



Animals in Extensive Production Systems

VETS30031 / VETS90123



Transition cow management



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Transition Period

Energy

Amount required yesterday = 6-7MJ

If she produces 20 litres,

Energy required tomorrow = 17MJ

Calcium

Before calving, a cow deposits 8-12g per day to her foetus

After calving, Milk contains 12g per litre

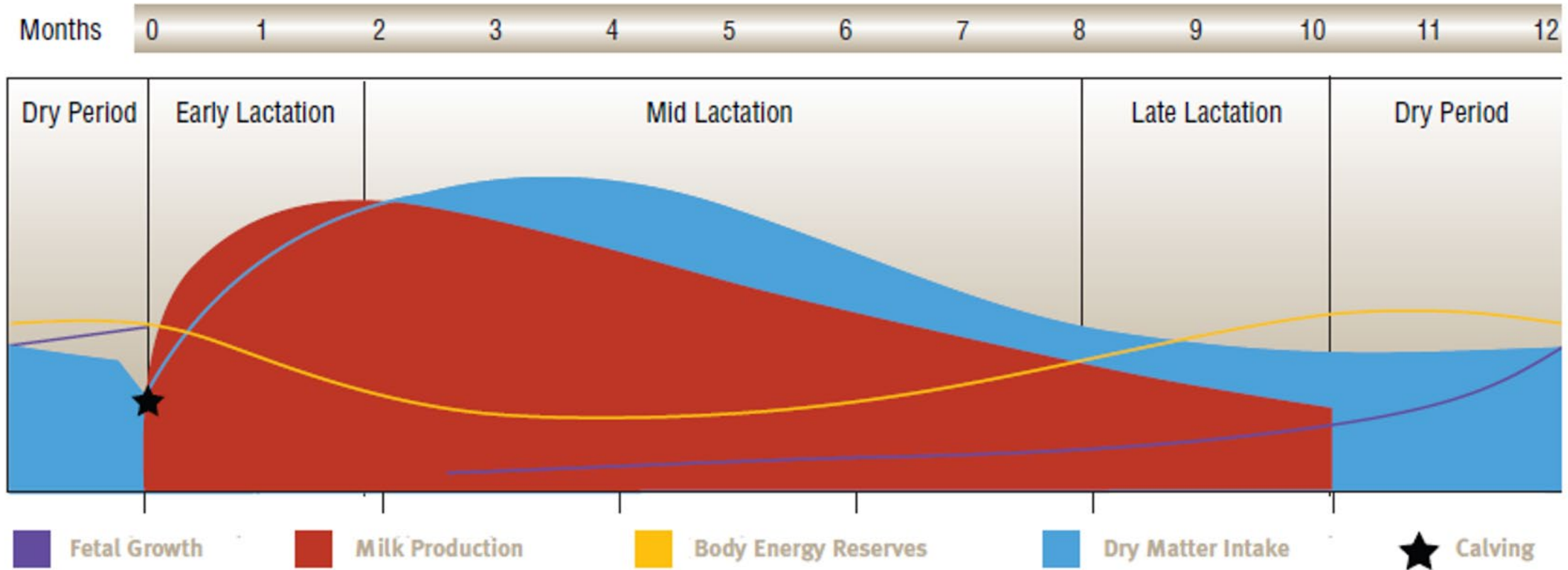
Transition period

4 weeks before to 4 weeks after calving

Diet during this time is a major determinant of health and reproduction



The “lactation curve” of a dairy cow



(Source: Elanco, 2009)

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The transition period

It was discovered early that pre-calving nutrition could be used to prevent milk fever

It was then discovered that pre-calving nutrition could be used to prevent (or cause) nearly everything else!

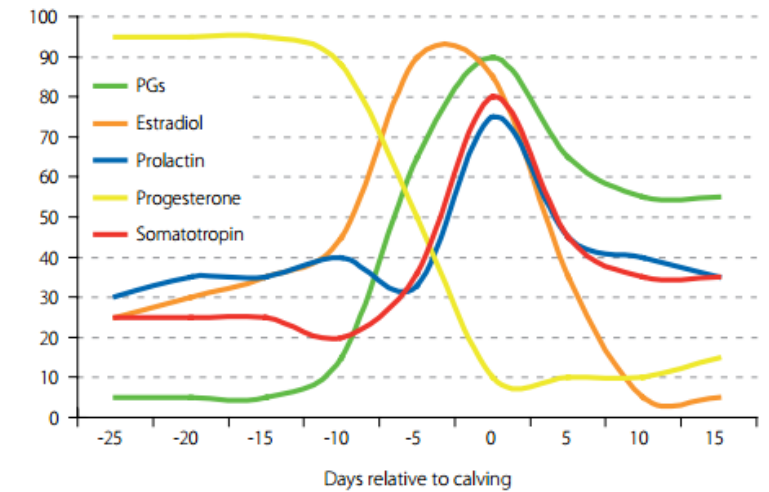
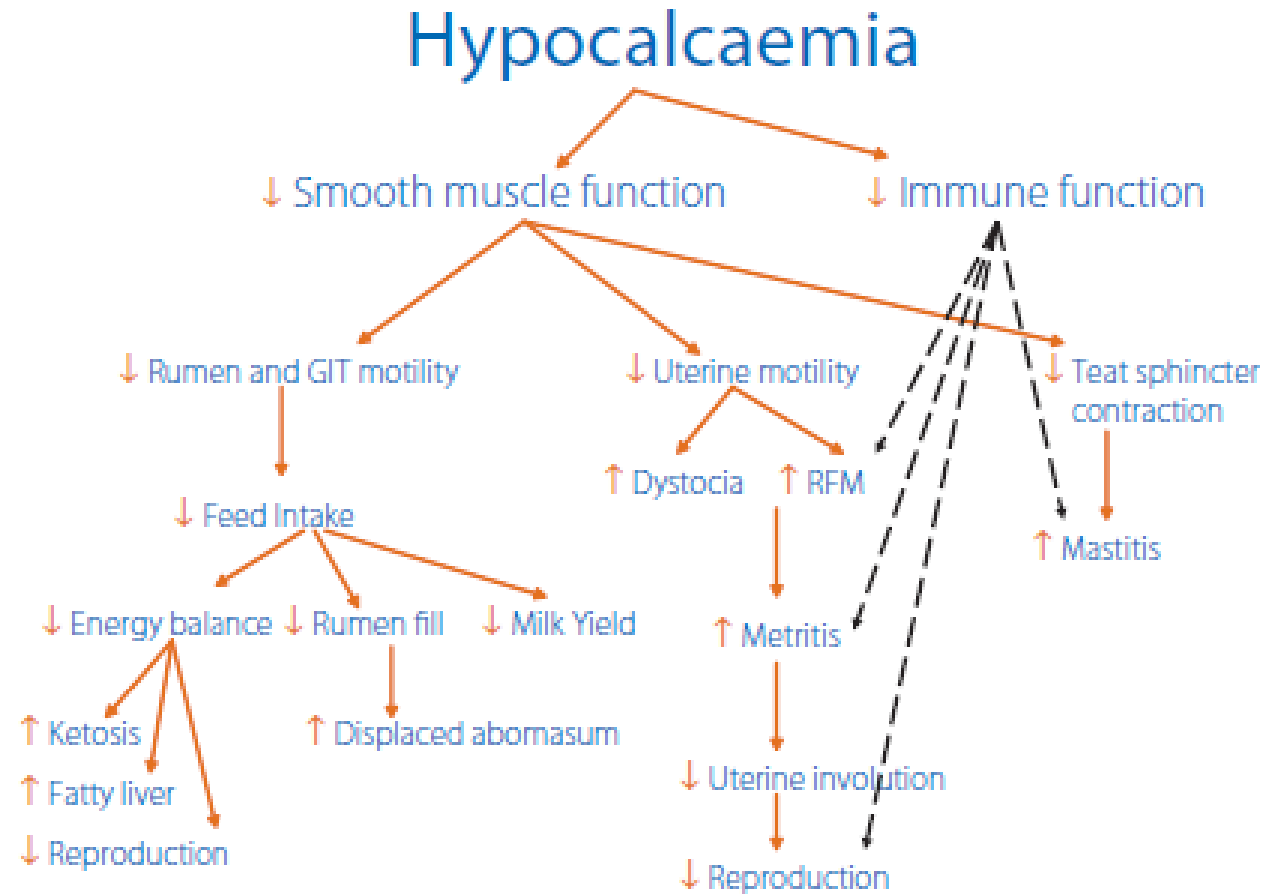


Figure 1: Changes in hormone concentrations around calving.

Table 2: Achievable targets for cow health problems (expressed as percentage of cases of calving cows within 14 days of calving).

| Health problem | Target | Seek help if |
|---|-------------------------------------|-------------------------------------|
| Milk fever | 1% (old cows >8yrs: 2%) | >3% |
| Clinical ketosis | <1% | >2% |
| Abomasal displacements (left or right) | <1% | >2% |
| Clinical mastitis | <5 cases / 100 cows / first 30 days | >5 cases / 100 cows / first 30 days |
| Lameness (Sprecher locomotion scale 1-5) | <2% with > Score 2 | >4% with > Score 2 |
| Hypomagnesaemia (Grass Tetany) | 0% | 1 case |
| Retained placenta >24 hrs after calving | <4% | >6% |
| Vaginal discharge after 14 days | <3% | >10% |
| Calvings requiring assistance | <2% | >3% |
| Clinical acidosis | 0% | 1% |
| * Based on the following data sets: Morton, Curtis, Beckett, Moss, Stevenson. | | |

Hypocalcaemia – the “gateway disease”



DCAD – Dietary cation-anion difference

More properly DCAB (B=Balance)

Diets are electrically neutral, with a balance of cations and anions

Strong Ions are ones that are highly bioavailable and not metabolized

DCAD theory $DCAD = (Na + K) - (Cl + S)$

Less is more ...

“Anionic salts” added to the diet

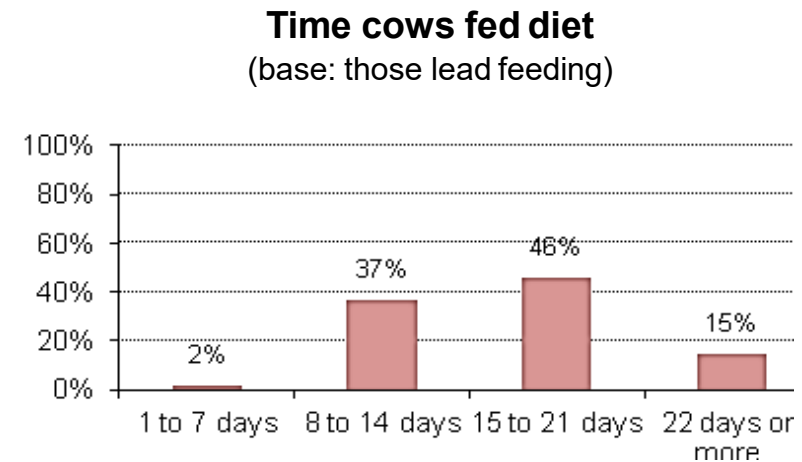
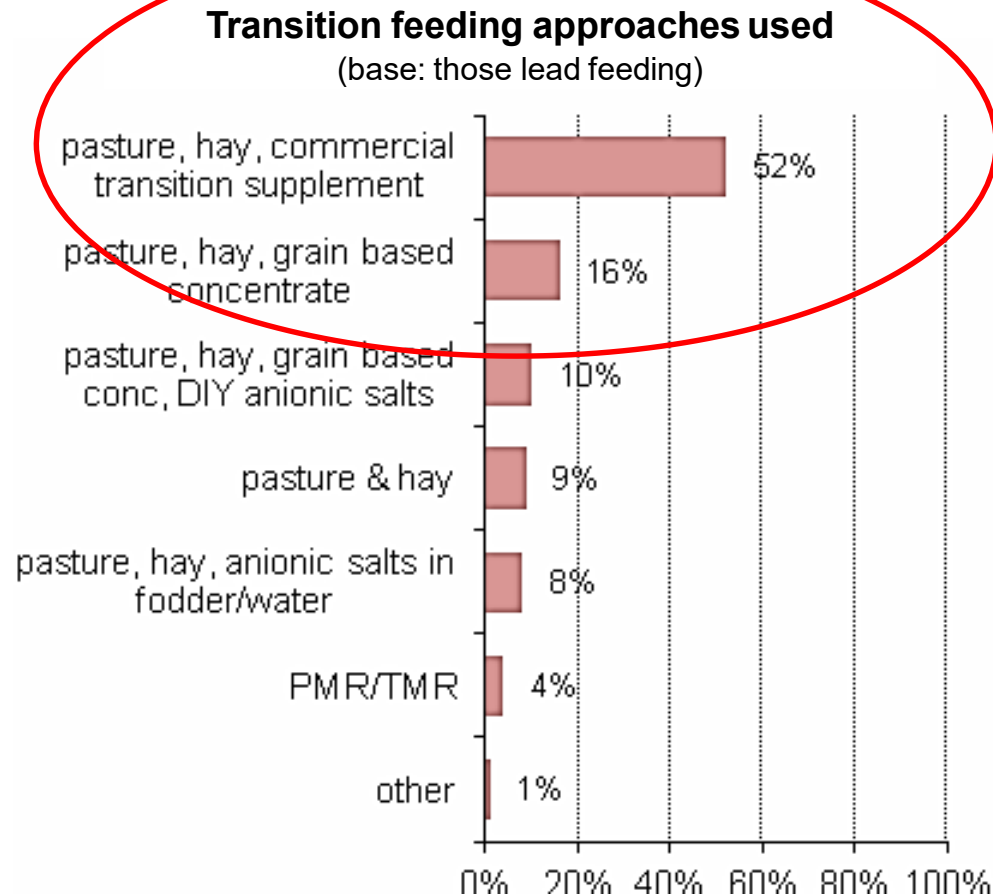
- ammonium chloride (NH_4Cl), ammonium sulphate $[(NH_4)_2SO_4]$, $CaCl_2$, calcium sulphate ($CaSO_4$), magnesium chloride ($MgCl_2$) and magnesium sulphate ($MgSO_4$)

Very small changes in blood pH

Measurable changes in urine pH

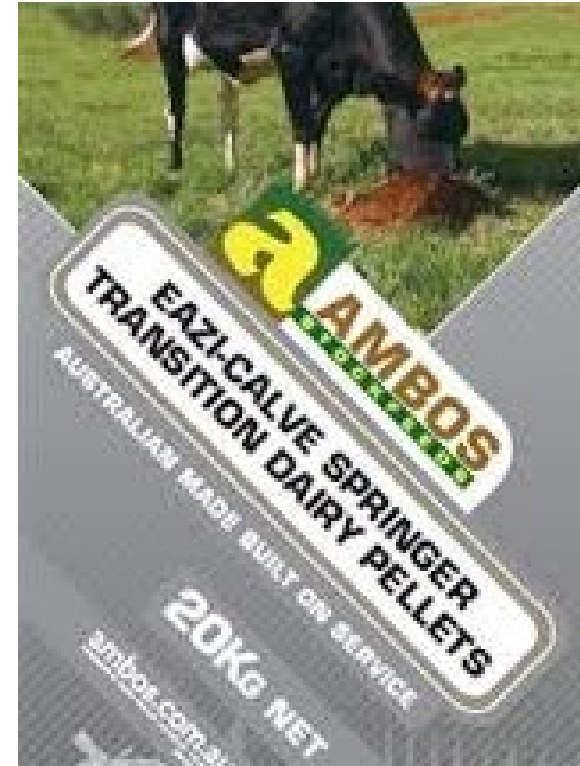
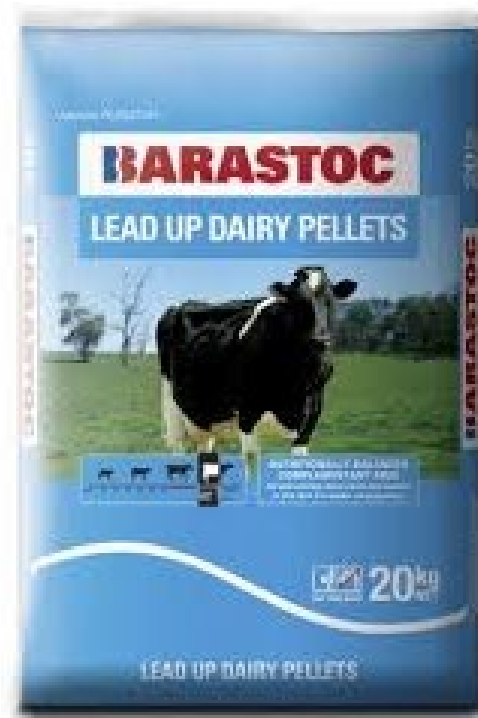
Small changes in blood pH can have large effects on parathyroid hormone receptivity and ultimately the risk of clinical milk fever

Transition cow management practices on Australian farms



Source: Dairy Australia National Dairy Farmer Survey, 2011
(1,005 respondents)





Lead feed





ARE ALL THE BOXES
TICKED ON THIS FARM?

Checklist for Transition Cow Management



[Dairy Australia TCM resources](#)





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AEPS – DAIRY WEEK 1

