



Fresh Cow Management: What is Important, What Does it Cost and What Does it Return

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For the last few years there has been increased attention directed at fresh cow management. The focus point has been the early detection of sick fresh cows so that they might receive prompt medical attention. For most programs this amounts to using an electronic thermometer to detect fevers that might be caused by toxic uterine infections. Dairymen that have adopted these “temping” programs definitely perceive some benefit. The impression of our veterinary practice is that there are considerably greater opportunities in a fresh cow program with a more complete, intense and proactive process.

It is important to remember that genetics contributes about 30% of the productive potential to a dairy. It follows that the environment provided by management contributes 70% of this potential. The focus of this presentation is the overlooked management opportunities.

In the early 1990’s the doctors and clients within our practice found that left displaced abomasums (LDA) could be fixed sometimes without surgery. The medical therapy used was based on a 5 gallon oral drench with 100 grams of calcium, 12 oz. propylene glycol, probiotics and a complex electrolyte package. This was directed at hypocalcemia induced LDA’s and ketosis. Injectables included D panthenol to stimulate gut motility. The calcium would tone up the gut muscle and the D panthenol might push the gas out of the abomasum. The keys to a successful outcome were: 1. early detection of the LDA, before other secondary complications became severe, 2. diagnosing the primary cause of the LDA, such as hypocalcemia, toxic metritis, pneumonia etc and 3. effectively treating not only the primary disease(s) but also all the secondary problems. In the hands of our more skilled herdsman 30-50% of LDA’s could be corrected to perform at least as well as cows that received surgery. A memorable example was a shocky 7-day fresh heifer with toxic metritis, pneumonia, and an LDA. She was treated with the described calcium drench, D panthenol 3 times, penicillin and Albon. The heifer recovered without surgery since all the issues were addressed promptly and effectively.

Several years of success with this approach has taught us that aggressive early intervention is the key to keeping cows on track to a more productive lactation. Cows are like trains. They have the ability to sustain their productive inertia better than other biological factories. However, if disease slows a cow down or derails them, it is hard to fix a cow such that they achieve their full productive potential. Our dairymen that have intense fresh cow programs have found they can discover and treat sick cows so quickly that they never experience a reduction of milk flow.

It is also true that these dairies experience less than 1% LDA's. Consequently, we see significant success with fresh cow programs. This is especially true if they are more intense than just taking the rectal temperature of a cow and injecting an antibiotic.

What is important in fresh cow programs:

In the last two years we have discovered that the most important ingredient to fresh cow health is a separate pen for them during the first 10 -14 days in milk. When fresh cows are mixed in with the rest of the herd it is hard to find them for evaluation. It takes about 1 man-hour per day to evaluate and treat the fresh cows for a dairy with 500 in milk. This is more efficiently done with one person managing the data and checking the front of the cow while the other person temps and examines the rest of the cow from the rear. With intense evaluation and treatment of fresh cows 95% are ready to join the milking herd by 10-12 days in milk.

A second and even more valuable reason for a fresh cow pen is dry matter intake. Fresh cows and especially heifers do not compete well with longer days in milk cows for feed. Plan a fresh cow pen for 85% occupancy of lockup feed space. There should be 15% more lockups than fresh cows at your peak calving time. Some dairymen have put a movable panel in to adjust the size of the fresh pen as the number of fresh cows changes. About 4.1% of the entire herd inventory will be in the fresh pen of a normal dairy with a 13.5 month calving interval. Seasonal breeding will affect this. As we look at the performance of heifers, it is worthwhile to separate the fresh heifers from the cows to achieve maximum benefit. Dry matter intake per cow of a proper ration should be in the 40-45 pound range for a fresh pen of 1/3 heifers and 2/3 cows. The importance of reduced competition at the feed bunk has been rediscovered many times when too many cattle calve in a short period of time and/or lame cows are added to the fresh pens since they are often close to the parlor. When this happens there are an increased number of cows with higher fevers. Inevitably more drugs are used to correct the situation.

My clients have found that measuring a cow's rectal temperature is not always an adequate representation of her post calving health. Her metabolic status is just as important as her amount of infectious disease. To date many fresh cow programs have been based on cows with temperature being greater than 103 or 103.5. They are chalk marked as abnormal and treated with Naxel or Excenel. The next day depending on their temperature they may get treated again with either of these antibiotics or receive penicillin in the hospital if they are not responding. Indeed this simple fast program might capture up to 50% of the cow health opportunity available.

The first thing to realize is that rectal temperatures are not always accurate indicators of infection. The GLA electronic thermometers are very good but only as accurate as the operator. A rectum full of air will give a temperature colder than reality. Use the vulva with a clean probe (to avoid urinary tract infection) as an alternate site especially if a rectal exam has just been performed. Full insertion is critical. *Remember forceful introduction of the probe will cause ulcers in the rectum.* A right angle probe helps this. Taking rectal temperatures at the same time each day makes results more consistent. To limit the effects of weather the best time of the day is in the morning. Cows with hypocalcemia tend to have body temperatures that are colder than normal except in hot weather. Consequently do not expect a hypocalcemic cow to be able to develop a body temperature that accurately represents the severity of her infection. How many times have you seen very toxic uterine infections and yet the cow may have a rectal temperature of 103 or less? It is just as important to recognize and treat cows with below as well as above normal body temperatures. Regarding hot weather the heart and lung component of thermoregulation is impaired and hypocalcemic cows can overheat, especially when the radiant heat load is high.

The next level of response to help the fresh cows more is performing a thorough physical exam of any cow that does not look or temp normal. For us normal is between 101.5 and 102.5 F. Your herd health veterinarian can help your personnel learn how to examine cows. There is a cow exam and treatment form at the back of the article to serve as a guide. Dr Tom Fuhrmann offers a course through his Dairy Works system on fresh cow exam and treatment. Developing a protocol for examining and treating the fresh cows is an important step to a consistent and successful fresh cow program.

A cow exam begins with a visual evaluation. Most herdsmen can recognize a depressed cow that is not producing enough milk and/or has inadequate rumen fill. Checking their ears for the coolness of hypocalcemia and shock is quick. Rectal temperatures should be taken and recorded. Temps below 101.5 or above 103 are of immediate concern. A more complete physical exam needs to be performed on any cattle that are abnormal in the previous categories.

A good physical exam would begin with a stethoscope. The lungs, heart and rumen sounds are initially evaluated. Next both the right and left sides of the abdomen should be tested for a displaced abomasum. Last the cow is palpated. The uterus is palpated to determine the intensity of possible infection. Manure quality relates to digestive function and should be evaluated. The prevalent problems in order for most dairies fresh cows are toxic metritis, hypocalcemia, mastitis, diarrhea and pneumonia. Often this would include 95% of the fresh cow illnesses. It is not that difficult for skilled herdsmen to learn how to recognize these situations and the secondary complications of DA's and ketosis. These diseases can occur at the same time. Assuming that a cow has only one problem leaves opportunity on the table. All cows with toxic uterine infections during the first 12 days in milk receive 2 cc of ECP. This often reduces fevers alone eliminating the need for antibiotics. Fortunately starting full dose Excenel or Naxel therapy for at least 3 days has merit since it has a rather broad spectrum of effect. It can be an appropriate and very effective way to treat toxic uterine infections, pneumonia, and salmonella type diarrheas when they are diagnosed early. Any hypocalcemic cows should get at least 100 grams of calcium orally. This is commonly done with 1 pound of calcium propionate. Therapy with IV calcium should always be considered on these cows based on clinical signs. Such treatments are minimal responses. Additions and alterations need to be made based on how well your cattle respond and what other problems exist at your dairy. For example, if grass tetany is a concurrent problem, then ½ pound of Epsom salt in the drenches of shocky or just fresh cows could be valuable. With our higher potassium close up cow rations some fresh cows can have low potassium levels. Adding ¼ pound of potassium chloride to drenches is helpful. Other supportive care for liver health and appetite should be considered based on recommendations from your veterinarian. Some products to be considered in the supportive care of fresh cows are: Banamine or aspirin for toxic infections, Predef for ketosis, dexamethazone for calving paralysis (first 24 hours after calving), vitamin B complex for appetite, and Vitamin ADE for the vitamin D influence on calcium metabolism.

The response to therapy should be based on daily exams. Knowing the actual rectal temperature from the previous two days facilitates a better evaluation of treatment decision. Just understanding that a cow had an abnormal or normal temp today does not really tell you which way her infection is going or at what rate. A cow that goes from 102 to 104 is of greater concern than a cow whose temperature goes from 102.8 to 103.5. Also a toxic metritis cow's temperature that has not been reduced in 24-48 hours by Naxel should probably be switched to penicillin and perhaps given even more supportive care in the hospital. People that get very skilled at reading the health status become more accurate at deciding which cows need antibiotics and which can afford to wait until tomorrow's exam. We find that the interpretation of the clinical signs causes us to treat some cows due to suspicious anticipation of the problem being worse tomorrow. Today my dairymen score the degree of toxicity in uterine discharge to guide this decision. For example a cow with cold ears, a temp of 102 F and a toxic uterus would be treated for hypocalcemia and also start Excenel therapy. Unless a cow gave birth to a rotten calf, we tend to be less critical of high temperatures up to 103.5 for the first 3 days after calving. In the hot summer months of Idaho it is prudent to be more reactive to signs of fever. Infections tend to develop quicker in the heat. This means lowering your reaction temperature at least 0.5 degrees F and maybe not allowing the cow another day to self reduce her temperature is advisable.

By 10 days in milk, the fresh pen cows that are normal after daily exam are candidates to be moved to the standard milking strings. All these cows should have their uterus checked one last time for a toxic infection. Perhaps offensive odor is one of the best clues that distinguish between toxic infections and the less toxic white puss of pyometra. Cows that still have toxic infections should be held back and treated more aggressively. This would likely involve the hospital with penicillin, supportive medicine, and perhaps intrauterine tetracycline. Cows with normal uterine health or white puss can be moved safely to the main milking strings. Further recovery of uterine

health is facilitated with Lutalyse on day 12 and day 26 in milk. These days in milk are critical to having the most effective response.

Additional benefits of a fresh cow protocol:

Finding and treating sick fresh cows is important. A fresh pen also allows an opportunity for management procedures to be instituted to prevent or reduce the severity of postpartum problems. This is a proactive approach that keeps the momentum of the “Cow Train” up. It also tends to reduce the amount of antibiotics used and thus the drug costs associated with treating fresh cows. It has been the experience of our practice that every fresh cow should receive 1 pound of calcium propionate and 12 ounces of propylene glycol just after she calves. This is insurance against any dry matter intake/energy intake and/or mineral intake problems that go undetected in the close up pen. Cows that develop less hypocalcemia and ketosis in the fresh pen have fewer complications with other postpartum diseases. ECP at 2cc given at the first sign of a uterine infection temperature can reduce the fever on a significant number of cows and eliminate the need for antibiotics. Administering ECP to every fresh cow 3 days after calving may be even more proactive. We do not use more than 2 cc of ECP or dose any more frequently than every 4 days. Excessive dosing can be detrimental to the cow’s reproductive tract. Please realize that these uses of ECP are not on the product label and require the prescription support of your veterinarian. An additional proactive step is to perform rectal exams on all cows at 4 and 8 days in milk to detect uterine infections that are missed by other exams.

Perhaps the most important and overlooked value to a fresh cow program is the disease information that it provides which can be used to evaluate the transition period management. This portion of the lactation cycle is arguably the most important. Much of the outcome of the lactation can be decided here with good management procedures. If the frequency of hypocalcemic cattle is up it is time to investigate the close up feeding program. Hypocalcemia a few days in milk can also be caused by depressed intakes in the fresh cow pen. Keep in mind there is up to a 7-10 day lag between an error in close up mineral nutrition and a fresh cow problem. Ketosis and fatty liver problems in fresh cows can be linked to energy intake of close up cows. Fresh cow mastitis problems should direct dairymen at the entire dry cow period regarding how cows are dry treated, vaccinated, fed and housed. Nutritional profiling looks at the metabolic status of a cow as influenced by her nutrition. This is a useful tool to solving transition cow problems. In summary careful management of transition cow nutrition is probably the most useful tool for maintaining fresh cow health. A thorough fresh cow program provides insurance to compensate for unexpected errors in transition cow management. With good records it provides an early warning system of developing management problems.

Cost of fresh cow programs:

Creating a fresh cow pen is easy for some dairies. All they need to do is put up a gate within the current facility to form a separate area. This may crowd other milk cows, which is a concern. Some dairies may need to build a new facility to accomplish a fresh pen. Perhaps open dry lot space can be constructed for \$300 per cow. However, this is not adequate for fresh cows, as they need more protection from the elements. Freestalls can be another approach. They might cost \$1200 per cow. Perhaps the best is an open pen with protection from the rain, sun and wind. However, bedding costs and labor are an issue if the hygiene of these fragile cows is to be maintained. It is important to plan for 15% more space than the maximum number of cows that will occupy the pen.

Fresh cow exam/treatment costs for two of our dairies are about \$10 per cow per year. This was based on skilled labor that costs \$20 per hour. Plan for your most skilled personnel to be conducting the fresh cow program. It takes at least 10 hours of assistance from a veterinarian to train your herdsman. After that budget at least 1 hour of veterinary time per month to maintain and modify the program as disease characteristics change and new technology develops.

Drug costs vary depending on base price. The following total drug costs are those directed at preventing and correcting hypocalcemia and toxic uterine infections. When the pen has standard cow numbers and pressure figure

that 1/3 of the fresh cows will get a 3-dose regime of Excenel or Naxel. All cows could get 1½ total doses of ECP. All cows will get a drench of calcium propionate and propylene glycol. Less than 5% of the cows should end up in the hospital on penicillin. The average cost per fresh cow is about \$20 for drugs plus \$10 for labor. Each treated cow will receive at least \$60 in therapy. Depending on the dairy a certain proportion of the labor would have been spent treating the additional sick cows that were prevented by the program.

Returns from a fresh cow program:

The most obvious improvement that just about any degree of fresh cow program can realize is a reduction of LDA's to at least no more than 3% of the milk cow herd. With an intense program the LDA's should happen in less than 1% of the cows. You need to value the cost of an LDA not only for the surgery but the lost milk production. For our herds it is easy to manage the cows at no more than 3% death loss and 20% involuntary culling. More of the death and involuntary culling tends to occur in the first 3 weeks after calving. The most measurable and immediate benefit is an increase in peak milk production. In the last two herds where these intense fresh cow programs were instituted peak milk was 8-9 pounds higher. Neither of these herds overcrowds their lock ups for any of their milk cows. This looks to be important for the full potential of the increase in peak milk to be realized. In the Idaho dairy that we have reasonable data on, the return for each drug dollar invested was about \$8 dollars of milk revenue. If we charge all the labor costs of fresh program against it then for each dollar invested we received \$6 in milk revenue. Cost of producing the extra milk was accounted for. It is difficult to accurately value the reduced involuntary loss of cows on this dairy. While other management changes were beneficial, it looks like the fresh cow program contributed significantly to saving about 140 cows in 2001 for this 1000 plus milk cow herd. The death loss in this herd was reduced from about 7% to 3%. The involuntary cull rate went down from 37% to 19%.

Important thoughts to remember:

Clinical disease is like the tip of the cow health problem iceberg. For what we find as clinical disease there is perhaps 10 times the cows afflicted with subclinical disease that go undiscovered. All this disease has to a certain degree a negative effect on cow performance. The intense fresh cow program discussed gives dairymen a significant way to capture much of this potential.

When a cow becomes more diseased, the more drugs it takes to treat her with less potential to recover her to normal health. By the same token letting the cow train slow down costs peak milk and total lactation production.

Conclusions:

From what we know so far, it looks like intense fresh cow management programs are very profitable in terms of milk production. At the price of replacements today and for the significant future, intense management can be done to reduce the involuntary loss of cows. Overcrowding cows in the fresh pen has a definite negative effect on cow performance. Adequate feed space for all the milk cows should be strongly considered.

There have been a number of recommendations that use prescription drugs. Some drug uses are extra-label. All these require a client patient relationship with your veterinarian. Your veterinarian should establish dosage amounts and frequencies that they are comfortable with. In doing so milk and slaughter withholds that your veterinarians establish should be respected to preserve the quality of our food supply.

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