A. Meeting the energy demands of lactation. This will involve adaptation of the rumen — a rumen that is unadapted cannot handle high energy feeds in early lactation without risk of rumen acidosis. It also involves enhancing total feed (and therefore energy) intake.
B. Maintenance of normal blood calcium levels; Note that I am not only talking about preventing milk fever but attempting to normalize blood calcium.
C. Reducing the degree of immunosuppression that occurs around calving. In virtually all species examined

1

fatty liver-ketosis syndrome. On average, dry matter intake decreases by 20 to 30% 1 or 2 days before calving, and does not recover until 1 to 2 days after calving (Bertics et

The conclusion is that energy intake must not be compromised during the days around calving. Any factor restricting feed intake around calving (such as milk fever or retained placenta) increases fat accumulation in the liver and affecting the energy deficit of the cow increasing the risk of fatty liver-ketosis.

2

Strategies for prevention of Negative Energy Balance and Ketosis

Control body condition of cows.

3

Cows should calve with a body condition score (BCS) of 3.25 to 3.75. Cows with BCS of 3.25 will eat better than cows with BCS of 3.75. However a 3.75 BCS cow that is well managed could potentially produce more milk.

length. Recommendation: Our own observations suggest that American cows do not suffer such a large decline in rumen papillae length — probably because our far off dry cow rations tend to incorporate at least some starch (corn silage) so rumen papillae length es not decline as much so 3 weeks in the close-up en should be adequate for cows. However, heifers do

4

calve 2 weeks early! Remember too that the standard deviation for calving date is + or — 9 days ; thus, to ensure that 95% of cows in a herd will be on a pre-fresh ration for at least 2 weeks before freshening means that cows in the herd should be started on pre-fresh rations 23 days before their due date.

5

Strategies to Increase Total Calorie Intake in the Fresh Cow.

High Starch Rations in the Close-up Pen. ↑ Starch

Increase Starch in the diet >>> Propionate>> Liver >>> Glucose

How high can we push the NFC (roughly equivalent to the starch content in most cases) in the pre-calving and post-calving diet? 35% NFC → ? DMI

- Easy transition to lactating diet with 45% NFC
- Stimulation of DMI
- However, High NFC >>> low NDF>>> Increase the risk of DA

6

key is to feed a forage that supplies adequate effective fiber (ie. particles that are greater than 1.5 inches long that help form a mat on top of the rumen fluids), and is not so long or so unpalatable that it is sorted out by the cows.

Strategy — Add Fat to pre-fresh and post-fresh rations to "spare the body's glucose"

production and improves body condition. Recommendation — do not use supplemental fats until after 2 to 3 weeks into lactation.

7

Strategy — Calcium or sodium propionate and propylene glycol added to the ration.

- Costs : $0.20/day
- Feed only if you have Ketosis issue
- Drenching Costs: Avg $6.00

8

Strategy — Increasing dietary protein in transition and fresh cow rations.

- There is no need for increased crude proteinthat
- Heifers 15% Crude protein
- Close up cows 13% to maximum 15%
- Fresh Cows 17-18% CP
  - Avoid too much RDP (65% RDP /35% RUP)

Fresh cow pen rations should have 17 to 18% crude protein with 10.5% of the ration being rumen degradable protein and the rest bypass protein.

- Too much protein:
- Increased $$$
- Decreased nitrogen utilization
- Increased urea and lower fertility

9

Strategy — Add Yeast products and Direct Fed Microbials ?????

Strategy — Add Ionophores (lasalocid, monensin) No Longer

Ionophores remain illegal for use in close-up and lactating cow rations in the USA.

Strategy — Add Choline ?????

Increases fat mobilization and reduces fatty liver…Cost $0.1/day

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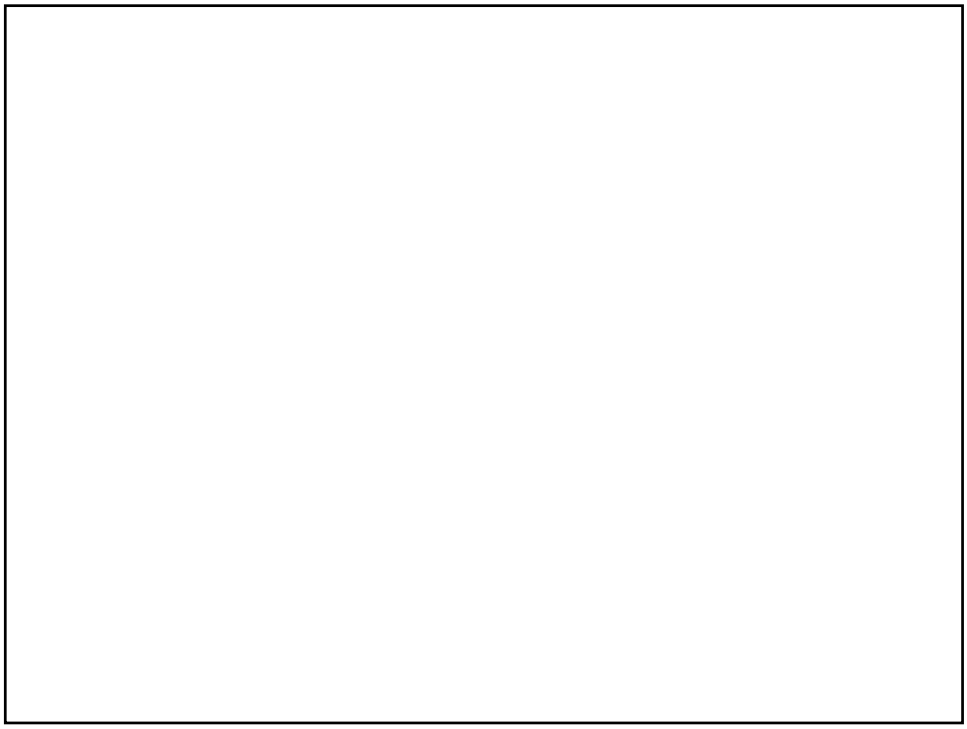

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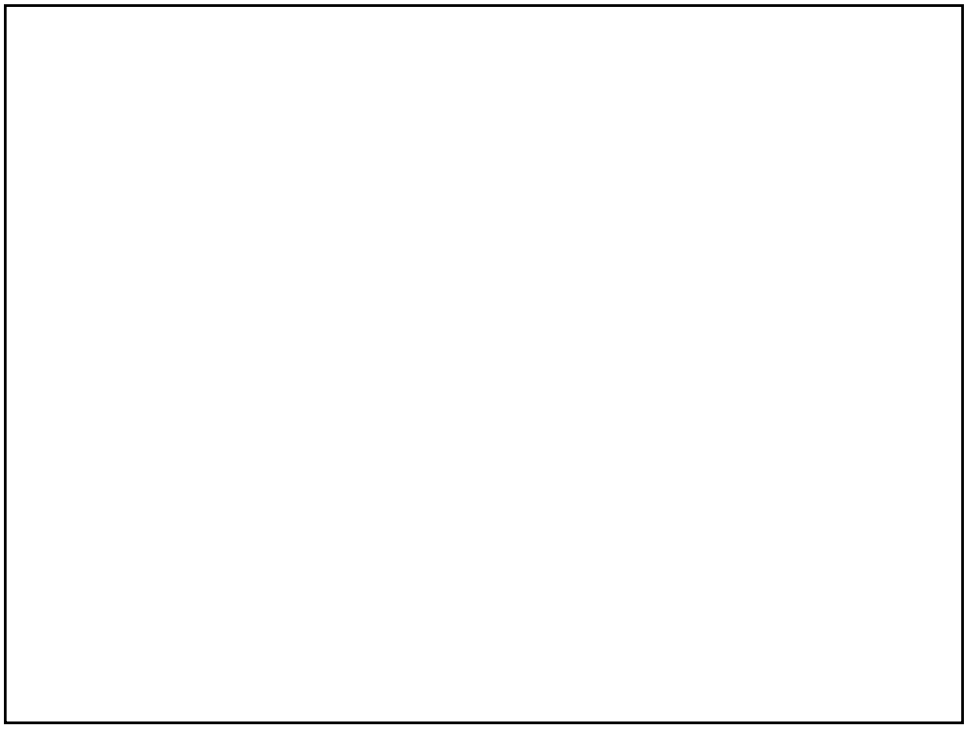

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