

**Guidance on Establishing
Appropriate Microbiological
Sampling Frequencies in Low
Throughput Slaughterhouses
and Meat Processing Plants**

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Glossary

ACC	Aerobic colony count
FBO	Food business operator
FSMS	Food safety management system
GHP	Good hygiene practices
HACCP	Hazard analysis & critical control point

1. Introduction

Commission Regulation (EC) No 2073/2005, as amended¹, (Article 4) requires that food business operators (FBOs) test, as appropriate, against the microbiological criteria when they are validating and verifying their HACCP (Hazard Analysis & Critical Control Point) based procedures and good hygiene practices (GHP). Annex I of the Regulation establishes harmonised food safety criteria (Chapter 1) and process hygiene criteria (Chapter 2) regarding the presence of certain microorganisms. Chapter 3.2 of Annex I sets rules for bacteriological sampling and sampling frequencies in slaughterhouses and at premises producing minced meat, meat preparations, mechanically separated meat and fresh meat. The Regulation (Article 4) states that the frequency of sampling may be adapted to the nature and size of the food business, provided that the safety and integrity of foodstuffs will not be endangered. Chapter 3.2 allows for exemption of small slaughterhouses and meat establishments producing small quantities, from the frequencies set out in Annex I of the Regulation when justified on the basis of risk analysis and consequently authorised by the competent authority.

Regulation (EC) No 178/2002 as amended, lays down general food safety requirements, according to which food must not be placed on the market if it is unsafe. FBOs are obliged under Regulation (EC) No 178/2002 to withdraw and if necessary, recall unsafe food from the market. Directive 2003/99/EC as amended on the monitoring of zoonoses and zoonotic agents states that the protection of human health against diseases and infections transmissible directly or indirectly between animals and humans (zoonoses) is of paramount importance. Regulation (EC) No 852/2004 as amended (Article 4) requires FBOs to comply with certain microbiological criteria. FBOs are required to take samples, conduct analyses and implement corrective actions in accordance with Regulation (EC) No 2073/2005. Regulation (EC) No 852/2004 (Article 5) requires FBOs to put in place, implement and maintain a procedure or set of procedures based on the HACCP principles.

Official veterinarian verify compliance with the criteria and rules laid down in Regulation (EC) No. 2073/2005 on the microbiological criteria for foodstuffs using techniques such as monitoring, surveillance, audits and inspections in addition to the activities of sampling and analysis. For low throughput establishments, the level of check sampling should be proportionate to the risk. For low throughput slaughterhouses and small meat manufacturing plants, the frequency of sampling

¹ All relevant legislation is available here: <https://www.fsai.ie/legislation.html>

should be determined by the FBO and authorised by the competent authority based on throughput ([Appendix 1](#)) and a standardised risk assessment ([Appendix 2](#)) of each establishment.

A written notice of any exemptions or reduced sampling frequencies should be issued to the establishment (See [Appendix 3](#)). If something changes in the business (e.g. throughput, compliance history), the frequency of sampling must be reviewed.

The sampling frequencies shown in this document may be increased at the discretion of the official veterinarian if microbiological results are unsatisfactory or otherwise justified on the basis of audits or inspections of the premises.

2. Scope

Sampling frequencies are set for certain criteria in Chapter 3 of Annex I in Regulation (EC) No 2073/2005 as amended. This document provides guidance on establishing appropriate microbiological sampling frequencies where exemptions or derogations are allowed. This document applies to low throughput slaughterhouses and meat processing plants.

This document **does not** contain guidance on sampling frequencies where they are not set in the Regulation. Guidance on this is contained in the current version of FSAI Guidance Note No. 27².

² Guidance Note No. 27 on the Enforcement of Commission Regulation (EC) No 2073/2005 on Microbiological Criteria for Foodstuffs. Available at https://www.fsai.ie/resources_publications.html

3. Slaughterhouses

Sampling frequency is based on (i) throughput (see [Appendix 1](#)) and (ii) risk assessment (see [Appendix 2](#)).

Table 1 Sampling requirements for cattle, sheep, goat and pig slaughterhouses based on throughput and risk assessment

Throughput in livestock units per annum ¹	Risk assessment score (see Appendix 2)	Minimum sampling requirement ²
<1500	≤1000	An approach involving no sampling may be applied
	>1000	Five carcass samples (taken representatively from the same batch ³) alternating between species, as appropriate ⁴ , every two months
1500–3000	≤1000	Five carcass samples (taken representatively from the same batch) alternating between species, as appropriate, every four months
	>1000	Five carcass samples (taken representatively from the same batch) alternating between species, as appropriate, every month
3001–5000	≤1000	Five carcass samples (taken representatively from the same batch) alternating between species, as appropriate, every month
	>1000	Five carcass samples (taken representatively from the same batch) alternating between species, as appropriate, every two weeks
>5000	Not applicable	Sampling frequency as per Chapter 3.2 in Regulation (EC) No 2073/2005

¹ See [Appendix 1](#) for definition of livestock units.

² Under Regulation (EC) No 2073/2005 for cattle, sheep, goats and horses, five carcass samples from the same batch taken after dressing but before chilling are required to be tested for Aerobic Colony Count (ACC) and Enterobacteriaceae (**Food category 2.1.1**) and *Salmonella* (**Food category 2.1.3**). For pigs, five carcass samples from the same batch taken after dressing but before chilling are required to be tested for ACC and *Enterobacteriaceae* (**Food category 2.1.2**) and *Salmonella* (**Food category 2.1.4**).

³ According to Regulation (EC) No 2073/2005, 'batch' means a group or set of identifiable products obtained from a given process under practically identical circumstances and produced in a given place within one defined production period.

⁴ As appropriate – Focus on main species but in consultation with the official veterinarian, include some testing of less commonly slaughtered species.

Table 2 Sampling requirements for poultry slaughterhouses¹ based on throughput and risk assessment

Throughput Number of birds per annum ²	Risk assessment score (see Appendix 2)	Minimum sampling requirement ³
<50 000	≤1000	An approach involving no sampling may be applied
	>1000	Five samples (taken representatively from the same batch ⁴) every four months
50 000–150 000	≤1000	Five samples (taken representatively from the same batch) every four months
	>1000	Five samples (taken representatively from the same batch) every two months
>150 000	Not applicable	Sampling frequency as per Chapter 3.2 in Regulation (EC) No 2073/2005

¹ Under Regulation (EC) No 2073/2005 poultry means broilers and turkeys only. It does not include duck.

² 150 poultry birds = 1 livestock unit. See [Appendix 1](#) for more information.

³ Under Regulation (EC) No 2073/2005 for broilers and turkeys, five carcass samples from the same batch taken after chilling are required to be tested for *Salmonella* spp. (**Food category 2.1.5**). For broilers, five carcass samples from the same batch taken after chilling are required to be tested for *Campylobacter* spp. (**Food category 2.1.9**).

⁴ According to Regulation (EC) No 2073/2005, 'batch' means a group or set of identifiable products obtained from a given process under practically identical circumstances and produced in a given place within one defined production period.

4. Small Meat Manufacturing Establishments

Sampling frequency is based on throughput (see Table 3 and 4) and risk assessment ([Appendix 2](#)).

Table 3 Sampling requirements for establishments which manufacture minced meat and meat preparations based on throughput and risk assessment

Throughput (Tonnes per week)		Risk assessment score (see Appendix 2)	Minimum sampling requirement ^{3, 4}
Minced meat ¹	Meat preparation ²		
<0.5	<0.5	≤1000	An approach involving no sampling may be applied
		>1000	Five samples (taken representatively from the same batch ⁵) every four months
0.5 to 1	0.5 to 1	≤1000	Five samples (taken representatively from the same batch) every four months
		>1000	Five samples (taken representatively from the same batch) every two months
>1 to 5	>1 to 5	≤1000	Five samples (taken representatively from the same batch) every two months
		>1000	Five samples (taken representatively from the same batch) every month
>5	>5	Not applicable	Sampling frequency as per Chapter 3.2 in Regulation (EC) No 2073/2005

¹ Minced meat is defined as boned meat that has been minced into fragments and contains less than 1% salt (Regulation (EC) No 853/2004).

² Meat preparations are defined as fresh meat, including meat that has been reduced to fragments, which has had foodstuffs, seasonings or additives added to it or which has undergone processes insufficient to modify the internal muscle fibre structure of the meat and thus to eliminate the characteristics of fresh meat (Regulation (EC) No 853/2004).

³ Under Regulation (EC) No 2073/2005, five samples of **minced meat** taken from the same batch are required to be tested for ACC and *E. coli* (**Food category 2.1.6**). Five samples of **meat preparations** taken from the same batch are required to be tested for *E. coli* (**Food category 2.1.8**). Five samples of **minced meat** and **meat preparations** taken from the same batch are required to be tested for *Salmonella* (**Food category 1.5 [made from poultry]** and **1.6 [made from other species than poultry]**).

⁴ **Food category 1.4** minced meat and meat preparations **intended to be eaten raw** should be sampled in accordance with the frequency in Chapter 3.2 of Annex I of the Regulation.

⁵ According to Regulation (EC) No 2073/2005, 'batch' means a group or set of identifiable products obtained from a given process under practically identical circumstances and produced in a given place within one defined production period.

Table 4 Sampling requirements for fresh poultry meat cutting plants¹ based on throughput and risk assessment

Throughput (Tonnes per week)	Risk assessment score (see Appendix 2)	Minimum sampling requirement ²
<10	≤1000	An approach involving no sampling may be applied
	>1000	Five samples (taken representatively from the same batch ³) every four months
10 to 20	≤1000	Five samples (taken representatively from the same batch) every four months
	>1000	Five samples (taken representatively from the same batch) every two months
>20	Not applicable	Sampling frequency as per Chapter 3.2 in Regulation (EC) No 2073/2005

¹ Cutting and processing establishments other than those adjacent to a slaughterhouse cutting and processing meat received only from this slaughterhouse, shall also take samples for *Salmonella* analysis. When doing so, they shall give priority to whole poultry carcasses with neck skin, if available, but ensuring that also poultry portions with skin and/or poultry portions without skin or with only a small amount of skin are covered, and that choice shall be risk-based.

² Under Regulation (EC) No 2073/2005, five samples of fresh poultry meat taken from the same batch are required to be tested for *Salmonella* Typhimurium and *Salmonella* Enteritidis (**Food category 1.28**). This criterion shall apply to fresh meat from breeding flocks of *Gallus gallus*, laying hens, broilers and breeding and fattening flocks of turkeys.

³ According to Regulation (EC) No 2073/2005, 'batch' means a group or set of identifiable products obtained from a given process under practically identical circumstances and produced in a given place within one defined production period.

Appendix 1 Definition of livestock units for low-capacity cattle, sheep, goat, pig and poultry slaughterhouses

Animal type	Live weight	Livestock unit
Cattle ¹	>300 kg ('adult')	1.0
	<300 kg ('other')	0.5
Horses ²	All	1.0
Sheep/goats ³	All	0.05
Pigs ²	>100 kg	0.20
	15–100 kg	0.15
	<15 kg	0.05
Animal type	Number of birds slaughtered	Livestock unit
Poultry ⁴	150	1.0

¹ Livestock units for adult bovine animals defined as by Council Regulation (EC) No 1234/2007, Part IV (2).

² Livestock units as per definitions laid down in Article 17(6) of Regulation (EC) No 1099/2009.

³ Livestock units for sheep/goats as defined by S.I. No. 22 of 2020, 5. (14) (f).

⁴ Equivalent livestock unit for poultry calculated using the criteria set down in Article 7(1a) in Commission Delegated Regulation (EU) 2019/624 which defines low-capacity poultry slaughterhouses as those which handle <1,000 livestock units per year or <150,000 poultry per year.

Appendix 2 Risk assessment checklist

Risk factor	High risk Frequently unsatisfactory results <i>(Circle score that applies)</i>	Medium risk Occasional unsatisfactory results <i>(Circle score that applies)</i>	Low risk Seldom or rarely unsatisfactory <i>(Circle score that applies)</i>
1. Structural hygiene - Design and maintenance of premises and equipment Have any minor or serious issues been identified and if so, have they been resolved satisfactorily?	200	100	0
2. Operational hygiene - Sanitation of premises and equipment Have any lapses in operational hygiene been identified, and if so, has the FBO responded in a timely and satisfactory manner?	200	100	0
3. Intake of raw material: a. Slaughterhouses – <i>e.g. have issues arisen with cleanliness of animals, food chain information, animal health and welfare (including relevant control programmes)?</i> b. Meat processing plants – <i>e.g. have issues arisen with the use of approved suppliers, product specifications and intake controls such as temperature & traceability checks?</i>	200	100	0
4. Food safety management system (FSMS) – Overall design and implementation Has an appropriate HACCP plan been established and is it being effectively implemented?	200	100	0
5. Results of previous microbiological or other hygiene checks, e.g. rapid tests (e.g. have any minor or serious non-compliances been identified and corrective actions carried out?)	200	100	0

Risk factor	High risk Frequently unsatisfactory results <i>(Circle score that applies)</i>	Medium risk Occasional unsatisfactory results <i>(Circle score that applies)</i>	Low risk Seldom or rarely unsatisfactory <i>(Circle score that applies)</i>
6. Compliance history and culture General level of compliance in the plant and the response of the FBO to issues as they are identified.	200	100	0
7. Training, experience and competency of personnel Have all staff received adequate training appropriate to their duties?	200	100	0
8. Customer: Type & Distribution <ol style="list-style-type: none"> Proportion of vulnerable groups in customer base. Is there adequate labelling of product & traceability (to include a clearly defined batch system for each product)? Is there hygienic storage during transport (e.g. separation of raw & ready-to-eat product)? Maintenance of cold chain during distribution. 	200	100	0
9. Variation within the processes (e.g. are there multiple processes or changes during production such as species variation, multiple products, shift working & high staff turnover?)	200	100	0
10. Maintenance of the cold chain Maintenance of appropriate temperatures in all temperature-controlled areas and recording of temperatures.	200	100	0
Subtotal			
Total risk assessment score			

Appendix 3 Template for written notice to FBO detailing any exemptions or reduced sampling frequencies

When justified on the basis of a risk analysis, and consequently authorised by the Competent Authority, small slaughterhouses and establishments producing minced meat, meat preparations and fresh poultry meat in small quantities, may be exempted from sampling frequencies laid out in Regulation (EC) No 2073/2005. Guidance Note 35 sets out the criteria for such exemptions.

Based on a risk analysis XXX County Council authorises an exemption from sampling under Regulation (EC) No 2073/2005 to FBO XXX for the following food categories...

Based on a risk analysis XXX County Council authorises an approach involving a reduced frequency of sampling under Regulation (EC) No 2073/2005 to FBO XXX.

Agreed sampling frequencies are as follows:

Name of food category - Sampling frequency

Exemptions and reduced sampling frequencies are subject to review on an annual basis, or when any changes occur such as increases/decreases in throughput or changes to compliance culture.

Please immediately notify any changes in throughput/activities to the official veterinarian supervising your food business.



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