



Detecting *Salmonella* with AeroCollect® – optimize production with simple samples and quick results

- **Simple sampling** – an air sample with AeroCollect® is simpler and considerably less time consuming to handle compared to boot swabs.
- **Quick test results** – the AeroCollect® air sample can be processed within as little as 1-2 hours in a lab compared to traditional testing which may take days to cultivate and analyse.
- **Closer monitoring of *Salmonella* in flocks** – with simple sampling and quick results comes the prospect of increased monitoring, improved production management and a minimized number of recalls.
- **Problem free shipping** – The AeroCollect® samples can be shipped under ambient conditions without requirements to either temperature or humidity. The closed sample chamber furthermore drastically minimizes any contamination risk of collected samples during handling and transport.

Detection of *Salmonella* with AeroCollect® compared to traditional testing

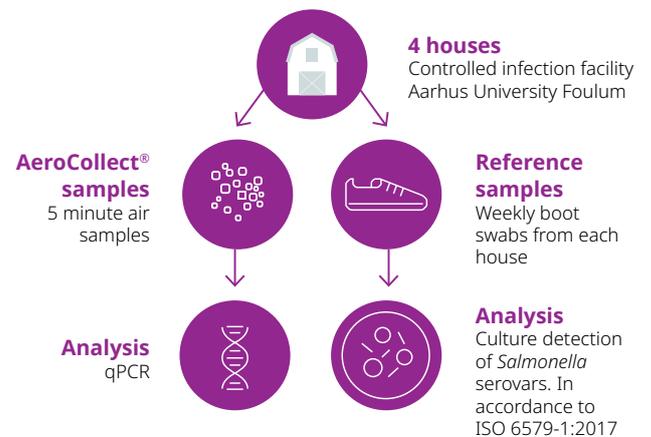
The AeroCollect® system is validated for the detection of *Salmonella* in poultry samples in accordance with the guidelines described in EN ISO 16140-02:2016. The study was carried out as a blinded paired controlled infection study comparing the air samples with the traditional boot swabs. The study demonstrated a sensitivity, specificity, and accuracy of 92.0, 100, and 96.0, respectively. The measure of agreement between the two methods, Cohen's kappa, was found to be 0.92 which constitutes a "Near perfect" according to the ISO-standard.

Note, that in the entire study not a single false positive air sample was found and that the boot swabs were shipped for analysis immediately after collection whereas the air samples were stored up to seven days at room temperature.

Data from the validation study is described in further detail on the next page. Due to the study design, all animals excreted *Salmonella* simultaneously. Once present in the air, perfect agreement was found between the sock samples and the pooled AeroCollect® air samples from each house as seen in the right-most column of the table.

Compared to boot swabs

		Section level	House level
Sensitivity	SE	92 %	100 %
Specificity	SP	100 %	100 %
Accuracy	AC	96 %	100 %
Cohen's Kappa	κ	0.92 (Near perfect agreement)	1 (perfect agreement)



Multiple pathogen testing

An additional benefit generic to the AeroCollect® is that each sample contains enough material for several analyses. Therefore, it is possible to screen for the most common production related pathogens in your region (i.e. Avian influenza, IBV, IBDV, APEC, mycoplasmosis, Marek's disease) on the same sample that is collected e.g. for the *Campylobacter* and *Salmonella* tests. Eluted samples may be stored centrally as a sample library of previous rotations should the need arise for further analyses of previous flocks. Note, that the AeroCollect® samples contain both respiratory and intestinal pathogens and may be analysed for both bacteria and virus.

The process from sample collection to result



When should testing with AeroCollect® take place?

AeroCollect® allows for frequent testing and quick results providing better monitoring of *Salmonella*. This allows for early detection which provides the best basis for adapting the production accordingly as well as production management in general.

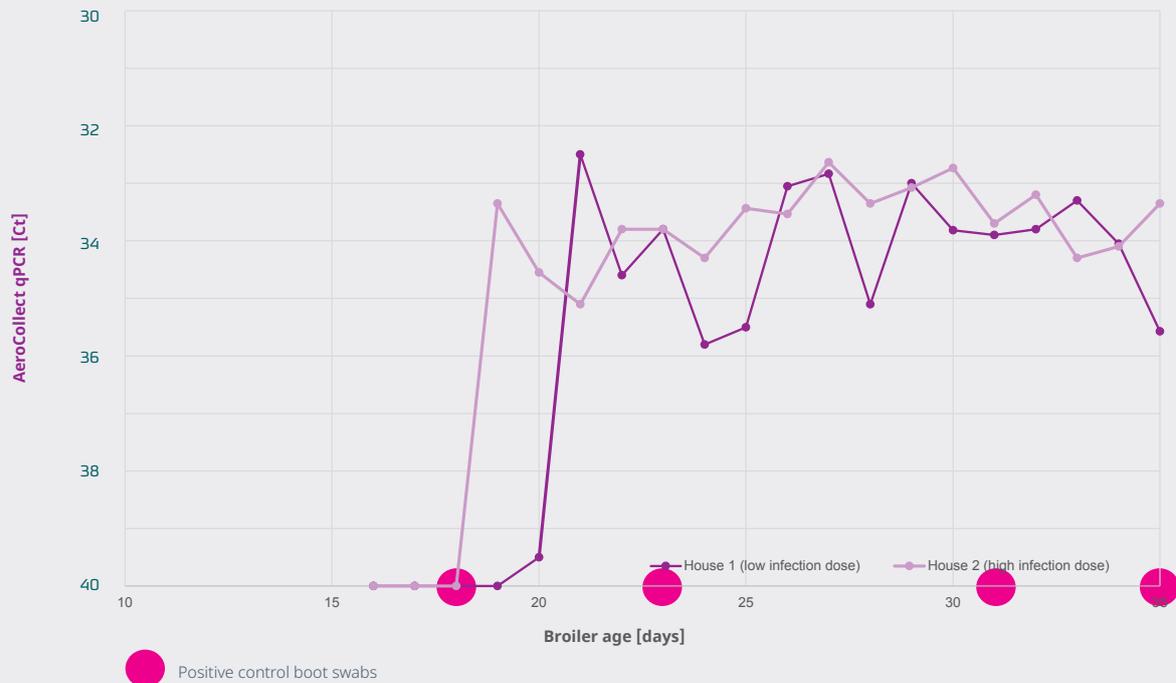
AeroCollect® is a tool for optimising production, as the risk over undiscovered *Salmonella* and subsequent recalls can be minimized by testing broilers routinely near the day of slaughter and by continuous monitoring of laying hens.

Be aware that national regulation may set specific requirements for the type of testing prior to slaughter e.g., boot swabs.

Validation study

Results from controlled blinded infection study with *Salmonella* Typhimurium. The study was conducted in two positive houses and two negative control houses each occupied by 200 traditional ross 308 broilers inserted directly from the hatchery. All samples collected from negative control broilers were negative (data not shown). All broilers

in the positive control houses were orally infected with *Salmonella* Typhimurium on day 15. The plot shows the Ct values from the qPCR analyses of the AeroCollect® samples collected on a daily basis starting from day 16. Paired with the air samples, reference boot swabs were collected from each house on days 18, 23, 31, and 35. These are indicated on the horizontal axis of plot.



Would you like to learn more about what AeroCollect® can do for you and your company?

Contact us at
+45 43 25 14 00
info@aerocollect.dk
or visit aerocollect.dk