



## **Hygiene Performance Rating for slaughtering of cattle, sheep, and pigs**

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The Hygiene Performance Rating (HPR) protocol is developed by Animalia, Norway. The unique auditing tool for assessment of slaughter hygiene has been used in Norwegian abattoirs for the last 10 years. The HPR evaluate and documents visually each operation on the slaughter line, assessing the factors that can affect the slaughter hygiene. It is based on systematic evaluation of general hygienic practices of each operation. The operators' hygienic behaviour and risk handling of the carcasses along with routines and management, is assessed and the scores are punched into a web based application.

The HPR audit starts in the morning, before the slaughtering has started, with an inspection of the quality of washing and cleaning of the slaughter line, and observation of the preparation routines of the operators. The HPR has detailed records from killing to grading of the finished carcasses. The questions in the scheme are related to the quality and frequency of hand washing, two-knives method with sterilizers (Taormina & Dorsa, 2007), compliance with GHP, especially at dehiding/deskinning or evisceration where hide/skin or intestines might contaminate the meat. A major focus for all slaughter operations is unnecessary contact between the clean carcass and (dirty) hands or knives, equipment, furnishing etc. The “worst” observed practise from the number of observed operational repeats is recorded, not the mean value of all the observed repeats. The condition of the building/premises, how the slaughter line is organized and managed, the use and sanitation of technical equipment, and working routines are other factors being assessed. Administrative procedures and management for both the abattoir personnel and local Food Safety Authority's personnel are also included, as this is important for the attitudes and motivation of the employees.

### **Some registrations are performed:**

- Temperature in hot water sanitation (for knife, saws, scissors etc) in morning, midday and end of the day.
- Counting number of intestines/rectums with wholes (%)

- Lines using bagging with plastic bags on rectum: Counting number of rectums without bags (%)
- Counting number of intestines/stomach with wholes (%)
- Counting tonsils cut open for pigs (%)
- Counting tonsils residues attached to pig carcasses (%)
- Counting visible spots (faecal spots, wool, or hand marks) on carcasses (%)
- Counting unacceptable amount of blood on carcasses (%)
- Counting unacceptable amount of spine, sawdust, hair (%)

Sections along the slaughter line	Cattle	Sheep	Pigs
Management and buildings: cleaning, materials maintenance, tidy, working cloths, shearing of sheep	x	X	x
Sticking and bleeding	x	x	x
Rodding	x	(x)	
Pre-skinning	x	x	Scolding, dehairing, singeing
Skinning (hide/skin removal)	x	x	
Head removal	x	x	x
Evisceration	x	x	x
Carcass splitting/opening	x	X breast opening	x
Meat inspection	x	x	x
Trimming with knife	x	x	x
Grading, weighing	x	x	x
Offal control	(x)	(X)	(x)
End control	x	x	x

The observations are given a score from 1 to 3, where 1 means “ok”, 2 = “potential for improvement”, and 3 = “not acceptable”. Scores for each position is multiplied with a weight factor for hygienic impact and risk (1, 3, 6 or 12) and economic consequences (1 or 2) describing whether the abattoir must invest a large sum of money (1) or if it is a cheap quick-fix (2), and calculated into a percentage where 100 % is perfect hygiene. The percentages for each operation (12 for sheep and 13 for cattle) are calculated into a total Hygiene Performance Rating result for the slaughter line.

A report with the results and detailed comments is available on-line for the abattoir. Photos and videos taken during the audit provides objective examples of good, suboptimal, or non-acceptable practices directly from the slaughter line for recommended improvements to be

made. In this way, the operators themselves see their risk-behaviour, and the abattoirs can improve slaughter hygiene at each operation on the slaughter line. The effect of this audit on carcass contamination has not been evaluated before, but it has generally been regarded as a useful tool for training of the staff.



4. Forflåing					
#	Kontrollpunkt	O	ØV HV	Kommentar	
47	Er alle arbeidsposisjoner tilrettelagt med vask	1	1	6	
48	Er alle arbeidsposisjoner tilrettelagt med knivsterilisator	1	1	6	
49	Er alle arbeidsposisjoner, der det er nødvendig, tilrettelagt med utstyrsterilisator	1	1	6	
50	Sitter vasker hensiktsmessig plassert i forhold til arbeidsrytmen	1	1	6	
51	Sitter knivsterilisator hensiktsmessig plassert i forhold til arbeidsrytmen	1	1	6	
52	Sitter utstyrsterilisator hensiktsmessig plassert i forhold til arbeidsrytmen	1	1	6	
53	Sitter vasker slik plassert at det ikke spruter vann på kjøttet ved bruk	1	1	6	
54	Sitter knivsterilisator slik plassert at det ikke spruter vann på kjøttet ved bruk	1	1	6	
55	Sitter utstyrsterilisator slik plassert at det ikke spruter vann på kjøttet ved bruk	1	1	6	
56	Er knivsterilisatoren slik konstruert at hele bladet og overgangen til skaftet er ned i vannet	1	1	6	
57	Er det såpe tilgjengelig ved vasken	3	2	6	Det manglet såpe på to posisjoner. Det er vesentlig å ha såpe på alle posisjoner for at alle operatørene skal kunne holde hendene reine gjennom hele dagen. Hendene MÅ vaskes med såpe jevnlig.
58	Temperatur på vann i håndvask	1	2	6	
59	Temperatur i knivsterilisator ved slaktestart	1	2	6	Temperatur: 82 °C
60	Temperatur i knivsterilisator gjennom dagen	3	2	6	Temperatur: 62 °C På brystulleposisjonen var temperaturen i vannet all for lavt.
61	Temperatur i utstyrsterilisator ved slaktestart	2	2	6	
62	Temperatur i utstyrsterilisator gjennom dagen	3	2	6	Temperatur: 65 °C Temperaturen på vannet som traff bakbeinsaksa ble målt til 65 grader. I utgangspunktet er vanntemperaturen høyere, men vannmengden var skrudd ned så mye at det ikke var mulig å varme opp saksa tilfredsstillende. Når operatøren så måleresultatet, skrudde han opp vannmengden, og temperaturen steg med en gang. Dette er en klar operatørfeil.

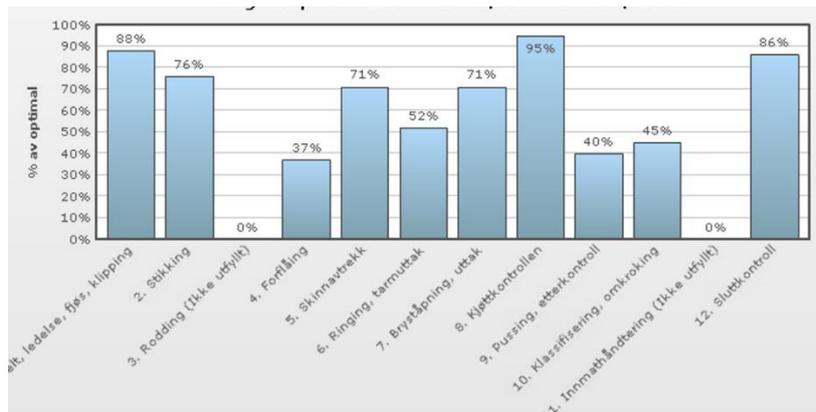


Figure 1. The Hygiene Performance Rating summary graph shows the percentage at each operation along the slaughter line. 100 % means perfect slaughter hygiene, and the sections with low percentage need to focus on improving the hygiene. Look at the comments for recommendations for improvements. (0% means not relevant at this slaughter line). A total result for the slaughter line in percentage is also calculated.