a few weeks had dropped to 2.8%. The feeding rate was high, but not exceeding the 40:60, forage:concentrate ratio. The ear corn was coarsely ground with some husks present. The quality appeared very good and had a rather typical odor.

Addition of buffers resulted in only a 2 to 3 point increase in milk fat test.

Feeding 3 times a day had no effect on milk fat test.

The dairyman had ample supplies of dry ear corn and also fed steers. When he switched to ground dry ear corn, the fat test returned to normal in about 2 weeks.

It was conjectured that some sort of microbial activity was going on ahead of the unloader in the silo and 2-3 feet of HMEC was removed and either fed to steers or discarded. However, when the cows were again fed this HMEC, the fat test dropped again.

Case History #2: Fat test 3.6% declines to 2.6%. Sixty cow herd in stanchion barn, 16,000 lb. herd average. Forages include: corn silage, low moisture hay silage, and baled hay. Grain: High moisture (28%) shelled corn and about 50% of the cob stored in a bottom unloading, poured concrete silo.

The milk fat test had been going through many declines and then recover. In an attempt to alleviate the problem, all of the ensiled forages were discontinued and only long hay was fed about 20 lbs./cow/day and HMEC fed at 15-35 lbs./cow/day. This did not solve the problem. Three times a day feeding did not solve the problem. Buffering with MgO and $NaHCO_3$ partially restored the milk fat test.

A dry corn oats ration was substituted and the milk fat test returned to normal in 2-3 weeks. Gradually the HMEC was returned to the ration with buffers and the fat test dropped some but not to the previous low tests.

On the supposition that there was an ionophore effect (Monensen) a sample of the HMEC was kindly tested by Ely Lilly & Co. for any ionophore content in their artificial rumen assay. No ionophore activity was observed.

When milk fat test depression is encountered (where ensiled feeds are fed) where buffering does not effect a reasonable cure, shifting to dry feed is efficacious and may be recommended just on the basis of lost income due to price differential.

Fiber II – Displaced Abomasum as a Herd Problem

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Displaced abomasums (DA's) can be a serious herd problem. Often DA's may be preceded by other metabolic diseases at parturition such as milk fever or fatty liver syndrome. Various authors have described a variety of possible causes. Today we hear of DA's occurring pre- or post-partum most often in the first 2 months of lactation. It is not uncommon for DA's to occur at any time of the lactation cycle.

As a part of the metabolic profile test design project and our field services program, a standard approach was used to study these herd problems.

Case #1

During the previous 12 months there were 10 cows operated on for DA's. Forty Guernsey cows were housed in a stanchion barn. There were no other complaints. Nearly all of the cases occurred in the first 2 weeks of lactation.

The ration consisted of baled grass-alfalfa hay and concentrate. The concentrate (made up of ear corn and oats) was balanced in minerals, salt and vitamins and the supplemental protein was primarily urea.

There were no detectable abnormalities detected in the metabolic profile tests. For the solitary reason of poor utilization of non-protein nitrogen in cattle on a grass legume ration, the recommendation was made to balance the ration for protein with soybean meal. In the succeeding 2 years there were no new DA's. The next year there were 2 cases and in the last 3 years no new cases. Coincidence??

Case #2

This Holstein herd (with a 17,000 RHA) housed in 60 stanchions had an epidemic of DA's. Of the previous 17 cows calving, 12 had milk fever and of those 6 had surgery for DA's. Two milk fever cases became downers and died. In each case, milk fever was the initial problem followed by a DA and several developed metritis. Cows calved in stanchions and sanitation was not ideal.

The ration featured several problems. Baled hay was limit fed along with haylage and corn silage cut ¼' with a 1" screen in the chopper. Shelled corn in the ration was ground fine. The dry cow program had recently been changed to include four sources of vitamin A and D and at least 2 times the requirements for Ca and P. Metabolic profile tests revealed increased serum phosphorus.

Recommendations: 1) One adequate source of vitamins, and calcium and phosphorus to NRC recommendations 1

oz. of dicalcium phosphate; 2) Grind the concentrate as coarse as possible, yet crack all corn kernals.

Response: Two DA's in the next year.

Future: Remove screen in forage harvester to ensure adequate length of cut.

Case #3

This herd of 35 cows housed in tie stalls was producing about 19,000 lbs. of milk. During the summer of 1981, there were 5 DA's, one became a downer and died. During the summer of 1982 1 more cow was operated on for a DA.

Rations: 1. Milking Cows
- Approx. 40 lbs. corn silage
- Free choice baled hay
- 10-35 lbs. of grain mix
- Protein supplement 5% added fat

2. Dry Cows
- Free choice baled hay
- 10 lbs. corn silage
- 5 lbs. commercial dry cow concentrate

DA's occurred in summer. Why?

A. Hot weather equals decreased DM intake.
B. Field work = increased corn silage and grain too fast.
C. Purchased out of date (special price) high fat protein supplement (rancid?)
D. Does high fat supplement complicate ketosis-fat cow-DA syndrome?

Case #4

This 120 cow Holstein herd producing at above 17,000 lbs. of milk housed in a free stall had a 60% incidence of DA's in the previous year. Fifty percent of the DA's were in late lactation. Sub-clinical ketosis was present in many cows. Ketosis-milk fever (?) at calving—Alert cows down that responded to calcium therapy. There were computer balanced rations for 3 production groups and the dry cows. It was basically 4 total mixed rations plus free choice hay.

Metabolic profile tests revealed anemia, increased calcium and increased phosphorus.

Ration abnormalities:

1. Excessive calcium and phosphorus in diet.
2. 20 times Vitamin D and 10 times Vitamin A.
3. Dry matter intake calculated to be 60 lbs. in high production group (decreased hay intake).
4. Odor of acetate in corn silage.
   - high acetate to propionate ration in rumen fluid.

Changes made were a reduction of abrupt ration changes, but still having some problems.

General Recommendations

If it works, don't fix it, you might break it. There are no specific recommendations that will work in every case. Standing back and looking at the facilities, feeding program and the dairyman is very important in understanding the problems that are inherent and the problems that are introduced by the people involved.

There are 2 recommendations that are always important in prevention of DA's and the periparturient disease complex.

1. Avoid abrupt ration changes.
2. Do not chop silages shorter than ¼" theordical cut and do not use a screen.

In addition, if problems are occurring, return the ration to its simplest but completely balanced form in mineral, vitamin and protein considerations.

Milk Fever Prevention Update and Vitamin D_3 Toxicity

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Milk Fever Prevention

Discussing problems of milk fever with practicing veterinarians today reveals that in some herds there are occasionally epidemics that occur for a variable period of time in some herds. The overall incidence in the U.S. is apparently down from the 8-9% of the 1960's to about 6-7%. However, sales of milk fever treatments may be rather stable. This may also mean that the average milk fever cow may get 2 bottles per treatment.

Today, in the large herds, where caloric and calcium intake are very closely regulated to minimize overfeeding of energy and calcium, the herd incidence of milk fever may be below 1%. The major question for the medium size farm is whether or not it is worthwhile to prevent milk fever if the management upset is too great. This is a real problem for