

Project *brief*

Thünen Institute of Organic Farming

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Q Check: Systematic Animal Welfare Monitoring – from farm-level to national-level monitoring

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- Since 2014, all German livestock farmers are required by law to execute on-farm self-assessments to monitor animal welfare and to assess and evaluate animal-based indicators (in order to monitor whether housing conditions meet the needs of the animals).
- A large amount of data pertaining to dairy farms is already being standardised and collected on a regular basis; in our joint research project we selected valid indicators for dairy cow health.
- The Q Check report summarizes the data, offers a good way for farmers to monitor the general health situation on their farms, and helps with herd management.
- The data not only facilitates internal monitoring on farms but can also (anonymized and collected on a national scale) provide a reliable picture of the animal welfare situation in Germany as a whole.

Background and aims

Since February 2014, all livestock owners including dairy farmers are required under the German Animal Welfare Act to monitor animal welfare on the basis of animal-based criteria (animal welfare indicators).

At the same time, there is a political demand for animal welfare monitoring on a national scale as well. Here too, welfare indicators and regular reporting play a central role.

What has been missing to date is a comprehensive nationwide monitoring system using indicators that can be recorded automatically which

- makes animal welfare measurable on the basis of objective animal-related indicators and
- presents the results in such a way that they can also be used for internal monitoring on farms and implemented into subsequent herd management measures.

The goal of the joint research project Q Check was to create a system that would make the health of animals on dairy farms measurable, but using data from existing systems of data collection and analysis.

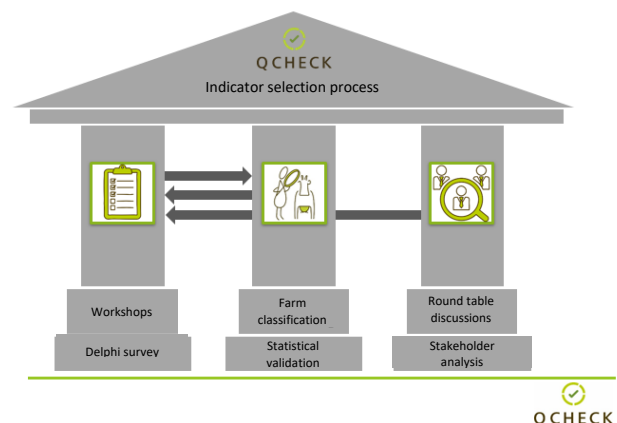
The system can help individual farms to monitor their herds, and guide subsequent measures to manage animal health. Furthermore, as 88 - 100 % of dairy cows in the country (depending on depth of analysis) are covered, the data can also be used for the purposes of nationwide monitoring, providing information on the animal health and welfare situation in the German dairy farming sector as a whole.

This breadth of coverage distinguishes the project from all comparable initiatives in the field of dairy farming in Germany.

Which indicators from existing systems of data collection and analysis are suitable for self-monitoring on farms and for animal welfare monitoring on a national scale?

Various systems of data collection and analysis are already place in the German dairy farming sector and have been for years: *Milchkontrolle [DHI]*, the *HIT* database [National database for animal identification] and *QM Milch* [Auditing system for quality management]. These established systems receive data from all over the country on a continuous basis and provided the data for Q Check.

The process of indicator selection and the feedback between steps



Source: Q Check (2019)

The first step in the project was an extensive analysis of the literature on the animal-based welfare indicators used in real dairy farming settings to measure the health and welfare of cows. In order to select from these the most suitable indicators, a panel of experts consisting of farmers, vets and agricultural scientists were invited to take part in a two-stage Delphi survey.

The participants were asked to evaluate how suitable the 53 indicators identified in the literature analysis were, both for internal animal welfare monitoring at farm-level and for use on a national scale. The threshold values proposed by the experts were compared with mass data reflecting the reality German on dairy farms.

Parallel to this, a stakeholder survey was carried out in which representatives from the fields of business, politics, academia, and civil society, and representatives of farmers' associations were asked in personal interviews about animal welfare and suitable indicators thereof.

Indicators for assessing dairy cow health

In the first round of the Delphi survey, 82 responses were received from the 201 experts contacted. The second round of questioning confirmed the results of the first round: 28 indicators (18 from the *MLP* [Milk quality testing], *HIT* [National database for animal identification] and health databases, and 10 others from *QM Milch* [Auditing system for quality management] were selected (i.e. deemed suitable by at least ⅓ of participants). Threshold values were discerned for all the indicators in order to make it easier for dairy farmers to recognise potential areas of action to improve animal welfare. After this, two workshops were held in which the set of indicators was compressed even further to 13 which were unanimously deemed "fully suitable". The procedure guaranteed that equal weight was given to "academic" and "practical" concerns. Furthermore, all the indicators are available already and can be evaluated immediately in the Q Check report (see table).


Q Check report

The free Q Check report, which participating dairy farms receive quarterly from their milk monitoring association, provides an overall evaluation of the farm's reported data and a user-friendly breakdown of the data pertaining to individual cows. A benchmarking system enables farmers to track developments in their herds, to recognise problem areas quickly and to take the appropriate remedial measures.

In addition, the report shows farmers how their results compare to those from other farms in the same category, giving them a better idea of their performance in relative terms.

Using existing reporting systems to gather animal welfare data nationwide guarantees that the picture of dairy cow welfare which emerges is objective and neutral.

The 13 indicators selected as suitable for farm-level and national-level animal welfare monitoring, plus threshold values for orientation

Indikator	Target threshold	Critical threshold	Target threshold
Proportion of udder-healthy animals [%]	≥ 75	≤ 50	"Desirable level"; current knowledge suggests that when indicators meet the target threshold (i.e. values are at least as good as the target threshold), no animal welfare problems exist within the herd.
Proportion of animals with significantly increased milk cell count [%]	≤ 5	≥ 15	
Mastitis rate among heifers [%]	≤ 15	≥ 30	Critical threshold The critical threshold indicates that there is potential for improvement in the herd in certain areas of animal health. If any indicator exceeds the critical threshold, the cause should be identified and action taken to improve the situation.
New infection rate in the dry period [%]	≤ 15	≥ 25	
Cure rate in the dry period [%]	≥ 75	≤ 50	Contact your vet or advisor if you need assistance.
New infection rate during lactation [%]	≤ 15	≥ 30	
Chronically infected udders with poor cure prospects [%]	≤ 1	≥ 5	
Number of cows with a fat-protein-ratio ≥1.5 within 100 days p.p. [%]	≤ 10	≥ 15	
Number of cows with a fat-protein-ratio <1.0 within 100 days p.p. [%]	≤ 5	≥ 15	
Culling rate [%]	≤ 25	≥ 40	
Mean productive life time [months]	≥ 48	≤ 30	
Stillbirths and calf mortality [%]	≤ 5	≥ 10	
Cow mortality [%]	≤ 2	≥ 5	

Source: Q Check (2020)

Q Check is also an important first step towards establishing a nationwide system of animal welfare monitoring. Anonymised, the results of the indicator set can be used on a national scale to provide up-to-date information about the situation on dairy farms and thus a reliable picture of the animal welfare situation in Germany as a whole.

Training and information material for download (in German)

- Handouts explaining indicators and threshold values
- Film setting out the benefits of the Q Check report and demonstrating its practical use
- DLQ Directive 2.0 (definitions and calculation formulas)
- Data protection concept
- Video statements by representatives of relevant stakeholder groups

→ <https://infothek.q-check.org>

Further information

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