

## EU-PLF

# Deliverable 7.3

## Timely publication of all research results in appropriate scientific, technical journals and others

**Project acronym:** *EU-PLF*  
**Project title:** *Bright Farm by Precision Livestock Farming*  
**Grant Agreement number:** *311825*  
**Coordinator:** *Daniel Berckmans*  
**Funding Scheme:** *FP7-KBBE.2012.1.1-02*

<b>Due date of deliverable:</b>	M48
<b>Actual submission date</b>	October 2016
<b>Start date of the project:</b>	November 1, 2012
<b>Project duration:</b>	4 years

<b>Work package:</b>	WP7
<b>Task(s)</b>	
<b>Lead beneficiary for this deliverable:</b>	EAAP
<b>Editor:</b>	Michel Bonneau
<b>Authors :</b>	Michel Bonneau, Rebecca Neilson
<b>Quality reviewer:</b>	Daniel Berckmans

Project co-funded by the European Commission within the Seventh Framework programme (2012)		
Dissemination level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

## List of publications from the EU-PLF project

### Journal publications (Published)

2016. D. JOHNSTON, D.A. KENNY, M. MCGEE, S.M. WATERS, A.K. KELLY and B. EARLEY. Electronic feeding behavioural data as indicators of health status in dairy calves. Irish Journal of Agricultural and Food Research - DOI:10.1515/ijafr-2016-0016 IJAfr 55(2)

2016. J. VANDERMEULEN, C. BAHR, D. JOHNSTON, B. EARLEY, E.TULLO, I. FONTANA, M. GUARINO, V. EXADAKTYLOS, D. BERCKMANS. (2016) Early recognition of bovine respiratory disease in calves using automated continuous monitoring of cough sounds. Computers and Electronics in Agriculture. Volume 1: 15-26. <http://dx.doi.org/10.1016/j.compag.2016.07.014>

2016. D. JOHNSTON, B. EARLEY, P. CORMICAN, D.A. KENNY, M. MCCABE, A.K. KELLY, M. MCGEE, S.M. WATERS. (2016) Characterisation of the whole blood mRNA transcriptome in Holstein-Friesian and Jersey calves in response to gradual weaning. PLoS One, 11(8), doi: 10.1371/journal.pone.0159707

2016. E. TULLO, I. FONTANA, D. GOTTARDO, K.H. SLOTH and M. GUARINO. Validation of a commercial system for the continuous and automated monitoring of dairy cows activity. Journal of Dairy Science, 99, 7489-7494. doi: 10.3168/jds.2016-11014

2016. I. HALACHMI, Y. BEN MEIR and E. MALTZ. Feeding behavior improves prediction of dairy cow voluntary feed intake but cannot serve as the sole indicator. Animal, 10,1501-1506. doi: 10.1017/S1751731115001809

2016. FONTANA I., TULLO, E., SCRASE A. BUTTERWORTH A. Vocalisation sound pattern identification in young broiler chickens. Animal, 10, 1567-1574, doi: 10.1017/S1751731115001408

2016. JOHNSTON, D., KENNY, D.A., KELLY, A.K., MCCABE, M., MCGEE, M., WATERS, S.M. & EARLEY, B. Characterisation of haematological profiles and leukocyte relative gene expression levels in artificially reared Holstein-Friesian and Jersey bull calves undergoing gradual weaning. Animal, 10, 1547-56. doi: 10.1017/S1751731115002438

2015. J. VANDERMEULEN, C. BAHR, E. TULLO, I. FONTANA, S. OTT, M. KASHIHA, M. GUARINO, C.P.H. MOONS, F.A.M. TUYTTENS, T. A. NIEWOLD, D. BERCKMANS. Discerning pig screams in production environments. PlosOne, <http://dx.doi.org/10.1371/journal.pone.0123111>

2015. FONTANA I., TULLO E., BUTTERWORTH A., GUARINO M. An innovative approach to predict the growth in intensive poultry farming. Computer and electronics in agriculture, 119, 178-183, <http://dx.doi.org/10.1016/j.compag.2015.10.001>

2012. BANHAZI, T. M., LEHR, H., BLACK, J.L., CRABTREE, H., SCHOFIELD, P., TSCHARKE, M. and D. BERCKMANS. (2012) Precision Livestock Farming: An international review of scientific and commercial aspects. (2012) International Journal of Agricultural and Biological Engineering, 5, 1-9, DOI: 10.3965/j.ijabe.20120503.00

## Journal publications (Accepted)

2016. DEMMERS T. G. M., YOUSSEF A. AND ROOIJAKKERS L. (2016) Monitoring and modelling dust concentration and animal activity in broiler houses. British Poultry Abstracts, in press

2016. GRAY, J.; T.M. BANHAZI, A. KIST (2016) Wireless Data Management System for Environmental Monitoring in Livestock Buildings Information Processing in Agriculture (Elsevier) (accepted)

2016. BERCKMANS, D., GUARINO, M. (2017). Editorial on Special Issue in Precision Livestock Farming. Animal Frontiers (in press)

2016. BERCKMANS, D. (2017). General introduction to precision livestock farming. Animal Frontiers (in press)

2016. NORTON, T., BERCKMANS, D. (2017). Developing Precision Livestock farming tools for Dairy Production. Animal Frontiers (in press)

2016. GUARINO, M. NORTON, T., BERCKMANS, D., VRANKEN, E., BERCKMANS, D. (2017) A blueprint for developing and applying precision livestock farming tools: a key output of the EU-PLF project. Animal Frontiers (in press)

2016. VRANKEN, E., BERCKMANS, D. (2017). Precision Livestock farming in Pig Production Animal Frontiers (in press)

2016. HARTUNG, J., BANHAZI, T., VRANKEN, E., GUARINO, M. (2017). European Farmers' experiences with Precision Livestock Farming. Animal Frontiers (in press)

## Conference publications

2016. PEÑA FERNÁNDEZ, A., VAN HERTEM, T., EXADAKTYLOS, V., NORTON, V., VRANKEN, E., BERCKMANS, D. (2016). Monitoring of broiler activity on commercial farms using camera-based technology. 2016 International Conference on Agricultural Engineering, CIGR-AgEng 2016, June 2016.

2016. NORTON, T., EXADAKTYLOS, V., VRANKEN, E., BERCKMANS, D., LEHR, H., VESSIER, I., BLOKHUIS, H., BERCKMANS, D. (2016). Implementation of Precision Livestock Farming (PLF) technology on EU farms: results from the EU-PLF project. International Conference on Agricultural Engineering, CIGR-AgEng 2016, June 2016.

2016. NORTON, T., BERCKMANS, D. (2016). Precision Livestock Farming: translating technology from the laboratory to the farm. International Congress and the XXVI International Congress of the Hungarian Association for Buiatrics, Budapest, Hungary

2016. BLACK, J., WILLIS, S. & BANHAZI, T. (2016). Estimation of Accuracy Needed for Live Weight and Feed Intake Measurements in Precision Livestock Farming Systems Using AusPig Simulation Software. In Asian Conference on Precision Livestock Farming (PLF-Asia 2016), Vol. 1, 38-44 (Eds G. Zhang, L. Zhao, C. Wang, W. Zheng, Q. Tong, D. Berckmans and K. Wang). Beijing, China: China Agricultural University

2016. WILLIS, S., BLACK, J. & BANHAZI, T. (2016). Estimation of Production Losses associated with Short Term Growth Rate Reduction and Sub-Optimal Thermal Conditions on Pig Farms Using AusPig Simulation Software. In Asian Conference on Precision Livestock Farming (PLF-Asia 2016), Vol. 1, 45-52 (Eds G. Zhang, L. Zhao, C. Wang, W. Zheng, Q. Tong, D. Berckmans and K. Wang). Beijing, China: China Agricultural University

2016. BLOKHUIS H.J. Assessment of fearfulness and gaitscore in commercial broiler flocks using automatic monitoring of activity. Welfare Quality Network Seminar, November 25, 2016. Helsinki, Finland

2016. VAN HERTEM, T., LAGUE, S., ROOIJAKKERS, L., VRANKEN, E. (2016). Towards a sustainable meat production with precision livestock farming. In Deiters, J. (Ed.), Rickert, U. (Ed.), Schiefer, G. (Ed.) Proceedings in system dynamics and innovation in food networks 2016. pp. 357-362. IGLs, Austria, 15-19 February 2016. doi: 10.18461/pfsd.2016.1638 (ISSN: 2194-511X)

2016. BERCKMANS D., NORTON T. Precision Livestock Farming: Examples for Poultry. The XXV world's Poultry congress, September 5-9, 2016 Beijing, China.

2016. A. PEÑA FERNÁNDEZ, T. NORTON, V. EXADAKTYLOS, E. VRANKEN, D. BERCKMANS. Activity and occupation analyses as broiler behaviour and welfare indicators. The XXV World's Poultry Congress, September 5-9, 2016 Beijing, China

2016. BERCKMANS D. Experiences with Precision Livestock Farming in European Farms. 1<sup>st</sup> Asian Conference on Precision Livestock Farming, September 9-11, 2016 Beijing, China.

2016. L. CARPENTIER, M. HEMERYCK, J. WOUTERS, D. BERCKMANS, E. VRANKEN, T. NORTON, D. BERCKMANS. Economical Case Study of the SOMO Respiratory Distress Monitor in Pigs. 1<sup>st</sup> Asian Conference on Precision Livestock Farming, September 9-11, 2016 Beijing, China

2016. A. PEÑA FERNÁNDEZ, E. TULLO, T. VAN HERTEM, V. EXADAKTYLOS, T. NORTON, E. VRANKEN, M. GUARINO, D. BERCKMANS. Relation of broilers' activity and occupation pattern deviations to their welfare and health. 1<sup>st</sup> Asian Conference on Precision Livestock Farming, September 9-11, 2016 Beijing, China

2016. E. TULLO, I. FONTANA, A. PEÑA FERNÁNDEZ, E. VRANKEN, D. BERCKMANS, M. GUARINO. Automated evaluation of the risk factor associated with footpad dermatitis and hock burns in intensive poultry farming. 1<sup>st</sup> Asian Conference on Precision Livestock Farming, September 9-11, 2016 Beijing, China

2016. A. PEÑA FERNÁNDEZ, T. NORTON, V. EXADAKTYLOS, E. VRANKEN, D. BERCKMANS. Activity and occupation analyses as indicators of broiler welfare risk. Annual meeting of the European Federation of Animal Science (EAAP), 29 August – 02 September, 2016 Belfast, United Kingdom

2016. A. PEÑA FERNÁNDEZ, T. VAN HERTEM, V. EXADAKTYLOS, T. NORTON, E. VRANKEN, D. BERCKMANS. Monitoring of litter quality in broiler commercial farms using camera-based technology. In American Society of Agricultural and Biological Engineers. ASABE annual international meeting, July 17-20, 2016 Orlando, USA

2016. BERCKMANS D. Value Creation through Precision Livestock Farming systems. Conference on State-of-the-Art Technology to Drive Agriculture Productivity in the Next Quarter of the Century, June 28-30, 2016 Tokyo, Japan.

2016. A. PEÑA FERNÁNDEZ, T. NORTON, V. EXADAKTYLOS, E. VRANKEN, D. BERCKMANS. Analysis of behavioural patterns in broilers using camera-based technology. International Conference on Agricultural Engineering, CIGR-AgEng 2016, June 26-29, 2016 Aarhus, Denmark

2016. A. Peña Fernández, K. Helle Sloth, T. Norton, S. Klimpel, V. Exadaktylos, D. Berckmans. Monitoring of behavioural activities and milk yield of dairy cows as an indicator of health status. International Conference on Agricultural Engineering, CIGR-AgEng 2016, June 26-29, 2016 Aarhus, Denmark

2016. L. CARPENTIER, T. NORTON, V. EXADAKTYLOS, M. HEMERYCK, D. BERCKMANS, B. EARLEY, I. FONTANA, E. TULLO, M. GUARINO, D. BERCKMANS. The Calf Cough Monitor: Preliminary Investigation of Classification in Real-Life Farm Conditions. International Conference on Agricultural Engineering, CIGR-AgEng 2016, June 26-29, 2016 Aarhus, Denmark.

2016. A. PEÑA FERNÁNDEZ, T. VAN HERTEM, T. NORTON, V. EXADAKTYLOS, E. VRANKEN, D. BERCKMANS. Activity and distribution time-series analyses for monitoring broiler behaviour and welfare. ITISE 2016 International work-conference on Time Series, June 27-29, 2016 Granada, Spain

2016. NORTON T., BERCKMANS D. Novel Precision Dairy Farming Technologies. Precision Dairy Farming Conference, June 21-23 Leeuwarden, The Netherlands

2016. TULLO E., FONTANA I., COLETTI C., SLOTH K.H. PEÑA FERNÁNDEZ A., GUARINO M. Effect of feeding out strategy on feeding behaviour. Precision Dairy Farming Conference, June 21-23 Leeuwarden, The Netherlands

2016. SLOTH K.H., FREDERIKSEN D., COLETTI C., TULLO E., FONTANA I., GUARINO M. Effect of changes in feeding out strategy and feed pushes on cow time budgets and barn-area usage. Precision Dairy Farming Conference, June 21-23 Leeuwarden, The Netherlands

2016. SLOTH K.H., MIALON M.M., VEISSIER I. Changes in cow time budgets due to clinical mastitis and lameness disorders. Precision Dairy Farming Conference, June 21-23 Leeuwarden, The Netherlands

2015. D. BERCKMANS. Experiences with Precision Livestock Farming in European Farms. International Symposium on Animal Environment and Welfare, October 23–26, 2015, Chongqing, China.

2015. D. BERCKMANS, M. HEMERYCK, D. BERCKMANS, E. VRANKEN, T. VAN WATERSCHOOT. Animal Sound...Talks! Real-time Sound Analysis for Health Monitoring in Livestock. International Symposium on Animal Environment and Welfare, October 23–26, 2015, Chongqing, China.

2015. BERCKMANS, D. Smart farming for Europe: value creation through precision livestock farming. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 119-134. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_1.2](http://dx.doi.org/10.3920/978-90-8686-815-5_1.2)

2015. T. VAN HERTEM, S. VIAZZI, A. SCHLAGETER-TELLO, C. BAHR, M. STEENSELS, C.E.B. ROMANINI, C. LOKHORST, E. MALTZ, I. HALACHMI, D. BERCKMANS. Risk factors for system performance of an automatic 3D vision locomotion monitor for cows. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 45-54. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_2.2](http://dx.doi.org/10.3920/978-90-8686-815-5_2.2)

2015. I. HALACHMI, A. SCHLAGETER TELLO, A. PEÑA FERNÁNDEZ, T. VAN HERTEM, V. SIBONY, S. WEYL-FEINSTEIN, A. VERBRUGGE, M. BONNEAU, R. NEILSON. Discussion: PLF applications of automatic lameness detection. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 71-76. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_2.5](http://dx.doi.org/10.3920/978-90-8686-815-5_2.5)

2015. C. KAMPHUIS, W. STEENEVELD, H. HOGVEEN. Economic modelling to evaluate the benefits of precision livestock farming technologies. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 87-94. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_3.2](http://dx.doi.org/10.3920/978-90-8686-815-5_3.2)

2015. H. LEHR, J. VAN DEN BOSSCHE, M. MERGEAY, D. ROSÉS. Developing SmartFarming entrepreneurship – II preparing precision livestock farming spin-offs. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 95-104. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_3.3](http://dx.doi.org/10.3920/978-90-8686-815-5_3.3)

2015. T. BANHAZI, E. VRANKEN, D. BERCKMANS, L. ROOIJAKKERS, D. BERCKMANS. Word of caution for technology providers: practical problems associated with large scale deployment of PLF technologies on commercial farms. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 105-112. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_3.4](http://dx.doi.org/10.3920/978-90-8686-815-5_3.4)

2015. I. HALACHMI, A. SCHLAGETER TELLO, A. PEÑA FERNÁNDEZ, T. VAN HERTEM, V. SIBONY, S. WEYL-FEINSTEIN, A. VERBRUGGE, M. BONNEAU, R. NEILSON. Discussion: how PLF delivers added value to farmers. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 113-118. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_3.5](http://dx.doi.org/10.3920/978-90-8686-815-5_3.5)

2015. JOHNSTON, D., KENNY, D.A., WATERS, S.M., MCCABE, M., KELLY, A.K., MCGEE, M. & EARLEY, B. The effect of gradual weaning on haematological profiles and leukocyte relative gene expression levels of Holstein-Friesian and Jersey bull calves. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 119-134. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_4.1](http://dx.doi.org/10.3920/978-90-8686-815-5_4.1)

2015. I. HALACHMI, A. SCHLAGETER TELLO, A. PEÑA FERNÁNDEZ, T. VAN HERTEM, V. SIBONY, S. WEYL-FEINSTEIN, A. VERBRUGGE, M. BONNEAU, R. NEILSON. Discussion: PLF in genetics & health of beef, calves and heifers. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 169-170. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_4.6](http://dx.doi.org/10.3920/978-90-8686-815-5_4.6).

2015. A. BUTTERWORTH, G. RICHARDS, E. VRANKEN. Facilitation of assessment of technical measures and its potential for implementation of the Broiler Directive (2007/43/EC). Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 171-182. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_5.1](http://dx.doi.org/10.3920/978-90-8686-815-5_5.1).

2015. I. FONTANA, E. TULLO, A. BUTTERWORTH. The use of vocalisation sounds to assess responses of broiler chicken to environmental variables. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 187-198. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_5.3](http://dx.doi.org/10.3920/978-90-8686-815-5_5.3)

2015. M. HEMERYCK, D. BERCKMANS. Pig cough monitoring in the EU-PLF project: first results. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 199-208. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_5.4](http://dx.doi.org/10.3920/978-90-8686-815-5_5.4)

2015. I. HALACHMI, A. SCHLAGETER TELLO, A. PEÑA FERNÁNDEZ, T. VAN HERTEM, V. SIBONY, S. WEYL-FEINSTEIN, A. VERBRUGGE, M. BONNEAU, R. NEILSON. Discussion: PLF for automatic detection of animal health – poultry and pigs. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 225-228. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_5.7](http://dx.doi.org/10.3920/978-90-8686-815-5_5.7)

2015. I. HALACHMI, A. SCHLAGETER TELLO, A. PEÑA FERNÁNDEZ, T. VAN HERTEM, V. SIBONY, S. WEYL-FEINSTEIN, A. VERBRUGGE, M. BONNEAU, R. NEILSON. Discussion: PLF for automatic detection of animal health in cows. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 257-262. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_6.4](http://dx.doi.org/10.3920/978-90-8686-815-5_6.4)

2015. I. HALACHMI, A. SCHLAGETER TELLO, A. PEÑA FERNÁNDEZ, T. VAN HERTEM, V. SIBONY, S. WEYL-FEINSTEIN, A. VERBRUGGE, M. BONNEAU, R. NEILSON. Discussion: PLF in milk quality and milk contents. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 287-290. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_7.4](http://dx.doi.org/10.3920/978-90-8686-815-5_7.4)

2015. I. HALACHMI, A. SCHLAGETER TELLO, A. PEÑA FERNÁNDEZ, T. VAN HERTEM, V. SIBONY, S. WEYL-FEINSTEIN, A. VERBRUGGE, M. BONNEAU, R. NEILSON. Discussion: rumen sensing, feed intake & precise feeding. Precision livestock farming applications: Making sense of sensors to support farm management; Ilan Halachmi Ed., 319-322. DOI: [http://dx.doi.org/10.3920/978-90-8686-815-5\\_8.5](http://dx.doi.org/10.3920/978-90-8686-815-5_8.5)

2015. I. FONTANA, E. TULLO, D. GOTTARDO, C. BAHR, S. VIAZZI, K.H. SLOTH, AND M. GUARINO. Validation of a commercial system for the continuous and automated monitoring of dairy cows activity. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 93-102.

2015. M-M. MIALON, K.H. SLOTH, I. VEISSIER. Real time positioning to detect early signs of welfare problems in cows. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p.115-118.

2015. M. HEMERYCK, D. BERCKMANS, E. VRANKEN, E. TULLO, I. FONTANA, M. GUARINO AND T. VAN WATERSCHOOT. The Pig Cough Monitor in the EU-PLF project: results and multimodal data analysis in two case studies. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 147-155.

2015. I. FONTANA, E. TULLO, A. PEÑA FERNÁNDEZ, D. BERCKMANS, E. KOENDERS, E. VRANKEN, J. MCKINSTRY, A. BUTTERWORTH, D. BERCKMANS, AND M. GUARINO. Frequency analysis of vocalisations in relation to the growth in broiler chicken. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 174-182.

2015. JOHANSSON, A., BLOKHUIS, H.J., BERCKMANS, D. AND BUTTERWORTH, A. Development of an automatic method to assess human-animal relationship in broilers at flock level. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 195-201.

2015. A. PEÑA FERNÁNDEZ, E. TULLO, V. EXADAKTYLOS, E. VRANKEN, M. GUARINO, D. BERCKMANS. Broiler activity and distribution as behaviour-based welfare indicators. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 208-217.

2015. T. M. BANHAZI AND A. BANHAZI. Long term monitoring of growth rates and environmental parameters on selected European pig farms. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 327-337.

2015. E. KOENDERS, L. ROOIJAKKERS, T. VAN HERTEM, E. VRANKEN, D. BERCKMANS, D. BERCKMANS. Towards the development of a practical visualisation tool for farmers and other stakeholders. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 513-522.

2015. DEMMERS T.G.M., TONG Q., ROOIJAKKERS L., and KOENDERS E. Monitoring dust concentration in broiler houses. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 525-530.

2015. K.H. SLOTH, D. FREDERIKSEN, AND S. KLIMPEL. Estimated cow time-budgets using a real time location system. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 740-748.

2015. K.H. SLOTH, D. FREDERIKSEN, AND S. KLIMPEL. Estrous induced changes in cow behavioral activities measured with RTLS. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 768-773.

2015. E. TULLO, I. FONTANA, A. PEÑA FERNANDEZ, D. BERCKMANS, E. KOENDERS, E. VRANKEN, S. N. BROWN, A. BUTTERWORTH, H. GUNNINK AND M. GUARINO. Risk factors for foot-pad dermatitis and hock burns in broiler chickens. 7<sup>th</sup> European conference on Precision Livestock Farming, Milano, Italy, 15-18 September 2015, p. 792-800.



2015. A. Peña Fernández, V. Exadaktylos, E. Vranken, D. Berckmans. Analysis of behavioural patterns in broilers using camera-based technology. 2015 ASABE Annual International Meeting 152190630, July 26-29, New Orleans, USA, doi:10.13031/aim.20152190630

2015. R. Neilson. EU-PLF: Bright Farm by Precision Livestock Farming. 4th FOODSEG Symposium, Rome, Italy, 23-24 April 2015.

2015. VANDERMEULEN, J., BAHR, C., TULLO, E., FONTANA, J., JOHNSTON, D., EARLEY, B., HEMERYCK, M., GUARINO, M., BERCKMANS, D. Use of an automated calf cough algorithm for the early detection of bovine respiratory disease. BSAS Annual Conference of the British Society of Animal Science (BSAS), Chester, UK, 14-15 April 2015

2015. JOHNSTON, D., KENNY, D.A., CORMICAN, P., MCGEE, M., WATERS, S.M., KELLY, A.K., MCCABE, M., B. EARLEY. A comparison of the whole blood mRNA transcriptome, between Holstein–Friesian and Jersey calves, preceding and succeeding gradual weaning. Proceedings of the Agricultural Research Forum, Tullamore, Ireland, 9-10 March 2015, ISBN: 978-1-84170-615-3, p.149.

2015. I. HALACHMI, Y. BEN MEIR, E. MALTZ, J. MIRON. Cow individual feed intake model based on monitoring feeding behaviour. The 2nd Dairy Care conference. Cordoba, Spain. March 3-4 2015

2014. JOHNSTON, D., KENNY, D.A., RUBIO CONTRERAS, R., WATERS, S.M., KELLY, A., MCGEE, M. and EARLEY, B. The effect of gradual weaning on haematological profiles in artificially reared Holstein-Friesian and Jersey calves fed different planes of nutrition. Proceedings of the Agricultural Research Forum, Tullamore, Ireland, 10-11 March 2014, ISBN: 978-1-84170-605-4, p 15.

2014. JOHNSTON, D., KENNY, D.A., RUBIO CONTRERAS, R., WATERS, S.M., MCCABE, M., KELLY, A.K., MCGEE, M. & EARLEY, B. The effect of gradual weaning on the relative expression levels of selected genes in the leukocyte environment of artificially reared Holstein-Friesian and Jersey calves. Proceedings of the Agricultural Research Forum, Tullamore, Ireland, 10-11 March 2014, ISBN: 978-1-84170-605-4, p 21.

2014. FONTANA, I., TULLO, E., BUTTERWORTH, A. and GUARINO, M. (2014). Broiler Vocalisation to Predict the Growth. Proceedings of Measuring Behavior 2014, Wageningen, The Netherlands, August 27-29, 2014, Editors: A.J. Spink, L.W.S. Loijens, M. Woloszynowska-Fraser & L.P.J.J. Noldus.

2013. VANDERMEULEN, J., DECRÉ, W., BERCKMANS, D., EXADAKTYLOS, V., BAHR, C., and BERCKMANS, D. The Pig Cough Monitor: from research topic to commercial product. Joint European Conference on Precision Livestock Farming, Leuven, Belgium, 10-12 September 2013, ISBN: 978-90-8826-333-0, p. 717–723.

2013. JOHANSSON, A., BLOKHUIS, H.J. and BERCKMANS, D. Assessment of human-animal relationship in broilers with automatic recording of activity. Joint European Conference on Precision Livestock Farming, Leuven, Belgium, 10-12 September 2013, ISBN: 978-90-8826-333-0, p. 937-942.



2013. BLACK J.L. AND BANHAZI T.M. Economic and social advantages from Precision Livestock Farming in the pig industry. Joint European Conference on Precision Livestock Farming, Leuven, Belgium, 10-12 September 2013, ISBN: 978-90-8826-333-0, p. 199-208.

2013. HOGVEEN H., AND STEENEVELD W. Essential steps in the development of PLF systems for the dairy sector. Joint European Conference on Precision Livestock Farming, Leuven, Belgium, 10-12 September 2013, ISBN: 978-90-8826-333-0, p. 47-55.

2013. LEHR H., VAN DEN BOSSCHE J., MERGEAY M. and ROSES D. Developing SmartFarming entrepreneurship – first results from EU-PLF. Joint European Conference on Precision Livestock Farming, Leuven, Belgium, 10-12 September 2013, ISBN: 978-90-8826-333-0, p. 175-184.



The research leading to these results has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 311825.

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