

TRACKRECORD

Name: Sander Lourens, PhD
Division: Wageningen University Livestock Research
Cluster: Animal Health & Welfare
Job Title:

- **Researcher Breeder- hatchery – chick quality specialist**
- **International hatchery consultant**

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Expertise

Incubation research, embryology, hatchery management, climate conditioning, poultry health (breeders, broilers, layers, turkeys, ducks)
 On-site and on-line consultant for integrated breeder – hatchery - broiler and layer operations in Holland, Germany, Denmark, Sweden, Norway, Iceland, Poland, Canada, Mexico, Ethiopia, Ghana, Columbia, New Zealand, Indonesia and India.

Experience to develop and present custom made seminars / presentations about incubation and brooding for an international audience. The interaction with participants proved to bring vivid discussions about how to improve hatchability, chick quality and performance. It will combine theoretical sessions with practical break-outs with a high hands-on experience.

Incubation

- Egg storage conditions and pre-warming eggs
- Incubation temperature
- Causes of mortality
- Hatch performance and chicken quality
- Early feeding
- Biosecurity
- Maintaining and evaluating egg and chick quality
- Ventilation requirements for setters and hatchers

Brooding

- Storage and transport of chickens to the farm
- Temperature preferences
- Brooding and behavior of young chickens
- Strategies to monitor and improve technical results.

Career, experience

1990 – 1996: MSc Fish culture and Fisheries at Wageningen University
 1997 – 1998: Plukon Poultry b.v. Wezep – Salmonella and campylobacter monitoring program
 1998 – 2003: Center for Applied Poultry Research “Het Spelderholt” in Beekbergen, The Netherlands
 2003 – 2009: Animal Sciences Group of Wageningen University and Research Center in Lelystad, The Netherlands
 2008: PhD degree at Wageningen University.
 2009 – recent: Livestock Research at Wageningen University and Research Center in Lelystad, The Netherlands

Networks, working groups, (inter)national committees

Incubation and Fertility Research Group
 Fyto-V project team alternative treatments against common poultry diseases
 Adaptation Physiology Group Wageningen University
 WPSA (World Poultry Science Organisation)
 CAWA (Centre for Animal Welfare and Adaptation)
 Organisation of The 5th Workshop on Fundamental Physiology and Perinatal Development in Poultry in Wageningen
 Guest researcher at the Poultry Research Unit of the University of Alberta, Edmonton, Canada
 Guidelines working group “Optimal start for young chicks” KNMvD (Koninklijke Nederlandse Maatschappij voor Dierenartsen; 2014 – 2015)
 Dutch-Indonesian Programme on Food Security – Broiler Farming

Important projects

Title	Short description of the project	Role within project
1. Effects of breeder stocking density during the rearing and production period on behaviour and technical results.	Males and female broiler breeders were kept at different stocking densities during rearing and in the production period to study behaviour and technical results	Researcher
2. The control of eggshell temperature during incubation	Measurements in practice and experiments show the importance to control eggshell temperature during incubation for best hatchability, chick quality and subsequent performance.	Project leader / researcher
3. Preserving hatchability and broiler performance in long stored eggs in practice.	Installation of incubation equipment at a breeder farm to warm up hatching eggs before storage. Consequently, effects on hatchability and broiler performance and hatch results were evaluated.	Project leader / researcher
4. Dutch-Indonesian Programme on Food	Project funded by Dutch / Indonesian government to improve	Project leader / researcher

Security – Broiler Farming	housing conditions and management for better broiler results. Collection of technical and economic data at broiler farms, implementation of innovations and development of a modern research farm to test innovative ideas that improve health and performance of broilers under Indonesian conditions.	
5. Zootechnical and veterinary factors at breeder level: effects on broiler mortality.	Zootechnical and veterinary factors at breeder level are described that can affect broiler mortality. Recommendations were made with regard to parent stock management, broiler management, transparency throughout the broiler chain, control of vaccinations, disease monitoring, early warning, biosecurity and hygiene	Project leader / researcher
6. New brooding systems for broilers and turkeys: Hatchbrood, and Patio system.	The poultry industry gets more aware that optimal brooding of young chicks will benefit performance and economic returns. Several projects were carried out to investigate the optimal brooding temperature, feeding- and light regime for best performance in broilers and turkeys.	Project leader / researcher
7. Farm hatching as new innovation to improve broiler welfare and production results	Eggs are incubated in the hatchery and candled and transferred to the broiler farm to hatch. Chicks have immediate access to feed and water and are not exposed to transport stress.	Project leader / researcher
8. Linking information between breeder farms, hatchery and broiler farmers and the use of standardized data collection protocols	Aim of this project was to set up a standardized data collection protocol to facilitate information exchange between breeder farms, hatchery and broiler farmers to increase overall performance.	Researcher

Motivation

My special interest lies in the interaction between science and practice: sharing theoretical and scientific knowledge and their value and applicability to people in practice. Working in the field of animal health, it is necessary to understand different disciplines as veterinary practice, animal biology and behaviour, housing equipment, climate control, etc. More important, it is necessary to speak both the language of scientists and farmers and to realize that farmers have to earn an income from the technologies offered by others.

LIST OF PUBLICATIONS (see also www.library.wur.nl/way)

PhD thesis

Lourens, A. 2008. Embryo temperature during incubation: practice and theory. PhD thesis, Wageningen University, The Netherlands
With references – With summary in English and Dutch. ISBN: 978-90-8585-258-2. (<http://edepot.wur.nl/122079>).

Papers in refereed journals

- Lourens, A., H. van den Brand, R. Meijerhof and B. Kemp. 2005. Effect of eggshell temperature during incubation on embryo development, hatchability and post-hatch development. *Poult. Sci.* 84:914-920.
- Lourens, A. H. van den Brand, M.J.W. Heetkamp, R. Meijerhof and B. Kemp. 2006. Metabolic responses of chick embryos to short term temperature fluctuations. *Poult. Sci.* 85:1081-1086.
- Lourens, A., R. Molenaar, H. van den Brand, M.J.W. Heetkamp, R. Meijerhof, and B. Kemp. 2006. Effect of egg size on heat production and the transition of energy from egg to hatchling. *Poult. Sci.* 85:770-776.
- Joseph, N.S., A. Lourens and E.T. Moran. 2006. The effects of sub-optimal eggshell temperature during incubation on broiler chick quality, live performance and further processing yield. *Poult. Sci.* 85:932-938.
- Lourens, A., H. van den Brand, M.J.W. Heetkamp, R. Meijerhof and B. Kemp, 2007. Effects of eggshell temperature and oxygen concentration on embryo growth and metabolism during incubation. *Poult. Sci.* 86:2194-2199.
- Yassin, H.; Velthuis, A.G.J.; Boerjan, M.; Lourens, A.; Oude Lansink, A.G.J.M. (2011). Standardized data in the broiler value chain. *Poultry Science* 90 . - p. 498 - 506.
- Lourens, A.; Meijerhof, R.; Kemp, B.; Brand, H. van den (2011). Energy partitioning during incubation and consequences for embryo temperature: A theoretical approach. *Poultry Science* 90 . - p. 516 - 523.
- De Jong, I. C., J. van Harn, H. Gunnink, V. A. Hindle, and A. Lourens. 2012. Footpad dermatitis in Dutch broiler flocks: Prevalence and factors of influence *Poultry Science* 91:1569-1574; doi:10.3382/ps.2012-02156.
- De Jong, I.C., J. van Harn, H. Gunnink, A. Lourens and J.W. van Riel. 2012. Measuring foot-pad lesions in commercial broiler houses. Some aspects of Methodology. *Animal Welfare* 21: 325-330.
- Groot M, Asseldonk Tv, Fink-Gremmels J, Lourens S, Wagenaar J, Kleijer-Ligtenberg G. Research on herbal products for production of animals in the Netherlands. *SL61. Planta Medica* 13, vol 79, sept 2013, p 1123 (book of Abstracts GA conf Münster).
- De Jong, I.C., A. Lourens, and J. van Harn. 2015. Effect of hatch location and diet density on footpad dermatitis and growth performance in broiler chickens. *J. Appl. Poult. Res.* 00:1–10.
- Van den Brand, H., M. P. Sosef, A. Lourens, and J. van Harn. 2016. Effects of floor eggs on hatchability and later life performance in broiler chickens. *Poultry Science* 0:1–7.

- Afsarian, O., M. H. Shahir, A. Akhlaghi, H. Lotfolahian, A. Hoseini, and A. Lourens. 2016. Periodical low eggshell temperatures during incubation and post hatch dietary arginine supplementation: Effects on performance and cold tolerance acquisition in broilers. *Poultry Science* 95:2427–2434.
- De Gouw, P., L.J.F. Van de Ven, A. Lourens, B. Kemp and H. van den Brand. 2017. Effects of dust, formaldehyde and delayed feeding on early postnatal development of broiler chickens. *Research in Veterinary Science* 112 (2017) 201–207.
- Woelders, H., A de Wit, A. Lourens, N. Stockhofe, B. Engel, I. Hulsegge, D. Schokker, P. van Heijningen, S. Vossen, D. Bekers, and P. Zwamborn. 2017. Study of Potential Health Effects of Electromagnetic Fields of Telephony and Wi-Fi , Using Chick en Embryo Development as Animal Model. *Bio electromagnetics* 38:186-203.

Papers and abstracts in conference proceedings

- Van Middelkoop J.H. and A. Lourens. 2002. Influence of genotype environmental interaction on embryonic mortality and sex ratio. Bremen, Abstr 66 (1.5.3):31-32. Full paper [CD Rom] E:/RES/CGR/122/RES/79.pdf, 4p.
- Lourens, A. and T. Meter. 2004. Hatchbrood: temperature control at bird level improves broiler performance. *Proc. XXII World's Poult. Congress in Istanbul, Turkey* p. 206.
- Lourens, A., R.A. van Emous, J. van Harn, and J.H. van Middelkoop. 2004. Scatter feeding and low-density diet in broiler breeder rearing: Behaviour and technical results. *Proc. XXII World's Poult. Congress in Istanbul, Turkey* p. 604.
- Joseph, N. S., A. Lourens, and E. T. Moran. 2004. The adverse effects of sub-optimal incubation temperatures on chick yield and early chick quality. Abstract 64, p1776 SPSS meeting.
- Brand, H. van den, A. Lourens, R. Meijerhof, M.J.W. Heetkamp, and B. Kemp. 2007. Incubation circumstances affect energy metabolism in avian embryos In: *Energy and protein metabolism and nutrition - EAAP 124, Vichy, France, 9-13 September, 2007*. Wageningen Academic Publishers, p. 511-512. Energy and protein metabolism and nutrition, 2007-09-09/ 2007-09-13.
- Lourens, A., T.J. Hagenaars, N.M. Bolder and B. Engel. 2008. Risk assessment for alternative housing systems for broilers. *Proc. XXIII World's Poult. Congress in Brisbane, Australia* p. 167.
- Lourens, A. 2008. Preserving hatchability and post hatch performance in long stored eggs in practice. *Proc. XXIII World's Poult. Congress in Brisbane, Australia* p. 207.
- Hoeksma, P., A. Lourens and M. Bokma-Bakker. 2009 Policy and Research on animal carcass disposal in the Netherlands. Third International Symposium on Management of Animal Carcasses, Tissues and Related By Products. UC Davis, California, USA (<http://extension.umaine.edu/ByproductsSymposium09/proceedings/default.htm>)
- Lourens, A. 2009. Welfare issues in broiler breeders. *Poultry Welfare Outlook and Prospects in EU*. Korean Society of Poultry Science / Animal Welfare, Chonbuk National University, South Korea.
- Jong, I.C. de; Harn, J. van; Gunnink, H.; Riel, J.W. van; Lourens, A. (2011). A protocol for measuring foot pad lesions in commercial broiler houses. In: *Proceedings of the 5th International Conference on the Assessment of Animal Welfare at Farm and Group Level*. 08-11 Augus 2011, Guelph, Ontario, Canada. - Guelph : Campbell center for the Study of Animal Welfare, University of Guelph, 5th International Conference on the Assessment of Animal Welfare at Farm and Group Level, WAFL, Ontario, Canada, 2011-08-08/ 2011-08-11.

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- Lourens, A. en D.C. Deeming. 1998. Gezocht: alternatieven voor formaldehyde bij ontsmetting van broedeieren. *Praktijkonderzoek* 98 (3): 12-16.
- Lourens, A. en R. Meijerhof. 1998. Invloed broedtemperatuur op uitval vleeskuikens. *Praktijkonderzoek* 98 (3): 17-19.
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- Deeming, D.C. en A. Lourens. 1999. Op de kop kost geld: verschillen in broeduitkomsten. *Pluimveehouderij* 29 (4):16-17.
- Lourens, A. 1999. Het gewicht van een ei maakt veel verschil. *Pluimveehouderij* 29 (37): 17-18.
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- Lourens, A. en D.C. Deeming. 1999. Effect van tijdelijk opwarmen van lang bewaarde broedeieren van oude hennen. *Praktijkonderzoek* 99 (2): 23-26.
- Haar, J.W. van der en A. Lourens. 1999. Invloed voersamenstelling op broedresultaten. *Praktijkonderzoek* 99 (3): 12-16.
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- Lourens, A. en J.H. van Middelkoop. 1999. Het effect van broedeitemperatuur en gewichtsverlies op broeduitkomsten. *PP-Rapport* 9904.
- Lourens, A. 2000. Effect broedomstandigheden op kuikenkwaliteit. *Pluimveehouderij* 30 (44): 10-13
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- Lourens, A. 2000. Broederijonderzoek: temperatuur en broeduitkomsten in de praktijk. *Praktijkonderzoek* 2000 (2): 25-27.

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- Lourens, A. and J.H. Van Middelkoop. 2000. Embryo temperature affects hatchability and grow-out performance of broilers. Avian Poult. Biol. Rev. 11:299-301.
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- Lourens, A. 2000. Eitemperatuur registratie in commerciële broedmachines bij de VB-leg sector: het effect van eitemperatuur op broeduitkomsten. PP-rapport 0007: 13p.
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- Lourens, A. 2001. Prolonged incubation time positively affects broiler grow-out performance and yield. Avian Poult. Biol. Rev. 12(4): 192-194.
- Lourens, A. 2001. Variatie in broedomstandigheden geeft variatie in broeduitkomst en kuikenkwaliteit. Pluimveehouderij 31 (41): 15.
- Lourens, A. 2001. Broeduitkomsten van lang bewaarde eieren vallen minder terug: opwarmen broedeieren voor de bewaarperiode. Pluimveehouderij 31 (6): 8-9.
- Lourens, A. 2001. Metingen naar de verschillen tussen uitkomstbakken: het belang van luchtbeweging. Pluimveehouderij 31 (10): 18-19.
- Lourens, A. 2001. Broedeieren wassen en ontsmetten: middelen en methoden. Pluimvee rapport 227: 17p.
- Lourens, A. and M. Kuijpers. 2002. Control temperature of young chicks to reduce mortality. World Poultry 18 (11): 24-26.
- Lourens, A. 2002. Heating of hatching eggs before storage improves hatchability. World Poult., 18, 24-25.
- Haar, J.W. van der, A. van Voorst, J.H. van Middelkoop en A. Lourens. 2002. Huisvesting en verzorging van vleeskuikenouderdieren zonder ingrepen. Pluimvee Praktijkrapport 3: 22p
- Lourens, A. 2003. De juiste temperatuur in de eerste week. Pluimveehouderij 33 (34): 7-9.
- Emous, R.E. van, J. van Harn, A. Lourens en J.H. van Middelkoop. 2003. Langere poten bij hanen: positief effect van voer strooien bij vleeskuikenouderdieren. Pluimveehouderij 33 (36): 20-21.
- Lourens, A. 2003. Embryo development and chick temperature. Avian Poult. Biol. Rev. 15:226-227.
- Lourens, A., J.C. van den Wijngaard, D. Oxley-Goody, H. van de Brand and C. Schneitz. 2003. Effect of *in ovo* administration of a competitive exclusion product on hatchability, post hatch performance and natural antibodies. PP-Report 20p.
- Lourens, A. 2004. Residual yolk and egg weight loss during incubation under controlled eggshell temperatures. Avian Poult. Biol. Rev 16
- Emous, R.A. van, J. van Harn en A. Lourens. 2004. Onderzocht bij ouderdieren in combinatie met spinfeeder: "welzijnsvoer" tijdens de opfok verbetert de leg. Pluimveehouderij 34 (12): 10-11.
- Emous, R.A. van, J. van Harn en A. Lourens. 2004. Onderzoek met mestbanden bij vleeskuikenouderdieren: tweemaal per week afdraaien verlaagt ammoniakemissie. Pluimveehouderij 34 (23):22-23.
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- Lourens, A. and J.D. van der Klis. 2004. Resilience and early mortality in broilers: a review. Animal Sciences Group Report 04
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- Lourens, A. 2006. Jonge moederdieren en korte bewaartijden: Ammoniak pakt positief uit voor het embryo. Pluimveehouderij 35 (4): 8-9.
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