



Qualitätssicherung. Vom Landwirt bis zur Ladentheke.

Guideline **Diagnostic Data in Poultry Slaughtering**



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Contents

1	Fundamentals	3
1.1	Responsibilities and scope	3
2	Findings	3
2.1	Which diagnostic data are recorded?	3
3	Data collection and data transfer	3
3.1	Scope of the data collection	3
3.2	Reporting options and reporting deadline	4
3.3	Recording systems, data evaluation and data processing	4
3.3.1	Footpad score/Paddle score	4
3.3.2	Breast skin changes	6
3.3.3	Mortality in the stock and day of destocking	6
3.3.4	Number of rejected animals	7
4	Data access	7
5	Example pictures	8
5.1	Foot pads	8
5.2	Breast skin	14
	Revision Information Version 01.01.2022	16



Qualitätssicherung. Vom Landwirt bis zur Ladentheke.



1 Fundamentals

The collection, documentation and feedback of diagnostic data are important tools for the management of animal health in poultry herds and therefore play a key role in quality assurance. The documentation of the diagnostic data of all slaughter batches of broilers and turkeys including the breeders and Peking ducks in a central database forms the basis for comparative evaluations.

1.1 Responsibilities and scope

All abattoirs in the QS scheme report diagnostic data from the slaughtering process to the central diagnostic database. The transfer is the responsibility of the abattoirs. The diagnostic data must be reported for all broilers and turkeys including the breeders, Peking ducks, laying hens and young hens/roosters delivered by livestock owners that participate in the QS scheme. No separate authorisation of the abattoirs by the livestock owner is necessary, as this authorisation is already governed by the declaration of participation.

The abattoirs must ensure that, in addition to the requirements of this guideline and the other applicable QS requirements (e.g. General Regulations Guideline, Guideline Certification), the applicable legal provisions (foreign legal provisions comparable outside Germany) are fulfilled.

2 Findings

2.1 Which diagnostic data are recorded?

The poultry industry has conducted pilot projects on the recording and feedback of diagnostic data from poultry slaughtering together with Osnabrück University. The insights gained from these projects are being incorporated in the systematic recording of diagnostic data within the QS scheme. The following diagnostic data must be recorded for each slaughter batch and reported to the central diagnostic database for poultry:

- Mortality during fattening (animals that died or were culled during the fattening period)
- Animals that died during transport to the abattoir
- Footpad changes / paddle changes (score) (excluding laying hens and young hens/roosters)
- Number of rejected animals (incl. main reasons for rejection)
- Breast skin changes for male turkeys (percentage of ratings A, B and C)

3 Data collection and data transfer

3.1 Scope of the data collection

The listed assessment criteria represent a minimum standard. In addition, each abattoir can survey further parameters and/or deepen the parameters already included in the minimum standard. For each poultry slaughter, the following data must be recorded and reported to the central database on a stock basis and for each slaughter batch.

Master data

- Abattoir ID (performed automatically via registration)
- Main destocking/Pre-destocking
- Number of slaughter batch
- Shed number/Shed designation (optional)
- Slaughter date
- Number of animals delivered for slaughter
- Location number of livestock owner



Qualitätssicherung. Vom Landwirt bis zur Ladentheke.



- Animal species/Animal group (turkeys, broilers, breeders, peking ducks, laying hens and young hens/roosters)
- Gender (for turkeys)
- Date of stabling (for turkeys and ducks stabling for fattening)

Diagnostic data

- Mortality during fattening (in percent)
- Animals that died during transport (in percent)
- Footpad score/Paddle score (excluding laying hens and young hens/roosters)
 - Figures of 2b > 20% in broilers or C > 25% in turkeys
 - Recording system, camera-based
- Accident (and reason for accident)
- Number of rejected animals (differentiated by reasons)
- Breast skin changes for male turkeys (percentage of ratings A, B and C in percent)

(The highlighted diagnostic findings are described further in the following chapters.)

3.2 Reporting options and reporting deadline

Reporting options

The diagnostic data can be entered into the database in two different ways:

- Uploading of a csv file via <https://db.qs-befunddaten.de>
- Automated data transfer via an interface from the abattoir's IT to the diagnostic database.

Requirements for the formatting of the reporting's can be requested from the QS office.

Reporting deadlines

The diagnostic data must be reported to the diagnostic database without delay, at the latest 14 days after the end of the calendar month.

3.3 Recording systems, data evaluation and data processing

Only reports that include the information on the number of discarded birds, the main reasons for discarding and the breast skin changes in turkey cockerels (if relevant) are accepted in the database

3.3.1 Footpad score/Paddle score

Recording system

Abattoirs with a slaughtering capacity of more than 500 turkeys or 4.000 broilers an hour must record and evaluate foot pad changes using a camera-based system. The system must be used to assign foot pad to a stage or score. The manufacturer and the type designation of the camera system must be disclosed to the QS office. Any changes to the camera system must be reported to the QS office.

If footpad changes are recorded using a camera-based system, all animals in a slaughter batch must be considered. Even if there is a failure in the camera-based system, recording of footpad/paddle changes must be ensured for each slaughter batch manually/visually based on a suitable sample size.

The quality of the recording and evaluation must be reviewed regularly. The requirements for this must be defined in the internal quality management system. The sensitivity, specificity and reproducibility of the results when recording foot pad changes/paddle changes must be defined in the company, known to the responsible employees and comprehensibly documented



for third parties. The lighting conditions and other influencing factors in camera-based systems must be considered. In addition, a risk-based review must be carried out and corrective measures initiated if necessary.

The camera-based system must be cleaned, maintained, verified and, if necessary, calibrated at regular intervals. The specifications of the camera manufacturer must be considered accordingly. The evaluation of the camera system must be checked at regular intervals and, if necessary, adjusted so that the evaluation of foot pad/paddle changes and the corresponding classification is carried out according to the example images. Appropriate evidence must be provided in the audit.

If footpad/paddle changes are recorded manually/visually, at least 100 animals in a slaughter batch must be assessed (50 animals at the start and 50 animals at the end of slaughtering).

Data evaluation

When assessing the foot pad changes (regardless of whether a camera system is used or not), the example images listed in Chapter 5.14 must be taken as a reference.

Data processing

Poultry:

- Determination of the percentage of animals with footpad changes in the stages 0, 1, 2a, 2b
- Multiplication of the percentage in the respective stage by the assessment factors 0 for stage 0, 0,5 for stage 1, 1 for stage 2a, and 2 for stage 2b
- The sum of the results for the individual stages is the footpad score for the slaughter batch

Tab. 1: Calculation example for the footpad score of poultry

Stage	Percentage	Assessment	Calculation	Result
Stage 0	60%	0	60 x 0	0
Stage 1	20%	0,5	20 x 0,5	10
Stage 2a	10%	1	10 x 1	10
Stage 2b	10%	2	10 x 2	20
Result of footpad score				40

Turkeys

- Determination of the percentage of animals with footpad changes with the scores 0, 1, 2, 3, 4
- Multiplication of the percentage in the respective stage by the assessment factors 0 for stage A (sum of scores 0 and 1), assessment factor 0,5 for stage B (sum of scores 2 and 3), assessment factor 2 for stage C (score 4).
- The sum of the results for the individual stages is the footpad score for the slaughter batch

Tab. 2: Calculation example for the footpad score of turkey

Stage	Percentage		Total percentage	Assessment	Calculation	Result
Score 0	30%	Stage A	60%	0	60 x 0	0
Score 1	30%					
Score 2	20%	Stage B	30%	0,5	30 x 0,5	15



Stage	Percentage		Total percentage	Assessment	Calculation	Result
Score 3	10%					
Score 4	10%	Stage C	10%	2	10 x 2	20
Result of footpad score						35

Ducks

- Determination of the proportion of animals with paddle changes in the scores 0, 1, 2, 3, 4
- Multiplication of the proportion in the respective stage with the evaluation factors 0 for stage A (score 0), evaluation factor 0.5 for stage B (score 1), evaluation factor 1 for stage C (score 2), evaluation factor 2 for stage D (score 3) and evaluation factor 3 for stage E (score 4)
- Sum of the scores for the individual levels gives the paddle score for the slaughter batch

Tab. 3: Calculation example for the footpad score of ducks

Stufe	Anteil		Summe Anteil	Bewertung	Berechnung	Ergebnis
Score 0	30 %	Stage A	30 %	0	30 x 0	0
Score 1	30 %	Stage B	30 %	0,5	30 x 0,5	15
Score 2	20 %	Stage C	20 %	1	20 x 1	20
Score 3	10 %	Stage D	10 %	2	10 * 2	20
Score 4	10 %	Stage E	10 %	3	10 x 3	30
Result of Paddle score						85

3.3.2 Breast skin changes

Recording system

The detection of breast skin changes in male turkeys must be carried out for each slaughter batch. At least 100 animals in a slaughter batch must be assessed manually/visually (50 animals at the beginning and 50 animals at the end of slaughter).

Data evaluation

The evaluation must be carried out on the basis of the specifications in the chapter Example images breast skin changes. The evaluation must be reviewed at regular intervals and, if necessary, adjusted so that the evaluation of the breast skin or the corresponding classification is carried out according to the sample images. Corresponding evidence must be presented in the audit.

3.3.3 Mortality in the stock and day of destocking

Information on mortality shall be given only for the main destocking. This information shall not be required in the case of pre-destocking. In the case of chickens, breeders, laying hens and young hens/roosters the mortality must be indicated from the date of stabling, in the case of turkeys and peking ducks from the date of stabling for fattening. To calculate mortality, the number of animals stowed must be compared with the number of animals delivered for slaughtering.



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3.3.4 Number of rejected animals

When recording the number of rejected animals, a distinction must be made between the reasons for which the animals were rejected. Each rejected animal may be assigned to a maximum of one reason. The number of rejected animals must be reported for the following reasons:

- Diseases, infestation, alterations of the inner organs, especially heart, lungs, air sac, liver, intestines (including endoparasites), others
- Alterations of the skin especially contact dermatitis (breast, foot pad) and alterations of the muscles including injuries
- Skeletal and developmental damages/disorders (z.B. stunted growth, cachectic animals)
- Noticeable abnormalities of the carcass especially debleeding, colour, odour, contamination, others
- Others

4 Data access

Only authorised users can access the data in the diagnostic database. Access to the database is provided after registration of the user. After signing a data and copyright protection declaration, each user receives a username and a password from the database administration.

For every livestock farm, data is available in the diagnostic database:

- Raw data (findings per slaughter batch)
- Number of animals slaughtered
- Aggregated data (summary evaluation of the data on the individual slaughter batches) from the QS information letter on diagnostic data from slaughtering

The scope of data access varies between authorized users.

Abattoir

Abattoirs report diagnostic data to the central diagnostic database. They can also commission a third party to report the diagnostic data. Abattoirs and third parties commissioned to report the diagnostic data can view, change (verifiably), delete (verifiably) and download all data that they have entered in the diagnostic database. Access to and viewing of data entered by other abattoirs is only possible if the livestock owner has released the data.

On the grounds of data protection, also within the abattoir, downloading all data of an abattoir is only possible based on a separate access to the database. Abattoirs can apply for such access at the database administration.

This rule ensures that due consideration is paid to the special need to protect data, also within the abattoir.

Livestock owner

Every livestock owner has access to the central diagnostic database. The access data (username and password) is provided by their coordinator. In the diagnostic database, livestock owners have the opportunity to view and download all the data available for their farm. There is no access or visibility to data of other livestock owners.

Coordinator

Coordinators are entitled to view and download the aggregated data from the QS information letters on diagnostic data from slaughtering of the agricultural businesses they have bundled. Access to the raw data is granted to the coordinators if the livestock owner authorises them in writing. If a coordinator instructs a sub-coordinator to discharge certain coordinator tasks, the



Qualitätssicherung. Vom Landwirt bis zur Ladentheke.



sub-coordinator receives the coordinator's access rights. He is entitled to view and download the data of the agricultural businesses he has bundled. Access to the raw and aggregated data will only be granted to the sub-coordinator after an authorisation by the livestock owner. Nevertheless, the coordinator as contractual partner of QS remains responsible for the implementation of the requirements.

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As scheme owner, QS has access to all data and evaluation results in the diagnostic database. Access to the data is restricted to individual authorised employees of QS.

QS will provide the operating company of the animal welfare initiative "Initiative Tierwohl" access to information that is defined for the implementation of the Animal Welfare Initiative in this respect.

The data in the diagnostic database can be made available to research establishments (e.g. universities, colleges, and Federal Institute for Risk Assessment (BfR)) for research projects and scientific evaluations in the field of animal welfare/animal health after pseudonymisation of the location number (e.g. based on the VVVO) of the agricultural businesses and the identification number of the abattoir while ensuring appropriate data protection.

5 Example pictures

5.1 Foot pads

The following pictures show different types of foot pad changes and the corresponding evaluations.

Broilers

Stage 0





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Stage 1



Stage 2a



Stage 2b





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Turkeys

Score 0

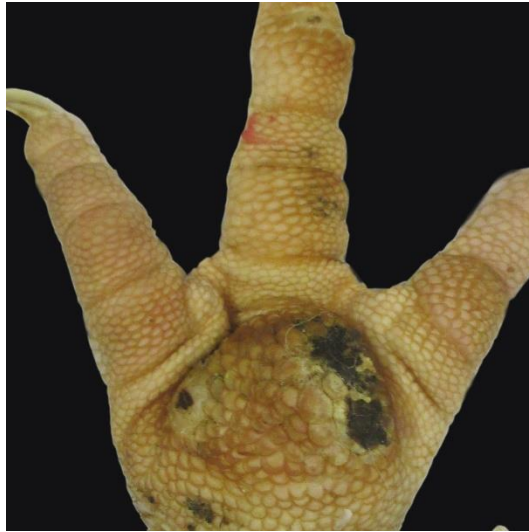


Score 1





Score 2



Score 3



Score 4





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Ducks

Score 0



Score 1





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Score 2



Score 3



Score 4

➡ More far-reaching changes of the paddles than those presented in Score 3 are to be classified in Score 4



5.2 Breast skin

Rating A

Description:

- No abnormalities

Diagnostic:

- Intact chest skin
- No increase in circumference



Rating B

Description:

- Button of diameter ≤ 3 cm with clear distinction

Diagnostic:

- Small increase of circumference
- With small ulcerous skin defect (so called button)



Description:

- Minor breast skin changes of diameter > 3 cm

Diagnostic:

- Small/minor increase of circumference
- Closed skin





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Description:

- Medium degree breast skin changes of diameter > 3 cm
- Depth 1 cm to 3,5 cm

Diagnostic:

- Medium degree breast skin changes of diameter > 3 cm
- Small colour deviations
- Closed skin



Rating C

Description:

- High degree breast skin changes of diameter > 5 cm
- Depth above 3,5 cm

Diagnostic:

- High degree breast skin changes
- Color deviations
- Open skin





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Criterion/Requirement	Changes	Date of change
1 Fundamentals	Extension: The recording of diagnostic data for breeders (turkey and chicken) and Peking ducks was included in the guideline	01.01.2022
1.1 Responsibility and scope	Extension: The recording of findings for breeders (turkeys and chickens), Peking ducks, laying hens and young hens/roosters was included in the guideline	01.01.2022
2.1 Which diagnostic data are recorded?	Specification: For Peking ducks, the paddle change/the paddle score was recorded Addition laying hens and young hens/roosters	01.01.2022
3.1 Scope of the data collection	Extension: Addition laying hens and young hens/roosters	01.01.2022
3.3.1 Foot pad score/Paddle score	Renaming: Chapter 3.3.1 was renamed to footpad score/paddle score. Extension: Paddle changes were included for recording systems. A calculation example for the paddle score for ducks was added	01.01.2022
3.3.3 Mortality in the stock and destocking	Extension: The chapter was extended to include breeders and Peking ducks, laying hens and young hens/roosters	01.01.2022
5.1 Footpads	Extension: The chapter was extended by example pictures for paddle scoring	0101.2022



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