



Sensors for dairy cattle welfare assessment

02.06.2026

Registered charity in England and Wales. Charity no. 219099.

RSPCA Welfare Standards

These documents list requirements for areas such as husbandry, management, transport, slaughter. Requirements must be met by dairy farmers on the RSPCA Assured scheme.

They also require welfare outcomes to be measured by assessors, including:

- Body condition score
- Mobility
- Cleanliness
- Hair loss/lesions



Sensors and the standards

Technology is encouraged

The standards encourage uptake of tech for health, behaviour and welfare monitoring.

Systems exist to monitor some of the welfare outcomes we collect.

Considering criteria for how these could replace in-person observations.



NEW The RSPCA is reviewing the role of artificial intelligence and the wide-ranging benefits it can bring to dairy cattle welfare, particularly in the areas of welfare outcome assessment, lameness detection and behavioural assessment.

It is strongly recommended that producers investigate the use of such technology to further safeguard and improve animal welfare.

Where such technology is being considered, please contact the RSPCA Farm Animals Department.



NEW The RSPCA is reviewing Intelligent Camera Surveillance systems for use in slaughter plants. These systems can alert relevant slaughter plant staff to potential welfare concerns in real time, allowing situations to be dealt with quickly and efficiently. They can also be used to identify areas where staff require additional training or where staff safety is at risk. It is strongly recommended that slaughter plants adopt such technologies to help further safeguard animal welfare in their plant. Where such technology is being considered, please contact the RSPCA Farm Animals Department for further information.

Challenges

- Metrics collected by some systems (e.g. lameness) are beneficial, but limited - welfare under a 5 domains model is more holistic than this. More obvious and 'blunt' measures of welfare may miss subtleties.
- Sensor accuracy - many alerts may disengage farmers from using, and provide lower quality welfare assessments.
- Bringing all farms along - cost for some smaller family farms may be prohibitive.
- Sensors should complement, not replace, human-animal relationships.



Future scope

- Sensor data could inform the impact of standards changes and shape future requirements.
- Comprehensive sensors providing detailed behavioural information (e.g. social interactions, spacing, patterns of resource use) could be used to provide real-time data for assurance.
- Welfare outcomes move from an annual review of limited number of animals to a continuous process.

Individual measures	
1a. Mobility – individual scoring 2. Body condition 3. Cleanliness 4. Hair loss, Lesions 5. Swellings	• Assessed on 20 cows from the dairy herd, sampled randomly from all groups of milking cows by assessor. Lying cows need not be included if it might risk their welfare. • 3 or more cows out of the 20 to be assessed jointly with the stockperson (record assessor's score only).
Herd measures	
6. Broken tails 7. Response to stockperson	• Assessed across all milking cows.
All animals on farm	
8. Cows needing further care	• Assessed across all animals on farm. • For example identify any mobility score three cows not receiving adequate care / treatment.
Records measures	
1b. Mobility – assessment 1c. Mobility – lameness incidence (cases of lameness per 100 cows per year) 1d. Mobility - lameness prevalence (% of score 2 and 3 cows at any moment in time) 9. Mastitis 10. Calf / Heifer survivability 11. Cull and Casualty Cows	• From records.

Thank you



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