Transition cow management and health in Irish dairy herds: Results from an on-line survey

Louise Horan and Ainhoa Valldecabres

Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork

Summary

- The transition period (three weeks pre to three weeks post-calving) involves physiological, immunological and metabolic challenges for the dairy cow.
- An on-line survey of transition cows' management and health was conducted; 525 dairy farmer responses were analysed.
- The majority (57%) of farmers reported observing the highest incidence of disease within the first three weeks after calving.
- Milk fever and subclinical hypocalcaemia were identified as a concern.
- An on-farm study is currently ongoing in commercial farms to characterise transition in Irish dairy cows' and assess its impact on health and performance.

Introduction

The transition period, defined as three weeks pre to three weeks post-calving, is a key determinant of future performance in dairy cows. Suboptimal management during this period has been repeatedly associated with higher disease incidence, poorer production and reproduction, and higher herd removal rates. Compact spring-calving, accentuates the importance of directing efforts to guarantee a smooth transition to prevent and minimise undesired long-term production and reproduction effects at herd level. However, there is a lack of current data on transition cow health and management in Irish dairy herds. The main objective of this research is to establish a national-level baseline and benchmark for transition cow health and management, as the first step to unfold possibilities for its optimisation.

Survey study

An on-line survey was designed to assess farmers' perception of the transition period, reported disease incidence and management practices. The survey, distributed among 3,899 Teagasc Dairy Advisory clients during autumn 2022, yielded 525 responses for use in analysis. The majority of respondents owned spring calving only herds (84%) and defined themselves as high-input, grazing herds (52%; >1 ton of bought-in feed/cow).

Perception of the transition period

Fresh cow diseases (e.g. milk fever, retained placenta, metritis) were ranked to be of highest importance to 49% of respondents; whilst others ranked mastitis (27%), lameness (17%) or infectious disease (7%) first. Most respondents indicated that freshly calved dairy cow health is critical (86%) and that correct dry cow management is essential for future health and performance (90%). Less than three per cent of respondents considered both freshly calved cows health and dry cow management to be moderately or not too important.

Disease

The highest incidence of disease has been reported for fresh cows (57%; within three weeks after calving), compared to cows in other stages of lactation (early (3rd week to 3rd month of lactation): 29%, late: 7%, mid: 5%, dry: 2%). Within the calving season, disease incidence was reported to be highest with late calvers (48%) and multiparous cows (second and

greater calvers; 52%). Problems arising throughout the entire calving season (41%) and disease affecting all parities (43%) were both indicated by a high proportion of respondents also.

Most respondents indicated that occasional cases without major effect on herd performance were observed for; milk fever (73%), metritis (wash out, dirty cow; 72%), retained placenta (69%), displaced abomasum and/or digestive problems (62%), and ketosis (61%). However, regarding clinical and subclinical milk fever, 22% of respondents reported these conditions to be a routine problem (regularly treating cows to control issues). Nearly half of respondents (49%) reported treating 1 to 3% of their herd for milk fever and 17% reported treating 4-6% of their herd.

Management practices

In respect of management practices for dry cows, body condition monitoring was the most commonly implemented by respondents (74%) followed by managing cows in >1 group (56%), magnesium supplementation (51%) and provision of feed sources other than silage (43%) to late-pregnancy cows. Less commonly implemented management practices included calcium (35%) and vitamin D (23%) supplementation to late-pregnancy cows diet, feeding a low potassium diet to dry cows (20%) and negative dietary cation-anion difference diets for late-pregnancy cows (DCAD: 6%). Regarding management of freshly calved cows, most respondents reported keeping freshly calved cows indoors for a short period after calving (67%) and supplementing calcium to high risk cows at calving (e.g. bottle, bolus; 56%). Additionally, implementation of once a day milking for a few days after calving (35%) and dietary supplementation with magnesium (26%), calcium (18%) or vitamin D (9%) were reported by some respondents.

On-farm study (ongoing)

With most farmers acknowledging the importance of the transition period, an on-farm study is being conducted. Twenty-seven commercial farms across nine counties are enrolled in the study. Through the 2023 spring calving season, each farm was visited three times during the dry (≈2 weeks pre-calving), early fresh (1-2 weeks post-calving) and late fresh periods (2-4 weeks post-calving). Across all visits, blood samples for mineral (Ca, Mg, P) and energy metabolite (NEFA, BHB) determinations were collected, and body condition scoring was performed. Nutrition, management and production were assessed across all farms during the visits also (silage samples, questionnaire, milk sampling). The above outcomes, along with additional cow-level information obtained from herd records, will be used to establish a baseline and benchmark of transition cow's health, and to identify opportunities for its optimisation in Irish dairy herds.

Conclusion

Irish dairy farmers acknowledge the importance of transition period management on cows' health and its association with future performance. In particular, this survey has identified milk fever and subclinical hypocalcaemia as a concern in Irish dairy farms. Further analysis of the data presented above and of data collected as part of the on-farm study will identify needs that should be targeted by future Irish research.

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