EXPERTISE AND SERVICE PROVISION
QUALITY OF LABORATORIES

EXTERNAL QUALITY ASSESSMENT
IN VETERINARY DIAGNOSIS

DEFINITIVE GLOBAL REPORT

Proficiency Testing in Veterinary Diagnosis

Salmonella Gallinarum biovar Pullorum/Gallinarum

SURVEY 2020/14

Sciensano/PT VET Salmonella/1-E

Expertise and service provision
Quality of laboratories
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Authorization to release the report: By Bernard China, scheme coordinator, on 17/02/2021.

Bernard China

All the reports are also available on our webpage:
https://www.wiv-isp.be/QML/activities/PT%20VET/fr/originaux/rapports_annee.htm
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Introduction

This survey was dedicated to isolate *Salmonella* Gallinarum biovar Pullorum and/or biovar Gallinarum. from organs using culture methods.

The samples

Design

The samples were prepared by the National Reference Laboratory for *Salmonella* Gallinarum biovar Gallinarum/Pullorum, Veterinary Bacteriology Service, Infectious diseases in animals Directorate, Sciensano.
Chicken liver organs were first tested as *Salmonella* spp. free and then spiked or not with *Salmonella* spp. suspensions and homogenised.

Homogeneity

5 different samples were used: PT2020SALBACP01, PT2020SALBACP02, PT2020SALBACP03, PT2020SALBACP04 and PT2020SALBACN01.
The homogeneity of the samples were tested by the NRL on replicates of each sample.
The samples were considered as homogeneous.

The participants

4 laboratories participated to the Bacteriology of *Salmonella*: Sciensano, Arsia (Ciney), DGZ (Torhout), LMVE (Luxemburg).

Target values

The target values were determined by the NRL based on the dosis of the spiked *Salmonella* spp. (or no spiking):
PT2020SALBACP01 is a strong positive sample for *Salmonella* Gallinarum biovar Pullorum (100µl of 10^{-1} dilution of 0.5McF spiked in 10g of liver)
PT2020SALBACP02 is a weak positive sample for *Salmonella* Gallinarum biovar Pullorum (100µl of 10^{-2} dilution of 0.5McF spiked in 10g of liver)
PT2020SALBACP03 is a strong positive sample for *Salmonella* Gallinarum biovar Gallinarum (100µl of 10^{-1} dilution of 0.5McF spiked in 10g of liver)
PT2020SALBACP04 is a weak positive sample for *Salmonella* Gallinarum biovar Gallinarum 100µl of 10^{-3} dilution of 0.5McF spiked in 10g of liver)
PT2020SALBACN01 is a negative sample (not spiked)

Stability

The samples were tested during (starting day of the survey) and after (the day after the starting day) the survey. The results were compared and the samples were considered as well prepared (good status of each sample) and stable in the time frame of the survey.

Randomisation and panel composition

Since a specific number has been assigned to each laboratory, the randomisation has been performed as follow:

Laboratory	Group 1 97504 and 97508	Group 2 97507 and 97516
Sample Order		
SALBAC2001	PT2018SALBACP01	PT2018SALBACN01
SALBAC2002	PT2018SALBACP02	PT2018SALBACP01
SALBAC2003	PT2018SALBACP03	PT2018SALBACN01
SALBAC2004	PT2018SALBACP04	PT2018SALBACP01
SALBAC2005	PT2018SALBACP03	PT2018SALBACN01
SALBAC2006	PT2018SALBACP02	PT2018SALBACP03
SALBAC2007	PT2018SALBACP01	PT2018SALBACP04
SALBAC2008	PT2018SALBACN01	PT2018SALBACP02
SALBAC2009	PT2018SALBACN01	PT2018SALBACP03
SALBAC2010	PT2018SALBACN01	PT2018SALBACP02

The panel consisted of 10 organ samples of 10g.

Survey Timeline

Randomization and sending samples to participants: 07/12/2020. The samples were sent refrigerated.
Deadline for the results encoding: 18/12/2020
Preliminary report: 22/12/2020

Results

Bacteriology

A panel consisted of 10 samples: 7 positive and 3 negative samples.

1.1.Results per sample

4 laboratories participated.

Table R1. Result per sample

Sample	Expected result	Number of repetition (number of results)	Observed result
PT2020SALBACP01	Positive	2 (8)	6 positive results 2 not determined
PT2020SALBACP02	Positive	2 (8)	6 positive results 2 not determined
PT2020SALBACP03	Positive	2 (8)	6 positive results 2 not determined
PT2020SALBACP04	Positive	1 (4)	3 Positive results 1 not determined
PT2020SALBACN01	Negative	3 (12)	9 negative results 3 not determined

The 30 encoded results were all correct. One participant did not encode any result but mentioned the following remark: “The samples have been considered as food samples and performed by BRD 07/11-12/05. The issue showed up only *E. coli*. This method doesn't seem to be adapted for the required purpose”.
If strictly followed, the method BRD 07/11-12/05 includes at least 2 deviations from the protocol recommended in the manual for participant: (i) the dilution factor in BPW recommended for this survey is 1:1 (not 1:10), (ii) the BPW should not be incubated before the enrichment in RVS (to avoid that *S.* Gallinarum biovar Gallinarum and Pullorum are outgrown by competitive flora). These 2 deviations could be the cause of the issue.

2.2. Used methods

All participants used their own instructions.
The table R2 indicated the main reagents used by the participants.

Table R2. Major used reagents.

97504	97507	97508	97516
Buffered Pepton Water (Biorad)	Buffered Pepton Water (Biorad)	RVS (BioRad)	Not specified
RVS (BioRad)	RVS (BioRad)	BGA (BD)	
BGA (Oxoid)	BGA (Oxoid)	CHROM (BD)	
RAPID Salmonella (BioRad)	RAPID Salmonella (Biorad)	TSI (BioRad)	
Lysine (Oxoid)		Urease (BioRad)	
TSI (Biotrading)		Lysine (BioRad)	
Sorbitol/mobility			
dulcitol			

Annex1: additional information

PRELIMINARY REPORT

The preliminary report of this survey is available on our website via the following link:

https://www.wiv-isp.be/QML/activities/PT%20VET/fr/originaux/rapports_annee.htm

The calendar for Proficiency Testing in Veterinary diagnosis is available on our website:

The link is:

https://www.wiv-isp.be/QML/activities/external_quality/calendar/calender_PT%20VET/_fr/Calendrier_2020-PT%20VET%202.htm

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