



Annex 8 Broiler Evaluation System



## Introduction

The evaluation system of broilers on the slaughter line forms an important part of the IKB Kip regulation. The evaluation itself gives the broiler farmer as well as the abattoir a picture of the quality of the broilers supplied. Parameters that allow the welfare of the flock to be measured are important. With this information, the broiler farmer can adjust the factors affecting the welfare and/or carcass quality of the broilers for the next cycle, if necessary. For the abattoir, the quality evaluation is important for the slaughter and processing process and/or to determine the destination of the meat. A thorough intake inspection at the abattoir should prevent as many transport errors and catching errors as possible.

Information about externally visible carcass deformations and/or lack of uniformity must be automatically recorded. The information obtained that way is also of interest to other stakeholders, such as the integration, feed manufacturer and the hatchery. IKB Kip recommends that the information is regularly assessed with those parties.

### Underlying principles of the evaluation system

The system must focus on characteristics that are related to animal welfare and/or the external carcass quality. These aspects are: emptiness of intestinal tract, injuries sustained during catching and loading, quality of the bedding, scabby hips and uniformity. The evaluation must be uniform, meaning that individual characteristics of one flock evaluated by different people or abattoirs must be comparable.

### Evaluation methodology

Of each poultry transport vehicle, a sample of at least 100 broilers must be assessed per separate deviation. For this purpose 50 chicks are assessed on about 1/3 of the flock and another 50 chicks on about 2/3 of the flock.

Several characteristics can be combined in one assessment cycle.

### Characteristics to be assessed

1. Emptiness of intestinal tract
  - a. Crop
  - b. Feed in the stomach
2. Injury
3. Litter quality
  - a. Foot pad dermatitis
  - b. Sole pad lesions
  - c. Manure stains breast
4. Scabby hips (scratches / injuries)
5. Uniformity

**Threshold value**

The deviations are shown on the pictures in this brochure. The threshold value gives the volume or the number of a certain deviation, above which the deviation is considered unacceptable, both in terms of quality and animal welfare. Any deviations for which the threshold value is exceeded are recorded during the quality evaluation.

**Determination of percentage exceeding threshold value**

In order to report the evaluation to the poultry farmer, the result is shown in percentages.

Percentage of exceeding threshold value = (number of deviations / number evaluated<sup>1</sup>) x 100%

**Notification to the poultry farmer**

If the percentage of exceeding threshold value is too high for one or more of the evaluations (see Table 1 for percentage extent), the broiler farmer who delivered the chicks will be informed immediately. It enables him to come and verify the accuracy of the evaluation result on site, if he wishes.

The supplier (broiler farmer, trader, etc.) receives the final result in writing from the abattoir within two working days after the chicks have been evaluated.

<sup>1</sup> 'Number evaluated' can differ depending on the characteristic animals, containers or in the case of heel dermatitis/foot-sole lesions, feet.

## 1. Empty intestinal tract

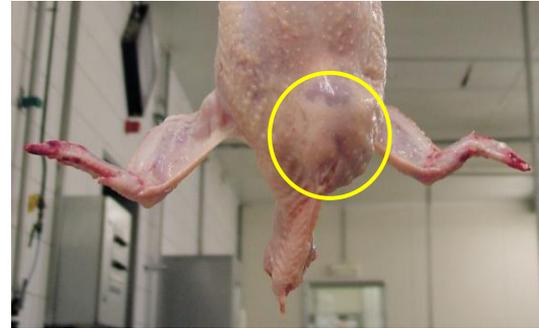
Whether the intestinal tract is empty can be determined from the fullness of the crop. In addition, it can be established from the presence of any feed in the stomach (this is not mandatory).

### a. Full crop

**Description:** a full crop is interpreted as a clearly visible and/or palpable content in the crop that does not feel 'watery'.

**Random check:** for this mandatory evaluation, 100 chicks must be checked per poultry transport vehicle.

**Threshold value:** full crop is bigger than 2.0 cm<sup>2</sup>.



### b. Stomach content (not mandatory)

**Description:** the stomach content is checked by determining the quantity of feed in the stomach.

**Random check:** the quantity of feed in the stomach is established based on at least ten broilers per poultry transport vehicle.

**Threshold value:** the stomach is filled no more than half with feed.

## 2. Injury

All flocks are assessed for injury in the last phase of the life of the animals. Injury occurs during the life of the animals or during consciousness. This is contrary to damage. Damage occurs during the slaughtering process and after the animal was unconscious or dead; there is no suffering.

### Counting on the slaughter line

Counting should take place of dressed carcasses from a well-lit position so that the carcasses (including wings) can be properly assessed. Counting should be done on the breast side of the carcasses.

### Number of minutes counting on the slaughter line

It is important to count for at least two consecutive minutes. The timeframe of two minutes was chosen as an entire container can be counted in that time. With a low belt speed, it would be necessary to count for more than two minutes in order to score an entire container.

The number of injuries per count (in the same flock) can vary. To obtain a good impression of the entire flock, it is necessary to count at least twice. At 1/3 of the flock and at 2/3 of the flock. An average is calculated from these counts.

### Injuries included in the count

As bruising, fractures or luxations in live animals are almost always associated with haemorrhages, only haemorrhages are counted. Only count dark red large (diffuse) haemorrhages from three centimetres (diameter) on the wing, leg or body from three centimetres. Background information about haemorrhages and discoloration has been included at the end of this document.

### ***Attn.: only count one injury per animal.***

The counts can be converted into percentages using the belt speed of the line at the abattoir.

Example of calculation:

- A slaughterhouse has a belt speed of 200 chicks per minute;
- The duration of the count is two times a period of two minutes,
- The result of the count is 16 injuries, seven during the first count and nine during the second count.

The calculation is as follows:

$200 * 2 * 2 \text{ minutes} = 800 \text{ chicks}$

$16/800 * 100\% = 2\% \text{ (catching) injury.}$

### 3. Quality of the bedding

The evaluation of bedding quality and hence also the animal welfare can be done by assessing the characteristics specified below.

#### a. Foot pad dermatitis

**Description:** foot pad dermatitis is any brownish black discoloration greater than 0.5 cm<sup>2</sup> (around the heel joint). This evaluation is not mandatory for thinning flocks.

A score is given to each broiler, before the lower legs are cut off.

Score 0= no deviation, score 1= a deviation (brownish black discoloration is greater than 0.5 cm<sup>2</sup>).

**Random test:** 100 chickens per transport (when loading).

**Threshold value:** each brownish black discoloration is greater than 0.5 cm<sup>2</sup>.

*In the picture you find an example of foot pad dermatitis. You can contact the scheme manager for more pictures.*



#### b. Sole pad lesions

**Description:** sole pad lesions affect the epidermis of the sole pad. This evaluation is not mandatory for flocks delivered in instalments.

After the scalding tank both broiler legs will be classified. Score 0 = (free of lesions), score 1 = (mild lesions) or score 2= (severe lesions). The 'Sole Pad Lesions in Broiler Chickens' flyers from Livestock Research (Wageningen UR) is used as standard for this classification ([https://www.wur.nl/upload\\_mm/6/1/d/07752169-ff40-4cb2-8d3e-f54a55ce4b61\\_Footpad%20lesions.pdf](https://www.wur.nl/upload_mm/6/1/d/07752169-ff40-4cb2-8d3e-f54a55ce4b61_Footpad%20lesions.pdf))



Score 0 = free of lesions



Score 1 = mild lesions



Score 2 = severe lesions

**Random test:** 100 chickens per transport vehicle

**Threshold value:** through classification

The total score can be calculated by the following formula:

Sole pad lesions-score = (percentage of animals with score 0 x 0) + (percentage of animals with score 1 x 0,5) + (percentage of animals with score 2 x 2)

**c. Manure stains breast**

**Description:** manure stains on the breast.

**Random test:** 100 chickens per transport vehicle.

**Threshold value:** one discoloration larger than 2 cm<sup>2</sup>.



#### 4. Scabby hips (scratch / injury)

The evaluation of the 'scabby hips' criteria is based on evaluation of scratches and injuries.

##### Scratch / injury

**Description:** affliction and/or scaling on the skin on the back and/or thigh. It can be in the form of scratches and/or injuries or scabs in various stages of recovery.

**Random test:** 100 chickens per transport vehicle

**Threshold value:** for scratches is three scratches longer than three centimetres and for wounds or scabs, a clearly visible opening in the skin.



## 5. Uniformity

Uniformity is evaluated based on the weighing data of all slaughtered broilers weighed (excluding edible organs).

The percentage of broilers weighing less than 65% of the arithmetic mean slaughtered weight of all broilers supplied is the percentage of chicks that is light. It constitutes an important measuring point for selection, monitoring of disease and chain management.

All broilers ending up in categories below the category with 65% of the arithmetic mean are included in the calculation. Part of the category containing 65% of the arithmetic mean is included. It depends on where the arithmetic mean is situated, measured from the lower limit of the weight category.

If the difference between the arithmetic mean and the lower limit of the category lies between:

- 0 and 10 grams, 0% of the percentage of the weight category concerned is included;
- 10 and 20 grams, 10% of the percentage of the weight category concerned is included;
- 20 and 30 grams, 25% of the percentage of the weight category concerned is included;
- 30 and 40 grams, 50% of the percentage of the weight category concerned is included;
- 40 and 50 grams, 80% of the percentage of the weight category concerned is included;

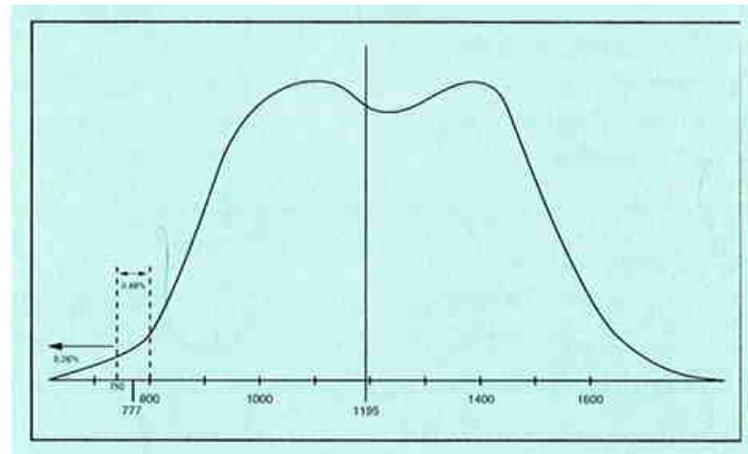
Observation:

It is possible that the weight category containing 65% of the average slaughtered weight exceeds 50 grams. In that case, the proportion that is included needs to be adjusted on a pro rata basis.

### Example:

The arithmetic mean slaughtered weight of the delivered flock is 1195 grams, for example. The 65% limit is  $0.65 \cdot 1195 = 777$  grams. This falls into the class 750 to 800 grams. Of this, 25% is also included as  $777$  minus  $750$  equals  $27$  grams. If  $0.48\%$  of all the broilers fall into this weight class,  $25\%$  of  $0.48\%$  - or  $0.12\%$  - will be included.

$0.26\%$  of the broilers fall into the lower classes. The uniformity is then  $0.26\% + 0.12\% = 0.38\%$ .



**Table 1: Summary of the evaluation system including maximum permitted percentage exceeding limit value**

Characteristic	Mandatory	Threshold values	Random test	Maximum permitted percentage
1. Empty intestinal tract a. Crop b. Stomach content	Mandatory Voluntary	Crop is bigger than 2.0 cm <sup>2</sup> Half or more of the stomach is filled with feed	100 per transport vehicle 10 per transport vehicle	2% -
2. Injury	Mandatory	Bigger than 3 cm and dark red	2 x 2 minutes per flock	-
3. Litter quality a. Foot pad dermatitis b. Sole pad lesions c. Manure stains breast	Mandatory Mandatory Mandatory	Bigger than 0.5 cm <sup>2</sup> Through classification Bigger than 2 cm <sup>2</sup>	100 per transport vehicle 100 per transport vehicle 100 per transport vehicle	10% Score 120 1%
4. Scabby hips (Scratches/injuries)	Mandatory	Three scratches longer than s cm	100 per transport vehicle	2%
5. Uniformity broilers too light compared to the average weight	Mandatory	% weighing less than 65% of the arithmetic mean	All broilers supplied	Not applicable

The abattoir must notify the supplier (poultry farmer, trader, etc.) of the results within two working days.

## Colophon

This brochure, intended for the evaluation system for broilers, and which is part of the IKB Kip certification scheme, has been previously issued by the *Productschap Pluimvee en Eieren* (Product Board for Poultry and Eggs).

## Photographs

by Kees van Hertum; the photographs of sole pad lesions were obtained from Wageningen UR Livestock Research.

## Concluding provisions

This brochure can be referred to as 'Broiler evaluation system'.

Background information on haemorrhages in the context of determining injury.

Haemorrhages can occur during catching, transport and possibly lifting the animals.

Haemorrhages that are counted in this injury evaluation are dark red and large (diffuse) haemorrhages from three centimetres (diameter) on the wing, leg or body.

Very small, bright red haemorrhages (<1 cm) are very fresh. These haemorrhages were caused during processes in the abattoir (e.g. when moving and lifting the animals).

Haemorrhages can be roughly antedated based on colour. Green discoloration of the site starts 12-14 hours after the injury occurred.

Table 1: Changes in the colour of haemorrhages in live animals

Estimated age of haemorrhages	Colour of the bruising
2 mins.	Red
12 hrs	Dark reddish-purple
24 hrs	Pale green-purple
36 hrs	Yellow-green-purple
48 hrs	Yellowish-green
72 hrs	Yellowish-orange
96 hrs	Pale yellow
120 hrs	Normal

BREMMER, A. and JOHNSTON, M. (1996). 'Poultry meat hygiene and Inspection.' W.B. Saunders Company Ltd, England, page 57