

CA18105



RIBMINS

Risk-based meat inspection and
integrated meat safety assurance

Campylobacter in poultry

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Campylobacter in poultry

- Campylobacteriosis is the most commonly reported foodborne gastrointestinal infection in humans in the EU
- The number of confirmed cases of human campylobacteriosis was 127,840 in 2021- corresponding notification rate of 41.1 cases per 100,000 population
- Figures from our subgroup:
- **UK**- much higher prevalence than EU standard. 110-120 per 100,000 population
- **Ireland**- above average EU notification rate at 62.9 cases per 100,000. CA sampling of chilled broiler carcasses showed 58.5% positive rate.
- **Netherlands**-taken v seriously. Notification rate of 24.1 so well under EU average. 23.7 % positive samples during CA sampling.
- **Poland**- Only 616 cases in humans in 2021 so notification rate of 1.6. 32.4% positive sampling in slaughterhouse by CA sampling. Biggest Prevalence in carcasses has substantially reduced. . No HEI used in this respect.
- **Ethiopia**-no surveillance system in place. High prevalence in chickens. Very high prevalence in children. No evidence of data as very few studies undertaken. Little monitoring in factories, esp microbiological studies, just gross lesion inspection
- **Belgium**- Notification rate of 28.3,. Surveillance system at slaughter house level-one weekly 15 carcasses randomly sampled from 5 flocks- mandatory. No sampling on farm level.
- **Serbia**. Human incidence 5.3 cases per 100,000. High levels of AMR to campylobacter. Farm level prevalence- 70%
- **Bosnia and Herzegovina**- 27.5% positive rate in carcasses though new research suggests it's higher. EU legislation not followed stringently in relation to analyses in some laboratories.

Risk categorisation case study 2

- Assuming you are a risk manager and you have to categorize 4 farms according to the public risk that Campylobacter poses.
- Fill in one table for each farm scenario and classify the farms as 1) low risk for Campylobacter, 2) medium risk for Campylobacter and 3) high risk for Campylobacter
- Categorization of 3 poultry abattoirs also required- using FSMS assessment criteria and levels

Farm A:

Farm A is a medium-scale commercial broiler farm situated in a rural area, far from industrial facilities. It operates within an old farm building that has been adapted into a chicken house, but no other animals are present on the farm. Farm uses different hatcheries to source day-1 chicks. The farm utilizes intensive indoor housing systems, which do not allow for outdoor access for broilers. Cleaning and disinfection and all-in-all-out procedures are in place, together with bird control and pest control. All visitors are required to wear farm specific clothing and footwear and access to the chicken houses is controlled. There is an ante-room at the entrance of chicken house and hand-washing facilities are present. To meet the broilers' nutritional needs, the farm follows a rotation system with various feed suppliers, incorporating commercial feed sources that include 8-10% fish meal as a protein source. Water is sourced from a mains system.

There is no partial flock depopulation during the production cycle. Broilers are administered antibiotics in case of diseases, but not in the last crop. The historical results of microbiological tests for *Campylobacter* 5 days before slaughter were negative for the last batch, and positive in the previous three batches.

Regarding waste management, Farm A employs anaerobic digestion methods followed by proper disposal in designated areas.

All staff are regularly trained on biosecurity, hygiene and job specific roles and the farm assesses the effectiveness and application of the training on an ongoing basis to identify failures and bad practices. There is no policy or written record in corrective actions on staff re-training as a consequence of detected non-conformity.

Farm B:

Farm B is a small-scale family-run chicken farm. It is in a rural setting. The farm follows a free-range (backyard) farming approach, allowing the birds to have unrestricted access to outdoor runs during the

Risk management Summary

- So what were the main reasons that we risk categorized the high risk farm and the low risk farm?
- High risk farm was campylobacter positive, regularly carry out thinning, high use of antibiotics, home made diet, poor biosecurity practices
- Low risk farm- sourced water from main system, no thinning (important HEI), good biosecurity practices in general, no other animals. Depopulation not usually done.

<p>General Abattoir 1 is processing 180,000 broiler chicken a day (birds 2.5kg throughout the day), at a line speed of 150 birds per minute (20 work hours a day). The site is only a few years old and in a very good condition. The layout follows modern requirements follows a linear lairage to chiller processing, without crossover of processes and overlap of dirty and clean areas.</p>	<p>General Abattoir 2 is processing 4,000 broiler chicken a day (different sizes throughout the day) at a line speed of up to 20 birds per minute (6 work hours a day). The site is 40 years old, with occasional signs of poor maintenance and disrepair. The layout allows for mostly linear processing from lairage to chillers, with some overlap (e.g., the collected by-products must cross the slaughter line for removal) and the occasional lack of separation between clean and dirty areas.</p>	<p>General Abattoir 3 is processing 70,000 broiler chicken a day (birds 2.5kg in the morning, then 1.5kg in the afternoon), at a line speed of 135 birds per minute (9 work hours a day). The site is 20 years <u>old, but</u> maintained to a high standard. The layout allows for mostly linear processing from lairage to chillers, with some overlap (e.g., the collected by-products must cross the slaughter line for removal).</p>
<p>Selection of birds for slaughter and information flow Abattoir sources birds from the farms and purchasing policy states that the farms (suppliers) and flocks are pre-selected, with the aim to use different slaughter practices, control measures or interventions in the abattoir, that would correspond to the potential or perceived risk level of the incoming birds. Abattoir insists that farms provide more information in the FCI, beyond what is required by the legislation (for example, flock health status, recent vaccinations, biosecurity status). Abattoir does not accept birds from Salmonella positive flocks where <u>high risk</u> Salmonella is detected (e.g. serotypes Enteritidis and Typhimurium), but can process birds from farms where low-risk Salmonella strains are detected, with appropriate actions taken. Abattoir systematically inform source farms of PM findings and lab results on pathogens and does follow up with the aim of hazard reduction at farm source.</p>	<p>Selection of birds for slaughter and information flow Abattoir sources birds from the farms, both integrator (one farm owned by the abattoir) and other nearby farms. Purchasing policy is based on the market conditions and not on the potential or perceived risk level of the incoming birds. Abattoir do not require farms to provide more information in the FCI, beyond what is required by the legislation. Abattoir does not accept birds from Salmonella positive flocks where <u>high risk</u> Salmonella is detected (e.g. serotypes Enteritidis and Typhimurium), but can process birds from farms where low-risk Salmonella strains are detected, with appropriate actions taken. Abattoir does not inform source farms of PM findings and lab results on pathogens and it does not follow it up with the aim of hazard reduction at farm source.</p>	<p>Selection of birds for slaughter and information flow Abattoir sources birds from the farms and purchasing policy states that the farms (suppliers) and flocks are pre-selected, with the aim to use different slaughter practices, control measures or interventions in the abattoir, that would correspond to the potential or perceived risk level of the incoming birds. However, this only applies to integrator farms (that have a contract with the abattoir) and not to other farms where abattoir occasionally source birds from during the high demand periods. Abattoir do not require farms to provide more information in the FCI, beyond what is required by the legislation. Abattoir accepts birds from Salmonella positive flocks where both high- and low-risk Salmonella is detected, with appropriate actions taken. <u>Abattoir</u> inform source farms of PM findings and lab results on pathogens only upon requests by the farms and follows it up with the aim of hazard reduction at farm source only upon farm request.</p>
<p>Birds arrival, <u>lairaging</u> and slaughter Birds arrive throughout the day during operations and are</p>	<p>Birds arrival, <u>lairaging</u> and slaughter Birds arrive the abattoir at all times inside operational hours</p>	<p>Birds arrival, <u>lairaging</u> and slaughter Birds arrive throughout the day during operations and are</p>

Abattoir 1

FSMS-Cs assessment criteria and levels		Poultry abattoir	
		Assessment levels / options / categories	Score
6	GMPs & GHPs	(score this component in its own, separate Tab)	0.88
7	Hygiene assessment systems (SCORE FIXED)	The abattoir is systematically hygiene assessed only by internal sources through audits. The abattoir systematically implements measures to follow up non-conformities	0.50
8	Staff training	(score this component in its own, separate Tab)	1.00
9	Other PRPs (pest control, storage conditions etc.) (SCORE FIXED)	Visual inspection and documentary evidence (including from internal and external audits) indicate that some / a number of PRPs relevant to carcase meat safety are NOT implemented and monitored effectively	0.50
10	HACCP	(score this component in its own, separate Tab)	1.00
11	Carcase interventions at slaughter	Multiple interventions, including post-evisceration intervention (hot water wash, ultrasound, etc) and crust freezing	1.00
12	Chilling	Crust freezing	1.00
13	Use different sale channels (SCORE FIXED)	The abattoir occasionally uses different sales channels to control pathogens, depending on the level of risk on the carcase, but it is not systematically	0.50
14	Inform and follow up with farms	The abattoir systematically informs the source farms of meat inspection findings and lab results on pathogens and does follow up with the aim of hazard reduction at source	1.00
15	Monitoring and continuous improvement (SCORE FIXED)	(score this component in its own, separate Tab)	0.50
16	Microbiological testing	(score this component in its own, separate Tab)	1.00
17	Communication (SCORE FIXED)	Some evidence of an internal and external communication chain on food safety issues is present	0.50
18	Internal auditing	(score this component in its own, separate Tab)	1.00
Abattoir FSMS performance score			15.38
out of			18 = 85.4% performance
Abattoir FSMS performance category			High
<p>Notes for the user</p> <p>1. The objective of this tool is to assign the abattoir in one of three performance categories: Low, medium and high</p> <p>2. For this you must score the components according to the abattoir profile you have been provided with</p> <p>3. The components in blue font must be scored in this sheet and the ones in black font in the separate sheets (the score for these components will update)</p>			

Abattoir 2

	A	B	C	D	E	F	G	H	I
1	FSMS-Cs assessment criteria and levels		Poultry abattoir						
2									
3			Assessment levels / options / categories	Score					
4	1	FCI as it is now	The abattoir systematically collects, analyses and responds to the information in the FCI, prior to sending it to the CA	1.00					
5	2	FCI with additional WG2 suggestions (= improved FCI)	Collected FCI includes only FCI according to the legislation and not the additional WG2 suggestions (i.e. improved FCI).	0.00					
6	3	Preselection of herds before slaughter (WP2)	The abattoir does not systematically apply risk based categorisation of herds or farms or suppliers, including transport for adapting the slaughter process. Animals without information are not considered as high risk	0.00					
7	4	Logistic slaughter	The abattoir occasionally applies logistic slaughter principles (slaughtering order) to address different levels of risk from animals of different states of health and cleanliness	0.50					
8	5	Adapting line speed	Abattoir occasionally adapts the speed of the line to the level of hazard present on live animals	0.50					
9	6	GMPs & GHPs	[score this component in its own, separate Tab]	0.25					
10	7	Hygiene assessment systems (SCORE FIXED)	The abattoir is systematically hygiene assessed only by internal sources through audits. The abattoir systematically implements measures to follow up non-conformities	0.50					
11	8	Staff training	[score this component in its own, separate Tab]	0.00					
12	9	Other PRPs (pest control, storage conditions etc.) (SCORE FIXED)	Visual inspection and documentary evidence (including from internal and external audits) indicate that some / a number of PRPs relevant to carcass meat safety are NOT implemented and monitored effectively	0.50					
13	10	HACCP	[score this component in its own, separate Tab]	0.13					
14	11	Carcass interventions at slaughter	No intervention	0.00					
15	12	Chilling	Water chilling	0.00					
16	13	Use different sale channels (SCORE FIXED)	The abattoir occasionally uses different sales channels to control pathogens, depending on the level of risk on the carcass, but it is not systematically	0.50					
17	14	Inform and follow up with farms	Abattoir does not systematically inform source farms of meat inspection findings and lab results on pathogens and does not follow up with the aim of hazard reduction at source	0.00					
18	15	Monitoring and continuous improvement (SCORE FIXED)	[score this component in its own, separate Tab]	0.50					
19	16	Microbiological testing	[score this component in its own, separate Tab]	0.25					
20	17	Communication (SCORE FIXED)	Some evidence of an internal and external communication chain on food safety issues is present	0.50					
21	18	Internal auditing	[score this component in its own, separate Tab]	0.33					
22				Abattoir FSMS performance score	5.46	out of	18	=	30.3% performance
23				Abattoir FSMS performance category	Low				
24	Notes for the user								
25	1. The objective of this tool is to assign the abattoir in one of three performance categories: Low, medium and high								
26	2. For this you must score the components according to the abattoir profile you								
27									
28									
29									

Abattoir 3

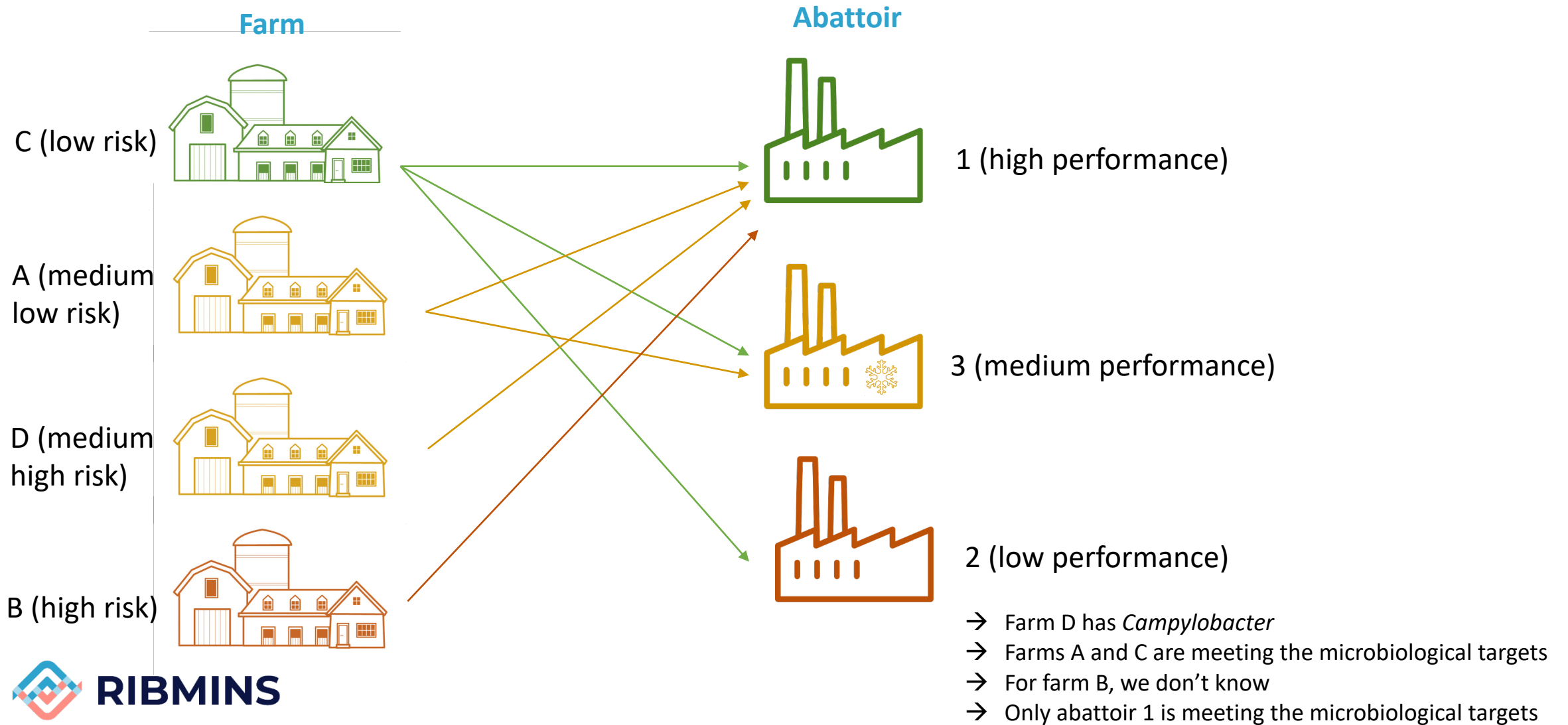
The abattoir occasionally applies logistic slaughter principles (slaughtering order) to address different levels of risk from animals of different states of health and cleanliness

FSMS-Cs assessment criteria and levels		Poultry abattoir					
		Assessment levels / options / categories	Score				
1	FCI as it is now	The abattoir systematically collects, analyses and responds to the information in the FCI, prior to sending it to the CA	1.00				
2	FCI with additional WG2 suggestions (= improved FCI)	Collected FCI includes only FCI according to the legislation and not the additional WG2 suggestions (i.e. improved FCI).	0.00				
3	Preselection of herds before slaughter (WP2)	The abattoir occasionally applies risk based categorisation of herds or farms or suppliers, including transport for adapting the slaughter process. Animals without information are treated as high risk.	0.50				
4	Logistic slaughter	The abattoir occasionally applies logistic slaughter principles (slaughtering order) to address different levels of risk from animals of different states of health and cleanliness	0.50				
5	Adapting line speed	Abattoir systematically does proactively adapt the speed of the line to the level of hazard present on live animals	1.00				
6	GMPs & GHPs	(score this component in its own, separate Tab)	0.25				
7	Hygiene assessment systems (SCORE FIXED)	The abattoir is systematically hygiene assessed only by internal sources through audits. The abattoir systematically implements measures to follow up non-conformities	0.50				
8	Staff training	(score this component in its own, separate Tab)	0.50				
9	Other PRPs (pest control, storage conditions etc.) (SCORE FIXED)	Visual inspection and documentary evidence (including from internal and external audits) indicate that some / a number of PRPs relevant to carcass meat safety are NOT implemented and monitored effectively	0.50				
10	HACCP	(score this component in its own, separate Tab)	0.50				
11	Carcass interventions at slaughter	No intervention	0.00				
12	Chilling	Dry air forced chilling	0.50				
13	Use different sale channels (SCORE FIXED)	The abattoir occasionally uses different sales channels to control pathogens, depending on the level of risk on the carcass, but it is not systematically	0.50				
14	Inform and follow up with farms	The abattoir occasionally informs the source farms of meat inspection findings and lab results on pathogens and does follow up with the aim of hazard reduction at source, but not systematically	0.50				
15	Monitoring and continuous improvement (SCORE FIXED)	(score this component in its own, separate Tab)	0.50				
16	Microbiological testing	(score this component in its own, separate Tab)	0.50				
17	Communication (SCORE FIXED)	Some evidence of an internal and external communication chain on food safety issues is present	0.50				
18	Internal auditing	(score this component in its own, separate Tab)	0.83				
			Abattoir FSMS performance score	9.08	out of	18	= 50.5% performance
Notes for the user			Abattoir FSMS performance category Medium				
1. The objective of this tool is to assign the abattoir in one of three performance categories: Low, medium and high							

FSMS Component scores | 6. GHP & GMPs | 8. Staff training | 10. HACCP | 16. Microbiological testing | 18. Internal auditing | +

90%

Case 2: Campylobacter in poultry



Summary and recommendations

- Important FSMS parameters for *Campylobacter*
 - Continuous monitoring
 - Chilling
 - Carcass interventions
 - Risk-based pre-selection of flocks
 - Microbiological testing
- New HEI developed, evaluated and implemented for risk categorization and balancing of the risks
 - In an integrated way on the farm to the chilled carcass