User Manual
Poultry
1 Introduction
This user manual describes how to correctly use the AeroCollect® equipment. AeroCollect® is an air sampling device, designed to capture and retain bacteria and viruses from veterinary environments in a custom designed disposable sample chamber.

After sampling, the sample chamber containing the collected sample is sent to the AeroCollect laboratories for analysis, where the contents of the sample chambers are analysed for the presence of selected bacteria and viruses. AeroCollect® can be used in all sectors of the agricultural industry. For specific information about how samples are correctly collected in different sectors, refer to the specific guidelines in the corresponding quick guide.

1.1 Applications
AeroCollect® is a handheld air sampling device, designed to function in dusty environments. However, whenever the device is not being used, it should be stored in the accompanying protective suitcase.

2 Before you start
First check that all of the parts are in the case (see section 2.1). If something is missing, immediately contact AeroCollect. See section 9 for contact information. It is important that you read and understand this manual before samples are collected with the AeroCollect® equipment.

2.1 Case contents
The protective suitcase contains the AeroCollect® equipment and up to a total of six sample chambers.

2.2 Overview of equipment
Figure 2 shows the device viewed from the back and from the front. The device’s individual parts’ functions and purpose are explained in the section below.

3 Use of AeroCollect®
This section explains how to collect air samples using the AeroCollect® equipment. Note that to avoid incorrectly collected samples the device can not be activated if the sample chamber has been incorrectly inserted.
3.1 Preparation of the sample chamber

The sample chambers are supplied in 5 ml Eppendorf® tubes (see step 1 of the chamber insertion procedure below), which can easily be disinfected on the outside. To avoid contamination of the sample chambers, the Eppendorf® tubes should not be opened before the user is in the location where the sample is to be collected.

A step by step guide for how to correctly insert the sample chamber in the device is given below:

1. Open the Eppendorf® tube and take out the sample chamber.

   The sample chambers are supplied in 5 ml Eppendorf® tubes, which can easily be disinfected on the outside.

2. Insert the sample chamber perpendicular to the top of the AeroCollect®, as shown in the picture.

   The arrows on the rear of the sample chamber indicate which side shall face up and which way the chamber shall be pushed in.

3. Push the sample chamber all the way in and during this process it will move into position and be held by a spring. This ensures there is the necessary connection to the electrodes and the pump.

4. AeroCollect® can collect a sample once the sample chamber is correctly inserted.

5. To activate the sampling procedure, press the green button on the device (as shown in the figure). If the pump fails to start it may be because the chamber is incorrectly inserted (for more information about possible causes of faults, see section 5).

6. At 400 V, the pump will start and the sampling procedure will be initiated, which will be indicated by the green LED being lit, while the red LED switches off. If during the sampling procedure the noise that the pump makes changes, check to see whether the chamber is blocked.

7. When AeroCollect® is activated, it will first ramp up to 400 V, which will capture and retain bacteria and viruses. The red LED (with the label wait/error) will be lit in the meantime. The process should take less than 1 second.

8. After the sampling is finished, stop the sampling procedure by pushing the red button and the green LED will switch off.

9. Remove the sample chamber by lightly lifting the tip and pulling. Put the sample chamber back in the associated Eppendorf® tube. Note that you must never try and remove the sample chamber before the sampling procedures has stopped.
3.3 Section specific sampling
Depending on the sector that the AeroCollect® is to be used in, the sample collection procedure may differ. In the corresponding quick guide the section specific sampling procedure is described in detail.

4 Maintenance, disinfections, storage and disposal

4.1 Maintenance
It is recommended that you wipe off any visible dirt or dust on the AeroCollect® using a damp cloth. In cases where the farm is to be sanitised, follow the procedure for the disinfection of the AeroCollect® device described below. If the LED indicators stop working, the AeroCollect® must be immediately sent in for servicing. Refer to the contact information at the end of this manual.

4.2 Replacement of batteries
AeroCollect® uses two AA batteries. The batteries are easy to replace. Simply open the cover on the back of the device. Make sure that you insert new batteries correctly, in accordance with the polarity label in the bottom of the battery holder. Always dispose of used batteries in accordance with the WEEE Directive.

4.3 Storage
When AeroCollect® is not in use, it should be stored in the protective suitcase, which will protect the device from unnecessary moisture, dust and knocks.

The sample chambers must not be removed from the Eppendorf® tubes outside of the section in which the sample is to be collected. This will reduce the risk of potential contamination of the sample chambers, which could result in false positive results.

4.4 Test of the pneumatic connection to the sample chamber
To test the pump system and the O ring, which ensures the pneumatic connection to the sample chamber is intact, it is important to regularly carry out the following procedure:

1. Insert a sample chamber inside the AeroCollect® device.
2. Start the sampling procedure and wait until the pump starts – indicated when the green LED is lit.
3. The suction inlet in the sample chamber is blocked for short intervals. If the O ring is still intact, the sound from the pump will change when the suction inlet is blocked.

4.5 Disinfection of AeroCollect®
Both the AeroCollect® device and its associated case have been designed so that they can be effectively disinfected when necessary. However, we recommend that the device is not transported between farms and not used in several locations. But should this be necessary, the following disinfection procedure must be followed carefully to avoid the spread of potential disease between farms.

1. Remove any visible dust from the device and from the case.
2. Wipe the AeroCollect® device and case using Vircon.
3. Wipe the AeroCollect® device and case using a 70 % ethanol solution.
4. Place the AeroCollect® device in the case and close securely.

When sanitising an infected farm, the above procedure should be followed to disinfect the AeroCollect® device and case in connection with the sanitising procedure.
4.6 Disposal
The authorities require that electrical and electronic equipment is collected and parts from such equipment are recycled. Electrical and electronic equipment that has the WEEE symbol must be taken to the local recycling centre or returned to the supplier.

5 Troubleshooting
If the device does not begin the sampling procedure (and the green LED therefore remains unlit) within a few seconds, carry out the following:

• First, check that the sample chamber is correctly inserted. To avoid false negative readings, sampling with the AeroCollect® device cannot begin if the sample chamber is incorrectly inserted. Therefore, first try to extract the sample chamber and reinsert it.

• The battery power may be too low and unable to power the pump. If the batteries are drained of power and therefore cannot power the pump, the pump will not start and the green LED will remain unlit and the red LED will remain lit.

• If the problem continues, please contact AeroCollect for the purpose of having the device repaired as quickly as possible.

6 Safety
The AeroCollect® device may only be used as intended, i.e. for collecting air samples in veterinary environments. To ensure that the AeroCollect® device is used correctly, the following requirements must be met:

• Always use the correct type of battery (AA).

• Always use only the specially designed sample chambers for the AeroCollect®.

• Always insert the sample chamber in the AeroCollect® device as described above.

• The device must never under any circumstances be exposed to liquids of any kind other than disinfectant when wiping the device as described earlier in this manual.

7 Warranty
The limited warranty that applies to AeroCollect® will be null and void if the following is not complied with:

• The device and sampling chambers must not be exposed to violent knocks or impacts.

• The AeroCollect® device and sampling chambers must not under any circumstances be immersed in water or any other liquid and must be stored in the accompanying case so as to be protected from moisture during those periods when not in use.

• Cleaning and disinfection must be carried out in accordance with the associated section in this manual.

• The AeroCollect® device must not be dismantled.

• When shipping the device, it must be sent in the accompanying case.

If the AeroCollect® device stops working, regardless of the reason, immediately contact AeroCollect for the purpose of determining the cause of the malfunction. See below for contact details.

8 Technical specifications

8.1 Battery
AeroCollect® is equipped with two AA batteries. These may be single use or rechargeable batteries and they must be disposed of in accordance with the manufacture’s instructions.

8.2 Expected battery lifetime
The AeroCollect® device is capable of collecting samples for a minimum of four hours using two fully-charged batteries.

8.3 Operating environment

8.3.1 Recommended temperatures for AeroCollect®:
Storage temperature range: -20°C to +40°C
Transport temperature range: -40°C to +60°C
Normal use temperature range: -20°C to +40°C
8.3.2 Recommended air humidity for AeroCollect®:

- Air humidity with transport, storage and use: 30% to 75% relative air humidity (non-condensing)

- Recommended air pressure for AeroCollect®: Air pressure with transport, normal use and storage: 700–1060 hPa

8.3.3 Recommended temperature for sample chamber:

- Transport and storage temperature range: -80ºC to +90ºC

- Transport of collected samples temperature range: -80ºC to +30ºC

- Normal use temperature range: -20ºC to +40ºC

8.3.4 Recommended air humidity for sample chamber:

- Transport and storage air humidity range: 35% to 75% relative air humidity (non-condensing)

8.3.5 Recommended air pressure for sample chamber:

- Air pressure with transport, normal use and storage: 700–1060 hPa

If the storage, transport and use recommended temperature and relative air humidity ranges are not followed, this can result in the deterioration of the device’s capturing capability.

8.3.6 Precautions with electromagnetic fields:

The device may switch off in strong electromagnetic fields [10 V/m]. If this occurs, switch on the device again and continue with the sampling.

9 Contact information

For more information about the use of AeroCollect®, contact:

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