



SALMONELLA BOOT SWAB KIT

INTENDED USE

Technical Service Consultants Salmonella Boot Swab Kit is a sterile sampling kit for taking environmental samples from poultry flocks for the detection of *Salmonella* spp.

PRINCIPLE

Sampling with boot swabs was developed as a simple, cost-effective, user-friendly environmental test for assessing the prevalence of *Salmonella* spp. in poultry flocks. Boot swabs were proven to be as sensitive as conventional methods, such as litter collection by hand or drag swabs¹. As part of the EU zoonoses legislation, the European implementation documents and the UK National Control Program (NCP), all poultry producers are required to take environmental samples from poultry flock holdings and sampling with boot swabs is approved as one of the acceptable methods².

CONTENTS

The design of the Salmonella Boot Swab Kits complies with sampling requirements of the Salmonella legislation and is available in 4 different formats to cover specific applications. Salmonella Boot Swab Kit is supplied pre-moistened, sterile & (where applicable) includes sampling consumables.

PRODUCT (without overboot)	Representative Image	PRODUCT (with overboot)	Representative Image
TS/15-2A - 2 Pairs Boot Swab Kit Includes two pairs of boot swabs, pre-moistened in MRD, packed and sealed into a resealable outer bag. Includes gloves packed in a separate resealable outer bag.		TS/15-2B - 2 Pairs Boot Swab Kit with Overboots Includes two pairs of boot swabs, pre-moistened in MRD, packed and sealed into a resealable outer bag. Includes pair of plastic overboots with gloves packed in a separate resealable outer bag.	
TS/15-5A - 5 Pairs Boot Swab Kit Includes five pairs of boot swabs, pre-moistened in MRD, packed and sealed into a resealable outer bag. Includes gloves packed in a separate resealable outer bag.		TS/15-5B - 5 Pairs Boot Swab Kit with Overboots Includes five pairs of boot swabs, pre-moistened in MRD, packed and sealed into a resealable outer bag. Includes a pair of plastic overboots with gloves packed in a separate resealable outer bag.	

Maximum Recovery Diluent (MRD):

Manufactured to the following specification: *Water – 1L; *Peptone – 1g; *Sodium Chloride – 8.5 g; pH 7.0 ± 0.2

*Formulation maybe adjusted to meet performance criteria

SAMPLING METHOD

The table below gives users an indication of which products are most suitable for testing of Salmonellae.

Animal population	Phase of production for sampling	Boot swab method	Reference	Suitable product
Breeding flocks of <i>Gallus gallus</i>	Within four weeks, following moving to laying phase	2 pairs	9; 13	TS/15-2A; TS/15-2B
	Two weeks before moving to the laying phase or laying unit	2 pairs	13	TS/15-2A; TS/15-2B
	Every second week during the laying period	5 pairs	9; 13	TS/15-5A; TS/15-5B
Laying hens	Every 15 weeks during laying phase; 1st sample - 24 ± 2 weeks	2 pairs	10; 14	TS/15-2A; TS/15-2B
Broilers	Within 3 weeks before they're moved to the slaughterhouse	2 pairs	11; NCP for Salmonellae in broilers	TS/15-2A; TS/15-2B
Breeding turkey	Four-week-old birds	5 pairs	12	TS/15-5A; TS/15-5B
	Two weeks before moving to the laying phase or laying unit	5 pairs	12	TS/15-5A; TS/15-5B
	Every third week during the laying period	5 pairs	12	TS/15-5A; TS/15-5B
Fattening and breeding turkeys	Birds leaving for slaughter	2 pairs	12	TS/15-2A; TS/15-2B TS/15-5A; TS/15-5B
		5 pairs		
		1 pair		

Refer to appropriate legislation or guidance documents for detailed sampling and testing protocols.



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INSTRUCTION FOR USE

1. Enter the poultry house to be sampled & identify the sampling area(s). Divide the floor area equally between the pairs of boot swabs available, whilst making sure every section is covered for sample collection (usually 2 pairs for moving chicks to laying unit or 5 pairs for breeding adults).
2. Label the re-sealable outer bag(s) with sample details or sample ID. Samples must be returned to the laboratory sealed securely inside the re-sealable outer bags provided. These bags must be accessible throughout the sampling process.
3. DO NOT use the same boot swab kit across different houses as each boot swab kit must be used in one house only.
4. For TS/15-2A or TS/15-5A products, open Bag A, remove the gloves and then open Bag B and fit the boots swabs.
5. For TS/15-2B or TS/15-5B products, open bag containing overboots first (Bag A), put gloves & overboots on, then fit the boot swabs (Bag B).
6. Use the pair of overboots to cover normal footwear. Try not to touch the external surface of the overboot where the boot swab is to be fitted.
7. Whilst wearing gloves, either fit all boot swabs onto the overboots or alternatively just fit one pair. If only one boot swab pair is used at a time, keep the remaining pair(s) available for use at other designated sampling areas. Use opened products within 6 hours (if kept >20°C) or discard.
8. Fit the boot swabs & walk the desired circuit for at least 100 steps & remove the boots. If multiple boots are fitted at once, use 1 pair per sector (or pen) until all pairs are used up in the same house. If the house is divided into several pens, spend more time in the larger pens and less in the smaller pens. Additional boots kits can be added in large houses. In these cases existing overboots can be re-used.
9. Slide/push feet through the floor litter to pick up as much material as possible. Once sampling is complete, carefully remove and invert (folding in on itself) the boot swabs so not to lose or dislodge any attached material. Place sampled boot swabs into Bag B and close using the re-sealable zip for transport. If desired, Bag A may also be utilised.
10. Collect the required number of boot swab samples, pooling together (e.g. from same area) where feasible. 2 pairs of boot swabs can be pooled into 1 sample; or 5 pairs can be pooled into 1 or 2 samples (e.g. 2x pairs & 3x pairs) using both outer bags (customer preference).
11. Finally, send samples to approved testing laboratory for detection of Salmonellae. If samples are not despatched on the day of collection to the laboratory they must be stored at 4-8°C (but not frozen), and must be submitted within 48 hours of collection.

STORAGE CONDITIONS AND SHELF-LIFE

Unopened Salmonella Boot Swab Kits should be stored at 4-25°C; in a dry and ventilated area, protected from light, heat and moisture, in original packaging. Shelf-life – 12 months from the date of manufacture.

ADDITIONAL REQUIREMENTS

Additional consumable or transport items are available from TSC – www.tscswabs.co.uk. TSC does not provide or include Salmonellae analysis.

PRECAUTIONS AND LIMITATIONS

1. *Salmonella* Boot Swab Kit is not suitable for sampling of small poultry flocks (please contact TSC for alternative products).
2. Plastic overboots are not included in TS/15-2A; TS/15-5A. If required, see alternatives TS/15-2B or TS/15-5B products or purchased separately.
3. Reduced survival times may occur with stressed, atypical or mutant Salmonellae. Faecal matter usually preserve these organisms, but if presence is suspected, further supplement of certain amino acids (e.g. L-histidine, Tyrosine) upto 100mg per test may be performed without negative effect.
4. Poultry Boot Swab Kits should not be used if any of the following conditions are present:
 - a) any evidence of damage or leakage to bags;
 - b) past expiry date

References

1. Aho M. 1992. International Journal of Food Microbiology. 15: 225-235.
2. Baseline survey on the prevalence of *Salmonella* in broiler flocks of *Gallus gallus* in the EU. SANCO/1688/2005 Rev.1.
3. Baseline study of the prevalence of *Salmonella* in laying flocks of *Gallus gallus* in the EU. SANCO/34/2004 Rev.3.
4. Carrique-Mas J.J., Breslin M., Sayers A.R., McLaren I., Arnold M., Davies R. 2008. Letters in Applied Microbiology. 47: 514-519.
5. FSA Project Ref B15003: Best practical procedures to sample & test poultry flocks for *Salmonella*. FSA. 16th April 2005.
6. Gradel K.O., Andersen J., Madsen M. 2002. Acta Veterinaria Scandinavica. 43(1): 21-30.
7. McCrea B.A., Norton R.A., Macklin K.S., Hess J.B., Bilgili S.F. 2005. Journal of Applied Poultry Research. 14: 694-699.
8. Skov M.N., Carstensen B., Tornøe N., Madsen M. 1999. Journal of Applied Microbiology. 86: 695-700.
9. Commission Regulation (EC) No 1003/2005 (30 June 2005) implementing Regulation (EC) No 2160/2003 Community target for reduction of prevalence of certain Salmonella serotypes in breeding flocks of *Gallus gallus* & amending Reg. (EC) No 2160/2003.
10. Commission regulation (EC) No 1168/2006 of 31 July 2006 implementing Regulation (EC) 2160/2003 Community target for the reduction of the prevalence of certain salmonella serotypes in laying hens of *Gallus gallus* & amending Reg. (EC) No 1003/2005.
11. Commission Regulation (EC) No 646/2007 of 12 June 2007 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards A Community target for the reduction of the prevalence of *Salmonella enteritidis* and *Salmonella typhimurium* in broilers and repealing Regulation (EC) No 1091/2005.
12. Commission Regulation (EC) No 584/2008 (20 June 2008) implementing Reg. (EC) No 2160/2003 of the European Parliament & Council as a Community target for reduction of the prevalence of *Salmonella enteritidis* & *Salmonella typhimurium* in turkeys.
13. UK National Control Programme for Breeders (*Gallus gallus*) (<http://www.defra.gov.uk/animalh/diseases/zoonoses/ncp.htm>).
14. UK National Control Programme for *Salmonella* in layers (*Gallus gallus*). DEFRA. July 2007 (<http://www.defra.gov.uk/animalh/diseases/zoonoses/pdf/national-programme.pdf>).