***Transition cow problems usually manifest themselves in the month immediately after calving. However, multiple factors can contribute, and many of the important precipitating factors start prior to calving, ie in the dry cow groups.***

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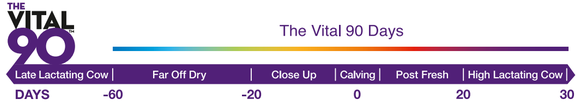
*The Healthy Start Farm Audit is designed to assist farmers and their veterinarians in assessing risks to transition cow health, to help determine whether a ketosis monitoring program is needed.*

*This easy on-farm checklist can also be used to evaluate a herd management system, and track changes to it.*

- **All green:** Farm with a very good level of transition cow management.
- **Mainly yellow:** Management improvement is advised.
- **Red score:** Management changes are strongly recommended.





**REFERENCES**

1 Nordlund 2009. The Five Key Factors in Transition Cow Management of Freestall Dairy Herds. Proceedings 46th Florida Dairy Production Conference, Gainesville, Florida.

2 Grant, Albright 2001. Effect of Animal Grouping on Feeding Behavior and Intake of Dairy Cattle. J. Dairy Sci. 84 (E Suppl.): E156-E163.

3 Grant 2012. Economic Benefits of Improved Cow Comfort. Novus Solutions Service Sustainability, page 6, table 3.

4 Graves 2006. Bedded Pack Barns for Dairy Cattle: http://extension.psu.edu/animals/dairy/news/2006/bedded-pack-barns-for-dairy-cattle.

5 Adapted from Nocek 2009. Hock Assessment for Cattle, Cornell Cooperative Extension (www.ansci.cornell.edu/prodairy/pdf/hockscore.pdf).

6 Cook, Nordlund 2004. Behavioral Needs of the Transition Cow and Considerations for Special Needs Facility Design. Vet. Clin. Food Anim. 20:495-520.

7 García-Ispierto et al. 2007. Climate factors affecting conception rate of high producing dairy cows in northeastern Spain. Theriogenology 67:1379-1385.

8 Roche et al. 2009. Invited review: Body condition score and its association with dairy cow productivity, health, and welfare. J. Dairy Sci. 92:5769-5801.

9 Fricke 2001. Review: Twinning in Dairy Cattle Prof. Anim. Sci. 17:61-67.

10 Adapted from the DairyCo Mobility Score chart 2011.

11 Juarez, Robinson 2002. Impact of Lameness on Behavior and Milk Production of High Producing Multiparous Holstein Cows. Hoof Trimmers Association Inc. Newsletter 34:10-11.

12 Calderon, Cook 2011. The Effect of Lameness on the Resting Behavior and Metabolic Status of Dairy Cattle During the Transition Period in a Freestall-Housed Dairy Herd. J. Dairy Sci. 94:2883-2894.

13 Overton et al. 2009. Transition Management Checklist. Western Dairy Management Conference, Reno, Nevada.

14 Mulligan 2012. A Herd Health Approach to Dairy Cow Nutrition and Production Diseases of the Transition and Early Lactation Dairy Cow. Proceedings of the 27th World Buiatrics Congress, Lisbon, Portugal. pages 89-96.

15 Bradley, Green 2010. Managing Dry Cows to Optimise Udder Health–Part II: Monitoring and Measuring Dry Period Performance. Irish Vet. J. 63(8):512-520.

16 Zaaijer et al. 2003. A Novel Scoring System for Monitoring the Relationship Between Nutritional Efficiency and Fertility in Dairy Cows. Irish Vet. J. 56:145-156.

17 Drackley 1998. Nutritional Management of Dairy Cows During the Transition Period. Proceedings of the 9th Florida Ruminant Nutrition Conference, Gainesville, Florida.

18 Chamberlain, Wilkinson 2002. Feeding the Dairy Cow. Chalcombe Publications, Lincoln, UK.

19 Jan Hulsen and Jack Rodenburg (2010), Building for the Dairy Cow, Roodbont publishers, Netherlands, Chapter 2, page 26.

20 Green 2012. Dairy Herd Health.

21 Based on Rumen Fill Score Card produced by Dairy Veterinary Consultancy Ltd, 2014.



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HSCHECKLIST

Elanco™

THE VITAL 90 DAYS

# Healthy Start Checklist

***For better management know your herd's risk***

*– Housing, including design and comfort*
*– Cow factors, such as Body Condition Score (BCS), twins and disease*
*– Nutrition, from feed quality to water access*

Elanco™

# Housing

| | HOW TO SCORE |
|---|---|
| **Cow comfort**<br>Uncomfortable cubicles or loose bedding areas can lead to increased stress, standing and reduced DMI. | **Cubicle dimensions (measure from curb to brisket locator)** [1,3]<br>● > 1.3 m wide, > 1.8 m long<br>● 1.2-1.3 m wide, 1.7-1.8 m long<br>● < 1.2 m wide, < 1.7 m long<br><br>**Cubicle lunge access** [1]<br>● > 75 cm of unobstructed head space for lunge<br>● Obstructed head space, but side rail permits side lunging<br>● Obstructed forward and side lunge space<br><br>**Cubicle stocking density** [6]<br>● > 100% cubicles vs. cows<br>● 90-100% cubicles vs. cows<br>● < 90% cubicles vs. cows<br><br>**Hock lesions** [5]<br>Hair abrasions and worse<br>● < 5% of cows<br>● 5-10% of cows<br>● > 10% of cows<br><br>**Bedding & comfort** [1,4]<br>● Loose dry bedding, ample cushion<br>● Semi-moist bedding, moderate cushion<br>● Very wet bedding, inadequate cushion<br><br>**Housing stocking density (straw yard)** [19]<br>● Daily maintenance, 1m$^2$/1000L milk production lying area<br>● Regular maintenance, <1m$^2$/1000litre milk production lying area<br>● Insufficient maintenance, <1m$^2$/1000litre milk production lying area |
| **Feed space** [1,2]<br>Inadequate feed space limits dry matter intake (DMI). | ● > 75 cm of feed space access per cow, or 4 cows per 5 headlocks in transition area<br>● 60-74 cm of feed space access per cow, or 1 cow for each headlock in transition area<br>● < 60 cm of feed space access per cow or more than 1 cow for each headlock in transition area |
| **Temperature/Ventilation** [7]<br>Heat stress can severely impact DMI. Heat stress may be defined as any combination of environmental variables that are higher than those of the temperature range of the animal's thermal neutral zone (5-20°C). Heat abatement strategies might include tunnel ventilation, strategic use of fans. | ● Well ventilated, additional mechanical ventilation provision for when temperatures exceed 22˚C<br>● Generally well ventilated shed at all times<br>● Heat stress is likely to be a problem at least at certain times of the year |
| **Cow/group movements** [1]<br>Constantly moving cows from group to group causes stress and unrest due to disturbance of hierarchy. | Is consideration given to stable cow groups?<br>● Yes - no group changes from drying off to calving, cows moved to lactating group in at least pairs<br>● Some - no more than one group change between dry off and calving. Cows moved in pairs if possible<br>● >1 group change dry off to calving, single cow movement |

# Cow Factors

| | HOW TO SCORE |
|---|---|
| **Body condition score (BCS)** [8]<br>BCS ≥ 3.5 increases risk of ketosis compared to moderate-conditioned cows pre-calving. BCS provides a "hands on," objective measure of the amount of fat cover on the cow. Since fat is an energy reserve, condition scoring helps provide an indication of the cow's energy status. | ● < 10% of cows are ≥ 3.5<br>● 10-25% of cows are ≥ 3.5<br>● > 25% of cows are ≥ 3.5<br>  <br>1.0 2.0 3.0 4.0 5.0 |
| **Mobility Score** [10,11,12]<br>Lame cows may have depressed DMI. | ● No dry cows with mobility score 3<br>● up to 5% dry cows (or 1 cow, whichever is greater) mobility score 3<br>● >5% (or 1 cow, whichever is greater) mobility score 3 |

| SCORE | CATEGORY | DESCRIPTION |
|---|---|---|
| 0 | Good mobility | Walks with even weight bearing and rhythm on all four feet with a flat back. Long fluid strides possible. |
| 1 | Imperfect mobility | Steps uneven (rhythm or weight bearing) or strides shortened; affected limb or limbs not immediately identifiable. |
| 2 | Impaired mobility | Uneven weight bearing on a limb that is immediately identifiable and/or obviously shortened strides (usually with an arch to the centre of the back) |
| 3 | Severely impaired | Unable to walk as fast as a brisk human pace (cannot keep up with the healthy herd) and signs of score 2. |

| | |
|---|---|
| **Transition disease levels**<br>Herd disease records are important tools for monitoring the incidence of disease around calving. However, it is highly critical that standardised disease definitions are in place to allow comparison from year to year and from farm to farm. Farmers should set goals to minimise the incidence of disease. Herds with a history of energy-related diseases (during the last year for smaller herds or on a minimum of 50 last calvings for larger herds) have an increased risk for developing ketosis. | **Hypocalcaemia** [13,14]<br>● < 5%<br>● 5-10%<br>● > 10%<br><br>**Retained placenta** [13,14]<br>● < 8%<br>● 8-10%<br>● > 10%<br><br>**Displaced abomasum** [20] **(based on 8, 000 - 10, 000 litres MY pa)**<br>● < 2%<br>● 2 - 5%<br>● > 5%<br><br>**Mastitis** [15] **In fresh cows, first 30 days**<br>● < 8%<br>● 8-10%<br>● > 10% |
| **Twins** [9]<br>Twin pregnancy creates an increased energy drain and elevates the risk of many diseases post-calving (retained placenta, ketosis, displaced abomasum). Identify twins early if possible (ultrasound) and have a routine ketosis protocol for twin-bearing cows. For cows with twins, begin dry-off and transition diet 2 weeks before other cows. | ● Twins are identified early (ultrasound), a routine ketosis protocol for twin-bearing cows is in place and dry-off and transition diet begin 2 weeks before other cows<br>● A routine ketosis protocol for twin-bearing cows is in place<br>● There is no ketosis protocol for twin-bearing cows |
| **Ketosis monitoring**<br>Regular monitoring can identify the level of risk from ketosis within the herd. Monitoring can be done using blood (BHB, NEFA), milk (Keto-Test) or urine (Keto Stix) | ● Cows are routinely monitored for ketosis (cows are tested within 3 weeks before and/or after calving)<br>● Cows are infrequently monitored for ketosis (cows are tested only if they are showing signs of ill health)'<br>● Cows are not monitored at all for ketosis or individuals are only tested if there is a problem |

# Nutrition & Water

| | HOW TO SCORE |
|---|---|
| **Feeding approach** [3, 17]<br>The primary feeding management goal during the prepartum period is to minimise the inevitable drop in DMI that occurs prior to calving. | ● Balanced diet, with a source of starch and fibre. High bulk but low energy. No evidence of sorting. Fresh feed daily. No restricted access.<br>● Some evidence/likelihood of sorting. Likely to be too high or too low in starch provision, or restricted access.<br>● Clear evidence of sorting (e.g. many fibres over 6cm long); or, not fed fresh daily; or, restricted access; or, likely to be inappropriate fibre or starch levels. |
| **Feed quality** | ● There is no evidence of altered fermentation profiles, offensive odours or spoilage in the ration<br>● There are some slight off-odours, mild evidence of spoilage in the ration<br>● There is consistent evidence of altered fermentation profiles, offensive odours and spoilage in the ration |
| **Feedspace maintenance** [13] | ● Passageway/troughs cleaned daily<br>● Passageway/troughs usually cleaned every other day<br>● Passageway/troughs cleaned less than 3 times a week, mouldy feed present |
| **Rumen fill** [16, 21]<br>Rumen fill is the result of dry matter intake, ration composition and digestion. Rumen fill scoring is useful for identifying possible feeding and feed intake problems.<br>Are rumen fill scores done routinely (at least weekly) for pre-calvers? | ● < 10% of close-up cows with rumen fill < 4<br>● 10-20% of close-up cows with rumen fill < 4<br>● > 20% of close-up cows with rumen fill < 4<br>  <br>1.0 2.0 3.0 4.0 5.0 |
| **Feed frequency/accessibility** [3]<br>Feeding and feed pushing will ensure constant feed accessibility. Transition cows should never be left without feed. Hotter temperatures may cause heating and spoilage. | ● Feed pushed frequently throughout the day to ensure accessibility<br>● Feed pushed once or two times a day to ensure accessibility<br>● Feed never pushed to ensure accessibility |
| **Feed refusals** [17] | ● > 5% refusals at time of new feed delivery<br>● < 5% refusals at time of new feed delivery<br>● No refusals at time of new feed delivery |
| **Rumination** [18]<br>Sufficient effective fibre in the ration will ensure ruminal capacity stays high throughout the transition period. However, make certain energy needs are covered. | ● > 90% of resting cows are ruminating, ≥60 chews per cud'<br>● 70-90% of resting cows are ruminating<br>● < 70% of resting cows are ruminating |
| **Water access** [6]<br>A lack of water will reduce DMI | ● > 10 cm linear access per cow, clean water, more than 2 locations in pen<br>● 5-9 cm linear access per cow, moderately clean water, more than 2 locations in pen<br>● < 5 cm linear access per cow, dirty water, only 1 location in pen |