crating on the basis of ear tag acceleration data <i>M. Oczak, K. Maschat and J. Baumgartner</i>	Evaluation of the sensor system SMARTBOW for detecting oestrus in confined dairy cows <i>V. Schweinzer, L. Lidauer, A. Berger, F. Kickingner, M. Öhlschuster, W. Auer, M. Drillich and Michael Iwersen</i>



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Location	Kane Building, Room G2	Location: Kane Building, Room G18	Location: Kane Building, Room G19
Time	Presentation Details		
11:45	Developing a machine vision system for detecting laying hens <i>O. Geffen, Y. Yitzhaky, N. Barchilon, S. Druyan and I. Halachmi</i>	Use of Infra-Red Thermography to non-invasively assess neonatal piglet temperature <i>K. O'Driscoll and O. Schmitt</i>	Calving alert system – a helping technique or a welfare issue? <i>A.K. Lind and C. Lindahl</i>
12:00	Field trial to demonstrate the Intelligent Dairy Assistant (IDA) system on dairy farms <i>C.J. Rutten, N. Molenaar, P. Hogewerf, S.P. van Gosliga and C. Lokhorst</i>	Animal welfare monitoring by real-time physiological signals <i>P. Joosen, T. Norton, J. Marchant-Ford, D. Berckmans</i>	Analysis of the internal environment of the domestic duck house and assessment of moisture generation from the litter <i>Sang-yeon Lee, Rack-woo Kim, Uk-hyeon Yeo, Jun-kyu Kim, Sol-moe Kang and In-bok Lee</i>
12:15	An automatic data acquisition system for acquiring training data for a deep learning algorithm for individual cow intake prediction <i>R. Bezen, Y. Edan and I. Halachmi</i>	Automatic Cattle Monitoring Systems for Precision Livestock Farming <i>N. O' Mahony, L. Krpalkova, S. Burns, J. Daly, E. Harty, D. Riordan and J. Walsh</i>	Is it possible to detect lame cows by analysing their walking sounds? <i>N. Volkmann, B.Kuling and N. Kemper</i>
12:30	Technological tools for infection detection: Case studies with the SOMO Respiratory Distress Monitor in Belgian Pig Farms <i>Z.Y. Cui, W. Buyens, D. Berckmans, I. De Volder, I. Degezelle and E. Vranken</i>	Predicting the next life event of cows by applying deep learning on sequential and pictorial streaming data. <i>A. Liseune, D. Van den Poel and Miel Hostens</i>	Effect of administration of ketoprofen on locomotion characteristics and weight distribution in cattle with limb pathologies <i>M. Alsaad, M. Fadul, R. Deiss, E. Bucher and A. Steiner</i>



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Location	Kane Building, Room G2	Location: Kane Building, Room G18	Location: Kane Building, Room G19
Time	Presentation Details		
12:45	Effect of environmental enrichment on the surface temperature and skin lesion score during transportation of pigs <i>C. Crone, R.A. Martins, I.C.C. Lippi, F.R. Caldara, G.F. Oliveira, R.G. Garcia, C.A. Calado, A. Bevilacqua and H.B. Morais</i>	Providing real-time access to the ICBF Database using Restful APIs. <i>C. Vigors</i>	Effect of body posture on respiration rate, heart rate and rectal temperature of dairy cows under thermoneutral conditions <i>S. Pinto, G. Hoffmann, C. Ammon, S. Strutzke and T. Amon</i>



## Scientific Sessions – Theatre Presentations

Wednesday 28 August 14:00 – 15:30

Session	Parallel Session 10: Controlling environment for Poultry systems	Parallel Session 11: Location and tracking of animal movement (1)	Parallel Session 12: PLF technology for Pigs
Location	Kane Building, Room G18	Location: Kane Building, Room G02	Location: Kane Building, Room G19
Time	Presentation Details		
14:00	RoboChick; an autonomous roving platform for data collection in poultry buildings, operational parameters and bird behaviour <i>T.G.M. Demmers, I.C. Dennis, P. Norman, M. Butler, D. Clare</i>	Automated phenotyping of swine behavior using image analysis: A systematic review <i>K. Wurtz, I. Camerlink, R. D'Eath, A. Peña Fernández, J. Siegford and J. Steibel</i>	Determining the optimal placement and configuration of an audio-based sensor platform to enable improved detection and characterization of clinical respiratory episodes in large growing pig airspaces and sites <i>D. Polson, S. Playter, D. Berckmans, Z. Cui and B. Quinn</i>
14:15	Scratch the surface: histopathology of foot pad dermatitis in turkeys <i>J. Stracke, D. Klotz, P. Wohlsein, S. Döhring, R. Günther, B. Spindler and N. Kemp</i>	Real-time individual pig tracking and behavioural metrics collection with affordable security cameras <i>J. Labrecque, F. Gouineau, and J. Rivest</i>	Evaluation of a technology platform utilizing low power Bluetooth beacons, sensors and a cloud-based platform to concurrently measure near-real time movement of animals, assets and personnel throughout a large pig production network <i>D. Polson, T. Bates, G. Hartsook, E. Lowe, X. de Paz Solanes</i>





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Location	Kane Building, Room G18	Location: Kane Building, Room G02	Location: Kane Building, Room G19
Time	Presentation Details		
14:30	<p>ChickenBoy: a farmer assistance system for animal welfare and farm productivity  <i>J. Hartung, H. Lehr, D. Rosés, M. Mergeay and J. van den Bossche</i></p>	<p>Developing sensor technologies to inform breeding approaches to reduce damaging behaviour in laying hens and pigs: The GroupHouseNet approach  <i>T.B. Rodenburg, J. Bennewitz, E.N. de Haas, L. Košťál, K. Pichová, D. Piette, J. Tetens, B. Visser, B. De Klerk, M. van der Sluis, L.E. van der Zande, J. Siegford, M. Toscano, T. Norton, O. Guzhva and E.D. Ellen</i></p>	<p>Evaluation of low-cost depth cameras for precision livestock farming applications  <i>I.C.F.S. Condotta, T.M. Brown-Brandl, J. P. Stinn, and K.O. Silva-Miranda</i></p>
14:45	<p>Effects of ammonia concentration on production parameters and blood profiles of laying hens exposed to a chronic heat stress  <i>D. Li, Y. Wang, B. Li, G. Yan and Z. Shi</i></p>	<p>Defining resilient pigs after a Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) challenge using activity and feeding data from accelerometers  <i>L.E. van der Zande, J.R. Dunkelberger, T.B. Rodenburg, P.K. Mathur, W.J. Cairns, M.C. Keyes, J.M. Eggert, E.A. Little, S.A. Dee, E.F. Knol</i></p>	<p>Predicting tail biting and diarrhea amongst growing pigs from drinking patterns: An evaluation of the predictive performances of volume and drinking frequencies  <i>K.N. Dominiak, J. Hindsborg and A.R. Kristensen</i></p>



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Location	Kane Building, Room G18	Location: Kane Building, Room G02	Location: Kane Building, Room G19
Time	Presentation Details		
15:00	<p>Measuring carbon dioxide concentrations in broiler houses.  <i>P. Créach, P. Robin, G. Amand, A. Keita, C. Nicolas, E. Pigache, J.P. Prigent, M. Lecomte, M. Tavares, P. Galliot and N. Rousset</i></p>	<p>Validation of the localisation accuracy of the SMARTBOW ear tag in a pasture based milking system  <i>D.T. Byrne, B. O'Brien, N. O'Leary, A. McDonagh, L. Lidauer, T. Kassebacher, and L. Shaloo</i></p>	<p>Relationship between automatic records of pig respiratory distress on farm and the prevalence of lung lesions at slaughter  <i>J.C. Pessoa, M. Rodrigues da Costa, E. G. Manzanilla, T. Norton, C. McAloon and L. Boyle</i></p>
15:15	<p>Thermal rearing environment affects heat emission by laying hens  <i>R.G. Garcia, E.R.S. Gandra, M.F.C. Barbarelli, F.R. Caldara, C.M. Komiyama, I.A. Naas, G. Felix</i></p>	<p>Comparison of architectures and training strategies for convolutional neural networks intended for location-specific counting of growing pigs  <i>D. Børge Jensen, M. L. Vestbjerg Larsen and L.J. Pedersen</i></p>	<p>Carcass quality traits of fattening pigs estimated using 3D image technology  <i>A. Peña Fernández, T. Norton, E. Vranken and D. Berckmans</i></p>



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Session	Parallel Session 13: PLF product development, optimization and testing in field conditions (2)	Parallel Session 14: Location and tracking of animal movement (2)	Parallel Session 15: Performance and welfare of dairy animals (2)
Location	Kane Building, Room G18	Location: Kane Building, Room G02	Location: Kane Building, Room G19
Time	Presentation Details		
16:00	FAIRshare: Co-creating an online platform for the European farm advisory community to access and share digital advisory tools and services <i>T. Kelly, S. Fountas, J. To3, J.J. Magán, V. Bisevac, K. Piccart, S. Mouseti and K. Connolly</i>	Developing new training cues for virtual fencing <i>C. Umstatter, R. Pawlitzek, R. Pickhardt and A. Kunz</i>	Monitoring dairy cow behaviour to assess the effect of the housing and management system on animal welfare <i>G. Mattachini, E. Tullo, E. Riva, A. Finzi, G. Provolo and M. Guarino</i>
16:15	Agriculture 4.0: Rapid, Label-free Nano-electrochemical based Detection of Bovine Viral Diarrhoea virus (BVDV) and antibody (BVDAb) in serum <i>N. Creedon, R. Sayers, B. O’Sullivan, E. Kennedy, P. Lovera and A. O’Riordan</i>	Localization and accelerometer sensors for the detection of oestrus in dairy cattle <i>S. Benaissa, F.A.M. Tuytens, J. Trogh, D. Plets, L. Martens, L. Vandaele, W. Joseph, and B. Sonck</i> (Pre-recorded)	Random forest regression for estimating dry matter intake of grazing dairy cows <i>L. Leso, J. Werner, D. McSweeney, E. Kennedy, A. Geoghegan and L. Shalloo</i>
16:30	Evaluation of an audio-based sensor platform to classify patterns of clinical respiratory episodes in large growing pig populations <i>D. Polson, S. Playter, D. Berckmans, Z. Cui and B. Quinn</i>	Goats monitoring at the pasture scale combining convolutional neural network and time-lapse cameras <i>M. Bonneau, J-A Vayssade, W. Troupe and R. Arquet</i>	Comparison of three gradients of grazed grass in dairy cows’ diet in terms of environmental and zootechnical performances <i>F. Lessire and I. Dufrasne</i>



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16:45	First results of a practical validation of signal feeding - an automated operant conditioning in sows <i>C. Manteuffel and B. Puppe</i>	Monitoring feeding behaviour of dairy cows using UHF-RFID <i>F. Adrion, M. Keller and C. Umstatter</i>	Cooling regime timing set by bolus sensor mitigated heat stress in dairy cows <i>H. Levit, S. Pinto, Thomas Amon, E. Gershon, A. K. Elazary, V. Bloch, Y. Ben Meir, Y. Fortnik, S. Jacoby, A. Arnin, J. Miron and I. Halachmi</i>