

the sale barn you are not going to see it or it has already come out. The type of suture we put in depends on the season and the fly problem. Normally, we just put in two simple interrupted sutures and let them out. That will leave a little bit of a gap which doesn't seem to be any problem. If the flies are beginning to bother us a little bit, we will make somewhat of a cruciate suture. So you've got an X over the top of your incision and that seals it pretty well and the fly problem isn't as great. If you do not starve these heifers for 24 to 36 hours, that is both feed and water, you are going to have some problems with the rumen trying to pop up into your face or possibly as you make your incision with your fresh blade the heifer jumps and you incise into the rumen or possibly even catch an intestine with your scissors. One more thing that I didn't mention is that the person that is doing the surgery, between times when he is not doing surgery, is back at the table with his arm and his hand, the left one that is doing the manipulating inside the abdomen, soaking in a bucket of water. We use Novalsan plus one of these things that your wives use to soften the water in the dishwasher. It makes it a little slicker plus a lubricating antiseptic type solution. If you keep lubed up it really helps and it eases the pain on the skin and the fingers. From where we go to a bucket that has cotton balls soaked in tamed iodine. I like the scrub tamed iodine rather than the solution because of the lubricating quality. I don't think what you use matters other than the lubricating quality is nice. You reach in, grab a cotton ball with tamed iodine, wipe where we are going to make the incision a couple of times and throw it away. You never go from the heifer back to the buckets with anything but the actual instruments that we are using on her.

Wooden Shoes for Cattle

John B. Herrick, D.V.M.
Ames, Iowa

Veterinarians are frequently confronted with the cow or bull with necrotic pododermatitis or any form of necrotizing infection of the tissues within and surrounding the hoof caused by infective organisms penetrating through surface injuries. In many cases only one claw is involved, determined after a thorough cleaning and trimming of the hoof. When the infected claw is identified and a supportative arthritis is present, the infected claw may be amputated. If the claw continues to bear weight, recovery is slow or the infection may extend into the phalanx.

A practice that has been successful in many cases is to provide a means by which the weight is taken off the infected claw. The other claw is thoroughly cleaned and the sole is rasped until all debris is removed and the contact portion is level. An electric sander makes the task easier and faster. A piece of hardwood shaped like the claw, approximately 1/2-inch thick, is then placed on the hoof cemented with acrylic. This takes the weight off the infected claw and related articular areas, permitting rapid healing.

The wooden shoe can be left on until removed by use. In most cases, with normal wear, the affected claw will be able to bear weight by the time the wooden shoe is worn down.

Testosterone Treatment in Cattle for Use in Estrus Detection

Estrus detection is one of the important phases in obtaining maximum reproductive efficiency when artificial insemination is used in a beef or dairy herd. Various devices have been used to "mark" the animal in estrus and many different surgical procedures have been devised to create teaser bulls so that they maintained their aggressiveness and libido but could not copulate with the female. These surgical procedures were time-consuming and some techniques required surgical skill. Consequently, another method to create a teaser animal was needed that would be quicker and less costly.

The need was to induce mounting behavior in females or steers. The best candidates are agile dairy steers or heifers weighing from 600 to 700 pounds. Older cows weighing around 1,000 to 1,400 pounds also have been used. Testosterone propionate in oil is used, injecting subcutaneously 500 mg in five different sites and repeating the dosage and procedure in 5 days. A booster injection

of 500 mg is given 15 days later. Each animal is equipped with a chin marker.

Thirty steers, 20 heifers and 10 cows have been so treated and their mounting behavior observed. The steers out-performed the heifers and the heifers out-performed the older cows. The older cows had trouble mounting and fatigued easily.

Twenty-five of the 30 steers responded with 6 needing a booster injection within the 28-day period observed. Fifteen of the heifers responded and 9 of the 10 cows responded and needed no booster injection.

The above technique using testosterone propionate gave satisfactory results when compared to the use of testosterone enanthate and required less injections during the breeding season.

Drainage of Ovarian Cysts via the Vaginal Wall

Frequently ovarian cysts are palpated that possess such thick walls that rupture by digital pressure per rectum provides trauma to the ovary proper, resulting in adhesions. Clinical evidence also reveals that removal of the ovarian fluid (possibly relief from internal pressure) facilitates restoration of the estrous cycle.

A 12-gauge 1-1/2 to 2-inch needle, cupped in the hand, is introduced into the vaginal vault. The other hand in the rectum positions the ovary near the vaginal wall. The needle is then introduced through the vaginal wall into the ovarian cysts providing complete drainage.

If the cyst is of the follicular type, appropriate hormone therapy is indicated along with the drainage of the cyst.

Nitroglycerin for Milk Fever Cases

Warren Wilson, D.V.M.
Plain, Wisconsin

I am an estrus observer from Wisconsin. A true estrus observer from Wisconsin. I have to do a little boasting since I'm up here because we just had twins about six weeks ago and so my wife and I are really enjoying the trip. So that's also reason for coming out here. About a year ago I was in the office of our local M.D. in town and we were discussing some problems that we had in common. Earlier that morning I had had the misfortune of losing a cow to milk fever. As I look back I thought I was not administering the calcium too fast, but maybe I was. Anyway we discussed this problem and Dr. Galarnek said, "You know, Warren, how much nitroglycerin do you use in those cows?" And I said, "We don't use any nitroglycerin in the cows." Or at least I'm not familiar with it. He said, "You know you ought to try it on your next patient." So what do you think I should try. Well he said, "If a little bit is good, a lot is better." I did a little research on this subject. I called Dr. Richard Adams from Texas and we discussed the problem somewhat and he told me that to his knowledge there was really no research done on this problem and so I started out on my own. I went to the pharmacist and we discussed the problem a little bit and he said, "Why don't you take 15-20 nitrostats which are 0.4 mg USP nitroglycerin tablets and insert them in the cow's mouth. And I said, well, how about if you put them in the vagina since that is a mucosal surface and he said to go ahead. So then I was off and running, I was all psyched up. My partner thought I was crazy, but the next time I had a cow that was down and comatosed, had milk fever and had been laying in the gutter all night, I thought for sure I was going to kill her but immediately I started the IV with a slow calcium drip and with close cardiac monitoring I administered 15-20 tablets in the vagina of this cow and the results are hard to believe. You almost have to do it yourself, but it will do several things. No. 1, it will stimulate respiration and it will increase the heart rate and cause a real pounding of the heart rate, but the cow will appear more alert. Now in the research that I have done on nitroglycerin, it is not toxic *per se* at that dosage level. I have found no indications of the dosage in the bovine animal, but I'm just going on some literature. They did an experiment in Michigan whereby they used what was called a cross-clamping technique where they clamped the arteries of some surgery dogs and they found out that when they gave nitroglycerin continuously IV they had better profusion times, they had better cardiac oxygen demand ratios and they had a better livability of their patients. They

did say that it prevented cardiac necrosis and some of the other complications with it. So since that time we have used this on approximately 12 cows. We do use, however, subsequent fluid therapy if necessary with this technique but I do feel if used properly it is something to try. I don't want a lot of lawsuits on my hands if it doesn't work or you manage to kill the cow, but I have found out that it is best when you use nitroglycerin tablets to leave the cow and don't get her up right away. Because if you get her up right away with the nitroglycerin there is a rapid fall in blood pressure and she becomes almost to the point of being unconscious and you swear that you killed her. But the nitroglycerin is rapidly excreted from the bloodstream after it is absorbed. I have used it two and three times consecutively within the same approximately half-hour treatment and in my hands we felt that it has been of some benefit to us. We also feel that it is very hard earlier to determine if there is any metabolic acidosis, but we do feel that with the IV fluid therapy, being Ringer's solution and bicarbonate given at the rate of about 30-60 grams or more of just bicarbonate solution in sterile distilled water, we seemed to have a better response. Now I realize that this is not a proven technique and maybe because of the other techniques employed with IV fluids and the bicarbonate therapy we have been getting better results. I was impressed by these little tablets and so we carried them in our bags and I think it would be interesting for you to try them. I'll repeat the dosage again. We use nitrostat tablets. They are available in any local pharmacy. They retail for \$2.65 for a hundred. Our pharmacist gives us a discount on them. So it is about \$1.30 per hundred. They are 0.4 mg per tablet which is 1/150th of a grain and I have been giving between 15 and 20 tablets vaginally. You put them on your hand and you work them in the mucosa and they are absorbed rapidly. If you monitor the heart before and after you give them, I think you will see the difference. Thank you very much.

Elevating the Bovine Foot

Gary Kramer, D.V.M.
Lima, Illinois

Tonight I would like to discuss with you the problem of elevating the bovine front foot. This has always been something that I have never looked forward to and upon graduation from college the first farm that I arrived at that I had to attempt to trim a foot my first question was where is the tilt table? The farmer looked a little puzzled about that and so I became baptized in a hurry as to the real world and the way it actually is. Oftentimes as bovine practitioners we are called upon to examine feet for various reasons. Maybe a complaint of lameness for an unknown reason. Perhaps an obvious injury to the foot or to do a corrective trimming in the hope that in the future we will be able to prevent a problem from developing. The problem is to elevate the foot with the proper restraint so as to not injure the cow or more importantly not to injure yourself, and to do it quickly with a minimum of time and equipment. When it comes to front feet we have the advantage that in some cases we can use Rompun on the animal and we can go ahead and cast her and put her down in this manner. But the unfortunate thing is, as I am sure many of you are aware that when you do this, unfortunately many times we don't have an ideal spot to drop a cow; maybe all the calf pens are full of calves and the alleyway is narrow and slippery! It's 10 below zero and the snow is coming down outside and that is not ideal either so what do you do with a cow? Well, if you are like me, most of the time you end up getting in beside her and you snuggle up to her and you pick the foot up and about that time she thinks maybe this isn't too bad—"You know this foot has been hurting me all day and I've been standing on the other one"—and suddenly you have the lame foot and she decides to kind of lean on you a little bit and the next thing you know you have about 900 lbs. on you or it seems like that much! And so you go ahead and try to do your best but you are never really totally satisfied. Sometimes you try to tie the foot to a stanchion divider or things like this but there again this is something that is very prone to causing possible injury to the cow and this is something we want to avoid at all costs. So anyhow with this particular technique, it really doesn't take much effort to hold the foot up. I am essentially holding the foot with just one hand.

I'm not holding the weight of the cow, I am simply holding the weight of the leg and I think anybody can tolerate that quite easily. The apparatus that I devised to accomplish this basically is a wire structure that I bought at the local hardware store. There is a chain that comes with this that normally wraps around the post. That would normally go on the bottom. I simply removed that and that's an 18-inch OB chain hanging down there. There are two hooks there. On the other end that's a log chain hook that I bought also at the hardware store and I simply removed the little fastener that normally hooks on to the barb wire in the fence stretching procedure. The way I go ahead and set this up here I more or less play it by ear with whatever is available as far as hooking this up. I have a beam hook that I hook into a beam above the cow and I try to position this immediately above the shoulder of the animal. Sometimes you have a closed in feeling, you don't have anything available that way. So I go ahead and I just hook it right into the stanchion. And there is really no difficulty with that either. I hook an OB chain just around her shoulder and this is all I've really done. I go ahead and I put tension on and simply what it does is, it just more or less relieves the weight of that cow that you would normally have to incur yourself if you were trying to pick up the foot. Surprisingly enough I was quite surprised the first time I tried it. The cows really don't fight it. I put it around there and with no difficulty at all you can tighten it up. Essentially you tighten it enough so that their toes are just barely tapping on the floor. That basically is sufficient to accomplish what you want to do. Dr. Herrick talked about putting on the wooden shoe tonight. We do quite a few of these in our practice and we really like them. It's quite easy to apply one of these to a cow, standing. She'll stand there for 20 minutes and she is perfectly content with very little struggling generally speaking. You can go ahead and apply one of these wooden shoes without any difficulty at all. Sometimes you can also apply a cast if it is necessary.

Apparent Anestrus

Merrill M. Townley, D.V.M.
Chamois, Missouri

The subject that I would like to talk about is the same one that many have talked about earlier, the apparent anestrus. We have had the teaser bulls and testosterone and all of these things. But back in Missouri, where I come from, we have relatively small dairies, under 100 cows. They are mostly family operated, so catching these cows in heat is still pretty important to us and I suspect that in all size dairies the medical part of our job would be a lot easier and a lot more effective if every cow was caught in heat and recorded. Many times we spend extra time dealing with the anestrus cow when if they just had simply caught her in heat and bred her that's all that there would have been to it. Of course when you go to shooting for a twelve-month interval, if that cow is either missed in heat or if she is bred and she has a first heat after the first breeding and you miss her, you end up checking for an open cow that you would have known was open in three weeks if they had used the proper detection. Now we use head detector tabs and they are important but I don't think that anything will replace the good record keeping system and the good management of watching the cows and finding them in heat. The record system that I use is nothing different from what most of you use but we use a barn record and we make it up and mimeograph it and put a piece of carbon in it. I keep a copy and he keeps it in the barn and I take a copy home, the day that I'm there. We do these on monthly visits and then I do the same thing with an examination record. I used to record these on cards and kept a set of cards too but then I found that became pretty time consuming and we now have the family actually keep their own barn record. I mean they record them on their own herd cards and they are the standard cards. It works well because they get used to doing all these things themselves. But the thing that I really came to talk about is the one method that we use in the families. It is a reward system. Our dairies have mostly large families and of course my favorite expression is, "If we only had the fertility in the dairy barn that we have at the house we would be a lot better off!" We have families of five