OIE Reference Laboratory Reports Activities

Activities in 2015

This report has been submitted : 2016-01-12 14:51:16

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Salmonellosis
Address of laboratory:	New Haw, Addlestone Surrey KT15 3NB Weybridge UNITED KINGDOM
Tel.:	+44-1932 35 73 61
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E-mail address:	rob.davies@apha.gsi.gov.uk
Website:	https://www.gov.uk/government/organisations/animal-and-plant-health-agency
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Kath Webster
Name (including Title and Position) of OIE Reference Expert:	Dr. Rob Davies, Head of OIE reference laboratory
Which of the following defines your laboratory? Check all that apply:	Governmental

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in OIE Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
SAT (S. Gallinarum/Pullorum)	yes	39	
SAT (S. Abortusequi)	yes	93	
SAT (S. Dublin)	yes	60	
SAT (S. Typhimurium)	yes	21	
RSA (S. Gallinarum/Pullorum)	yes	321	
Direct diagnostic tests		Nationally	Internationally
Serotyping	yes	9562	50
Phagetyping	yes	797	16
Antimicrobial susceptibility testing	yes	3252	39
Tests for live Salmonella vaccines	yes	448	14
Salmonella culture	yes	80000	0

ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards.
To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by the OIE?

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Salmonella typing sera	serotyping	15,421 ml	23,688 ml	600 ml	commercially sensitive information	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East
S. Pullorum control serum	SAT	none	7 ml	8.75 ml	commercially sensitive information	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

No

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
ISRAEL	Advice on alternative methods to serotyping	remote assistance
COLOMBIA	Advice on continuous improvement in Veterinary diagnostic laboratories	remote assistance
UNITED STATES OF AMERICA	Advice on efficacy, vertical transmission and environmental survival of Salmonella vaccines	remote assistance
IRELAND	Advice on S. Enteritidis in broilers	remote assistance
HUNGARY	Discussion of possible collaboration on S. Infantis typing	remote assistance
CHINA (PEOPLE'S REP. OF)	Visit of the laboratory by Government scientific delegation	laboratory demonstrations and workshop
SPAIN	Advice on autogenous Salmonella vaccine for wild boar	remote assistance
GERMANY	Testing of unusual vaccine strain	molecular analysis of strains
SAUDI ARABIA	Advice on isolation of Salmonella from broiler chickens at slaughter	remote assistance
ISRAEL	Advice on sampling techniques for hatchery-related outbreak	remote assistance

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)
molecular detection and characterisation	12 months	comparison of methodologies	various

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

13. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category)

a) Articles published in peer-reviewed journals: 16
ANDRES, V. M., & DAVIES, R. H. (2015). Biosecurity Measures to Control Salmonella and Other Infectious Agents in Pig Farms: A Review. Comprehensive Reviews in Food Science and Food Safety, 14(4), 317-335

ARNOLD, M.E., GOSLING, R.J., MARTELLI, F ; MUELLER-DOBLIES, D. & DAVIES R.H (2015). Evaluation of the sensitivity of faecal sampling for detection of monophasic Salmonella Typhimurium and other Salmonella in cattle and pigs. Epidemiol. Infect., 143, 1681-1691

ARNOLD, M. E., MUELLER-DOBLIES, D., GOSLING, R. J., MARTELLI, F., & DAVIES, R. H. (2015). Estimation of the sensitivity of various environmental sampling methods for detection of Salmonella in duck flocks. Avian Pathology, 44(6), 423-429.

BELLUCO, S., CIBIN, R., DAVIES, R. & WALES, A (2015) A review of the scientific literature on the control of Salmonella spp. in food-producing animals other than poultry. OIE Publications (Paris, France) 1-81.

BELLUCO, S., CIBIN, R., DAVIES, R. & WALES, A (2015) The control of Salmonella in pigs and cattle. OIE Bulletin 2015-1, 64-71

DAVIES, R.H., WALES, A.D. (2015) Developments in Salmonella control in eggs; in Advances in Microbial Food Safety, 2, 281-311. Ed. John Sofos, Woodhead Publishing, Oxford, UK.

Figueiredo, R., Card, R., Nunes, C., AbuOun, M., Bagnall, M.C., Nunez, J. Virulence Characterization of Salmonella enterica by a New Microarray: Detection and Evaluation of the Cytolethal Distending Toxin Gene Activity in the Unusual Host S. Typhimurium. PloS one 10 (8), e0135010

GOSLING, R.J & R. H. DAVIES, R.H. (2015): Investigation of laboratory testing issues in the context of the Salmonella National Control Programme in Great Britain, British Poultry Science, DOI: 10.1080/00071668.2015.1024608

HAYWARD, M.R., PETROVSKA, L., JANSEN, V.A.A., WOODWARD, M.J. Population structure and associated phenotypes of Salmonella enterica serovars Derby and Mbandaka overlap with host range. BMC Microbiology (in press)

HORTON, R.A., CARD, R., RANDALL, L.P. and TEALE, C.J. Differentiation of UK endemic strains of Salmonella enterica serovar Newport from epidemic North American strains by PCR detection of a truncated bapA

chromosomal gene". Short communication, accepted for publication in Research in Veterinary Science

MARTELLI, F., BIRCH, C. and DAVIES, R.H. Observations on the distribution and control of Salmonella in commercial duck hatcheries in the United Kingdom. Accepted for publication in Avian Pathology.

MORRIS, V. K., CARRIQUE-MAS, J. J., MUELLER-DOBLIES, D., DAVIES, R. H., WALES, A. D., & ALLEN, V. M. (2015). A longitudinal observational study of Salmonella shedding patterns by commercial turkeys during rearing and fattening, showing limitations of some control measures. British poultry science, (e-print ahead of publication - http://www.tandfonline.com/doi/pdf/10.1080/00071668.2014.991273).

Petrovska, L. Mather, A.E., AbuOun, M., Branchu, P., Harris, S.R., Connor, T., Hopkins, K.L., Underwood, A., Lettini, A.A., Page, A., Bagnall, M., Wain, J., Parkhill, J., Dougan, G., Davies, R., Kingsley, R.A. Microevolution during the emergence of a monophasic Salmonella Typhimurium epidemic in the United Kingdom. Emerging Infectious Diseases, in press.

POWELL, L.F., CHENEY, T. E. A., WILLIAMSON, S., GUY, E., SMITH, R. P. & DAVIES, R.H., (2015). A prevalence study of Salmonella spp., Yersinia spp., Toxoplasma gondii and porcine reproductive and respiratory syndrome virus in UK pigs at slaughter. Epidemiology and Infection, available on CJO2015. doi:10.1017/S0950268815002794.

RABIE, A.J., MCLAREN, I.,M., BRESLIN, M.F., SAYERS, R. &. DAVIES, R.H. (2015). Assessment of anti-Salmonella activity of boot dip samples. Avian Pathology, 44 (2) 129-134 DOI:10.1080/0079457.2015.1012046

WALES, A. D., & DAVIES, R. H. (2015). Co-Selection of Resistance to Antibiotics, Biocides and Heavy Metals, and Its Relevance to Foodborne Pathogens. Antibiotics, 4(4), 567-604.

b) International conferences: 7

Gosling, R., Mueller-Doblies, D., Mawhinney I., Martelli F. The most appropriate sample type to detect Salmonella in a cohort of Salmonella-positive duck flocks. European Society of Clinical Microbiology Conference, Barcelona, Spain 10-13 May 2014.

Rabie, A., Gosling R, and Martelli F. A study of the efficacy of products used for washing duck eggs. Proceedings of the German Symposium on Zoonoses Research 2014 and 7th International Conference on Emerging Zoonoses 16-17 October 2014, p.216.

A Rabie, R Gosling, F Martelli, R Davies. A study of the efficacy of products used for washing duck eggs. Med-Vet-Net conference, Maisons-Alfort, France, 8-9 October 2015.

Smith, R.P., Andres, V., Cheney, T.E., Marier, E., Tchórzewska, M.A, Davies, R.H. Case-control study to detect protective factors on pig farms with low Salmonella prevalence. SafePork conference September 2015, Portugal.

Gosling, R.J., Breslin, M., Davies, R.H. Efficacy of different disinfectants intended for a pig farm environment. SafePork conference September 2015, Portugal, oral presentation.

Smith, R.P., Andres, V., Cheney, T.E., Davies, R. Case-control study to detect protective factors on pig farms with low Salmonella prevalence. ISVEE 14 Mexico, oral presentation.

Petrovska, L., Mather, A.E., AbuOun, M., Branchu, P., Harris, S.R., Connor, T., Hopkins, K.L., Underwood, A., Lettini, A.A., Page, A., Bagnall, M., Wain, J., Parkhill, J., Dougan, G., Davies, R., Kingsley, R.A. Microevolution during the emergence of the monophasic Salmonella. Society for general Microbiology (SGM) Conference 30th of March – 2nd of April 2015

c) National conferences: 2

Anjum, M. Salmonella: Genomics and Phenomics of bacterial pathogens. PHE Annual Conference, June 2015, UK

Mueller-Doblies, D. Salmonella – new and emerging threats to public health and the poultry industry. Oral presentation at the British Veterinary Poultry Association Winter Meeting, Manchester, UK, November 2015

d) Other:

(Provide website address or link to appropriate information) 7

ANON. (2015). EFSA Panel on Biological Hazards Opinion: Risk to public and/or animal health of the treatment of dead-in-shell chicks (Category 2 material) to be used as raw material for the production of biogas or compost with Category 3 approved method. EFSA Journal 2015;13(11):4306, 46 pp. doi:10.2903/j.efsa.2015.4306

ANON. (2015) EFSA (European Food Safety Authority) and ECDC (European Centre for Disease Prevention and Control), 2015. The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2014. EFSA Journal 2015;13(12):4329, 191 pp. doi:10.2903/j.efsa.2015.4329

Scientific Opinion on the public health risks of table eggs due to deterioration and development of pathogens, EFSA Journal 2014;12(7):3782

Smith, R.P. Pig Salmonella: prevalence in UK herd and current APHA Studies. Waitrose supply chain meeting January 2015, UK.

Pig salmonella project roadshow at BQP, Stradbroke, UK, November 2015.

Gosling, R.J., Breslin, M., Davies, R.H. (2015) Efficacy of different disinfectants intended for a pig farm environment, Presentation at Pig Roadshow.

Mueller-Doblies, D. Diagnostic and monitoring standards recommended to detect positive flocks, assess prevalence and take corrective actions against SE and ST. Webinar produced for Lohmann Animal Health, May 2015

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries
To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

a) Technical visits: 2
b) Seminars: 2
c) Hands-on training courses:
d) Internships (>1 month): 1

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
a	Japan	5
d	Italy	1
a	Hong Kong	4
b	Serbia	50
b	worldwide (webinar)	ca. 100

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System certified according to an International Standard?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	UKAS accreditation certificate.pdf
GLP	GLP certificate 2014-10-10 APHA name change.pdf
ISO 9001	9001 Certificate 2014-10-17.pdf

16. Is your laboratory accredited by an international accreditation body?

Yes

Test for which your laboratory is accredited	Accreditation body
Various Salmonella surveillance and diagnostic tests	UKAS
Various serological and AMR tests	UKAS
Various research methodologies	Lloyds Register

17. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

(See Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2014, Chapter 1.1.3a)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

No

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

20. Did your laboratory exchange information with other OIE Reference Laboratories designated for the same pathogen or disease?

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: [1]	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Assess Laboratory capability to conduct isolation and identification of Salmonella species to help maintain accreditation. Animal and Plant Health Agency Vetqas PT scheme PT0087 Salmonella in Animal Feed.	Participant	14	UK
Assess Laboratory capability to conduct isolation and identification of Salmonella species to help maintain accreditation. Animal and Plant Health Agency Vetqas PT scheme PT0088 Salmonella in Poultry	Participant	119	UK, Canada, Italy, Germany
Assess Laboratory capability to conduct isolation and identification of Salmonella species to help maintain accreditation. Animal and Plant Health Agency Vetqas PT scheme PT0090 Control of Salmonella in Poultry Order (run for Defra for UK labs only)	Participant	24	UK
Assess Laboratory capability to culture and conduct serotyping of O and H antigens (incl name of serovar where applicable). PT used to help help maintain accreditation. PT0084 Salmonella serotyping Culture and serotyping	Participant	30	UK, Germany

[1] *validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.*

22. Did your laboratory collaborate with other OIE Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

No

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at:

http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing see point 1.3

Purpose for inter-laboratory test comparisons[1]	No. participating laboratories	Region(s) of participating OIE Member Countries
Assess Laboratory capability to conduct isolation and identification of Salmonella species to help maintain accreditation. Animal and Plant Health Agency Vetqas PT scheme PT0087 Salmonella in Animal Feed.	14	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East
Assess Laboratory capability to conduct isolation and identification of Salmonella species to help maintain accreditation. Animal and Plant Health Agency Vetqas PT scheme PT0088 Salmonella in Poultry	119	☐Africa ☒Americas ☐Asia and Pacific ☒Europe ☐Middle East
Assess Laboratory capability to conduct isolation and identification of Salmonella species to help maintain accreditation. Animal and Plant Health Agency Vetqas PT scheme PT0090 Control of Salmonella in Poultry Order (run for Defra for UK labs only)	24	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East
Assess Laboratory capability to culture and conduct serotyping of O and H antigens (incl name of serovar where applicable). PT used to help help maintain accreditation. PT0084 Salmonella serotyping Culture and serotyping	30	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East
EURL Salmonella ringtrial for PFGE		☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East
EQA-6 ringtrial for both PFGE and MLVA		☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East
Salmonella detection, serotyping and phagetyping EU RL ringtrials		☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

Yes

Kind of consultancy	Location	Subject (facultative)
Revision of Salmonellosis Chapter OIE manual	E.mail correspondence	Diagnosis and Control
Paper on non-avian Salmonella control - Belluco et al. 2015	E.mail correspondence	Control
AHWG on Salmonella control in pigs and cattle	Paris	Control

25. Additional comments regarding your report:

This report was compiled by Doris Mueller-Doblies on behalf of Robert Davies.