
**Microbiology of food and animal feeding
stuffs — Carcass sampling for
microbiological analysis**

**AMENDMENT 1: Sampling of poultry
carcasses**

*Microbiologie des aliments — Prélèvement d'échantillons sur des
carcasses en vue de leur analyse microbiologique*

AMENDEMENT 1: Échantillonnage des carcasses de volaille



Reference number
ISO 17604:2003/Amd.1:2009(E)

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Foreword

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Amendment 1 to ISO 17604:2003 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*.

Microbiology of food and animal feeding stuffs — Carcass sampling for microbiological analysis

AMENDMENT 1: Sampling of poultry carcasses

Page 1, Clause 1

Towards the end of the first sentence, delete “(red)” so that the sentence reads:

This International Standard specifies sampling methods for the detection and enumeration of microorganisms on the carcass surface of freshly slaughtered meat animals.

At the end of the last paragraph, add:

Annex D specifies methods for the sampling of poultry carcasses for microbiological analysis.

Pages 13/14

Between Annex C and the Bibliography, insert the following new annex:

Annex D (normative)

Sampling of poultry carcasses

D.1 Scope

This annex specifies methods for the sampling of poultry carcasses for microbiological analysis. The methods include 1) carcass rinsing, 2) skin sampling and 3) carcass swabbing.

D.2 Sampling procedure

The choice of the sampling method depends mainly on the aim of the microbiological examination, the sensitivity required and practical considerations.

Rinsing the whole carcass is a sensitive, non-destructive method for use in the microbiological examination of poultry.

Skin sampling can be non-destructive (e.g. neck skin removal) or destructive (e.g. breast skin removal). Samples can easily be taken from small or large areas of carcass — particularly from the breast — and the

amount taken is most conveniently measured by weighing. Microbial contamination of poultry carcasses is almost entirely on the surface, so sampling of deep tissues, such as muscles, is only necessary in exceptional circumstances.

Swabbing of poultry carcasses is a non-destructive method that can be applied to larger carcasses (e.g. turkeys).

D.3 Sampling frequency

See Clause 4.

D.4 Sampling points

See Clause 5.

Poultry carcasses are usually sampled in the slaughterhouse, either after the inside/outside washer or immediately after chilling (before further processing, such as freezing, cutting or packaging).

D.5 Sampling sites

See Clause 6.

A common method is to rinse a whole poultry carcass. If skin samples are taken, the sites chosen depend on the slaughtering practice and slaughtering equipment used. Neck and breast are the sites which are usually sampled; however, other sites on the carcass can be the most contaminated ones.

D.6 Sampling techniques

D.6.1 Diluent and disinfectant

D.6.1.1 Buffered peptone water (BPW) or another diluent, depending on the microbiological examination to be performed (see ISO 6887-1).

D.6.1.2 Ethanol, 70 % by volume, or alcohol wipes.

D.6.2 Materials

D.6.2.1 Sterile gloves.

D.6.2.2 Stomacher-type bags (sterile), size dependent on the sample size (i.e whether carcass or skin samples are to be taken).

D.6.2.3 Plastic tie wraps or equivalent, to secure the bags (D.6.2.2).

D.6.2.4 Pair of scissors.

D.6.2.5 Sterile scalpels.

D.6.2.6 Sterile forceps.

D.6.2.7 Sterile square templates, with an internal area of, for example, 10 cm² or 25 cm².

D.6.2.8 Sterile swabs, with cotton-wool buds and wooden or plastic shafts.

D.6.3 Carcass rinsing

Carcasses are normally taken off the moving production line. Open a large stomacher-type bag (D.6.2.2) without touching the sterile interior of the bag. Enclose a carcass, while it is still on the line, with the bag and, using both hands, but holding the legs of the carcass through the bag, lift the carcass off the line (i.e. detach its legs from the shackles). Try to avoid taking carcasses with significant volumes of water still draining off them. If such carcasses are taken, remove them, under aseptic conditions, to a separate, disinfected set of shackles and allow the water to drain off before enclosing it in a bag.

Rest the bottom of the bag containing the carcass on a flat surface. Holding the top of the bag slightly open, add sterile diluent (D.6.1.1), usually in a quantity of 400 ml, to the bag, pouring the solution into the carcass cavity and over the exterior of the carcass. Expel most of the air from the bag and then close the top of the bag with, e.g., a tie wrap (D.6.2.3). Holding the bag securely, rinse the carcass inside and out, using a rocking motion, for approximately 1 min. Do this by holding the carcass through the bottom of the bag with one hand and the closed top of the bag with the other hand. Holding the carcass securely in this way, move it through an arc, shifting the weight of the carcass from one hand to the other to ensure that all surfaces (interior and exterior) of the carcass are rinsed. Rest the bag with the carcass on a flat surface and, while supporting the carcass, open the bag. With a gloved hand, remove the carcass from the bag, first letting any excess fluid drain back into the bag. Take care not to touch the interior of the bag with the gloved hand. Secure the top of the bag so that the rinse fluid will not spill out or become contaminated. Alternatively, transfer the rinse fluid under aseptic conditions from the bag to a sterile container. Proceed with the microbiological analysis.

D.6.4 Skin sampling

D.6.4.1 Neck skin sampling

Neck skins are often removed from carcasses as they pass on the production line, so they have to be cut off rapidly, but can be trimmed later and weighed (individually or as a composite sample). Put on sterile gloves (D.6.2.1). Take a pair of scissors (D.6.2.4) and wipe the surface of the blades with alcohol (see D.6.1.2). Open a stomacher-type bag (D.6.2.2) without touching the sterile interior of the bag. Grip the bag at the bottom seam and fold it back over the hand so that it is inside out. Avoiding carcasses with very short neck skins, grip the neck skin of a carcass firmly through the bag and cut it off as rapidly as possible. It may be necessary later to trim off pieces of subcutaneous fat or other non-skin tissue. Measure the sample size by weighing (one neck skin often weighs about 20 g). When necessary, several samples can be combined to give the desired sample size, e.g. 25 g or 50 g.

D.6.4.2 Breast skin sampling

Put on sterile gloves (D.6.2.1). Take the carcass to be sampled and put it on a flat surface, avoiding any contact with the parts of the skin surface to be sampled. Take the required surface area of breast skin, for example 10 cm² or 25 cm², using sterile templates (D.6.2.7), scalpels (D.6.2.5) and forceps (D.6.2.6). Cutting out a measured area of skin can be particularly difficult when sampling carcasses taken before chilling, as the skin is soft and elastic. In this case, an alternative method is to cut out a piece of skin of approximately the desired dimensions and to weigh it. The results of the microbiological analysis can then be calculated with respect to the mass (e.g. expressed as colony-forming units per gram or as presence/absence in 25 g). If a method requires the pooling of skin from e.g. five carcasses, approximately equal portions of skin are required from each. Collect the pieces of breast skin in a stomacher-type bag (D.6.2.2) till the required total surface area or mass has been collected.

D.6.5 Carcass swabbing

See 7.3.

D.7 Storage and transport of samples

See Clause 8.

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