

One of the areas, the glamour area right now is biotechnology, particularly with regard to growth hormone of both growing animals and dairy animals. At the recent Cornell Nutrition Conference, a researcher cited three studies whereby dairy heifers showed an increased rate of gain, wether lambs showed increased rate of gain and increased protein deposition. In another study he cited there was a decrease in fat. Right now Monsanto is very active in this area, and they are trying to fine tune the biotechnology, the fermentation processes whereby this can be an economically viable product as with any type of hormone you have administration problems and possibly down the road we'll be looking at implants for growth hormone.

Also there has been quite a bit of study as to how we can administer compounds to affect growth hormone secretion and research to date indicates that what's good for the chicken may now be good for the sheep, which may not be good for the cattle. I would anticipate we will be seeing some biotechnological products coming out in the next few years. I think we're several years down the road from growth hormone. Probably the biggest factor we're going to have to deal with is how does FDA clear this product and right now

they're having jurisdictional problems with FDA and USDA. We don't even know the criteria by which they will be judged.

Finally in conclusion, one thing that is very active in the press right now is what is going to happen with therapeutic levels of the tetracyclines and penicillin. I'm going to editorialize here. I think we don't have to worry too much with the FDA at this juncture. We've got to worry more about the legislature. I think we will see action sooner from Congress than we will from FDA. The people I've talked to at FDA say it will probably be the first of the year before they announce hearings and it will be a long, protracted process. However there were several bills introduced at the end of the last session of congress and what happens in the near future is really conjecture.

Question: Is the bypassed protein concept economical for feeding dairy cattle?

Answer: I think it depends on your area. The feed manufacturers that are promoting it have access to grain processing facilities and can economically get the bypassed protein. Agway and Kent Feeds are two that I think are doing good jobs providing economical bypass proteins.

Some Observations on Field Use of BVD Vaccines

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I am not here to pass a judgment. I'm here to relate to you some numbers. And remember, numbers or figures never lie! Liars figure!

We do have what we consider a relatively successful pre-conditioning program. It's about five years. It has been steadily growing. And among the requirements, 30 days before being sold are weaning, dehorning, castrating. And at least three weeks prior to being sold we require ectoparasite control. And among the vaccinations which are mandated in our program we have BVD, we have IBR, PI₃ and clostridia, at least your 5-6 way is also mandated. We used to have the pasteurized bacterin as mandatory. I guess we're close enough to Canada to listen to what they are telling us. But anyway, the practitioners there decided that it's not mandatory now. They set the requirements.

What I have done with our practitioners, we have attempted to keep accurate records on the program, see if it is working, see what it is doing, see if we can make sense out of the exercise. So the data I'm giving you evolved from that. Now, BVD vaccination has been mandatory since 1980. That was the year they made it optional in Iowa. So we figured if it

was optional there we figured that was good enough for us to make it mandatory!

Now, specifically the program on our certificate says you can either use a modified live vaccine in which case one inoculation is required, or you can use a killed one. We happen to read labels, . . . that would require two inoculations. I went through all our records and these are the vaccinations practitioners have used over these last forty years.

I went through the records and found out when these BVD vaccinations had been administered. I don't have the total percentage. However, on practically many occasions administration took place 2-3 weeks prior to weaning. There were those instances whereby BVD vaccination and other procedures were administered at weaning. There are cases where it took place later.

North Dakota has very good cattle. We have good programs. I can tell you, when you deal with cattle, with cattle producers, it is a lot easier to face life and imply that they will come to us and tell us when there was an adverse reaction. They don't call us in the middle of the night and say,

Doc, my calves are all doing great. Thank you. They call you only when hell breaks loose and they think something is going wrong. I think we have to be objective, at least with ourselves, when we find reasons at times to find adverse reactions in some of our techniques or practices or recommendations. Don't throw the baby out with the water. Think that for each adverse reaction that you see there are at least a thousand calves that are going tremendously, that you did help, that you never heard from. It's important I think to put this in perspective. If there is a message to my presentation this evening, it is not to indict the vaccine or a procedure, but it is to show you that we have to put numbers in perspective, and I hope that is what I am attempting to do here.

All too often one adverse reaction puts us in that kind of predicament and we are never told about the positive. When I talk about adverse reaction, folks, you can tell me what you want, but you have to categorize them. There are those which are documented. There are those that are solvable. There are those that could have been possible. Then there is limitless imagination. At this point I am only addressing the concept where in those situations there was circumstantial, reliable documentation of adversity, as a result of using BVD vaccines. I think this requires an explanation, that is factual documentation.

By the way, folks, I would like to point out that some of the flaws that we observe, that practitioners observe occurred not only on calves vaccinated the day of weaning, but also when vaccination was administered up to three weeks prior to weaning. So I took ten of each. Some of these had erosions and ulcers. This is BVD. You don't have to be a certified pathologist to observe these kind of lesions. I tell you what is interesting. All too often we do associate BVD as an enteric disease more so than anything else, if that messes up the mucociliary of the upper part of the respiratory tract, sometimes you will see that the plaques associated solely with BVD, something we observed, in Brookings. I was fortunate to spend about 6 years there.

BVD, in our opinion, was not the specific killer of these calves. It does happen that sooner or later *Pasteurella pneumonitis* mixed with *Hemophilus*, or whatever, might reveal fibrinoid pleuritis with pneumonia as in *P. hemolytica*. Those were consistent components of those calves that reached the lab, at least. Clinical signs? In the acute stage practitioners are telling me they are observing sickness 5-10 days after inoculation, nothing new there—a sick calf. What about the chronic aspect of this disease? Some of these so-called chronic BVDs are just chronic pneumonias that did have BVD at one point, I think. But we couldn't find the virus about 2 or 3 months after the initial episode. We did find the virus in the acute stage. I think it is one of the most mysterious diseases from the clinical, diagnostic and from the handling of preventive measures point of view. I think we have a lot to

learn here, at least I do.

For three years we were able to follow the BVD situation with practitioners. That's pretty important to me. Out of 250,000 preconditioned calves that were vaccinated against BVD, the vast majority of which was the modified live vaccine, the morbidity was 242 head. One in every thousand. Less than 1%. Mortality, less than 1% per thousand. I can sound real smart here and tell you that BVD vaccine is no good and I forgot that you subtract 242 from 251,000, that difference is the calves that did not get sick, according to the veterinarians, from BVD, and greater than the amount that didn't die from it. But I think we have to be realistic. You put this in a percentage, you should say 1 in a thousand became sick with BVD and like signs and about 15 in 10,000 died. At least the diagnostic laboratory and the clinician thought from BVD. I told you at the beginning, figures never lie. Liars figure! You can make out of those numbers whatever will fit your own truth. But these are the facts.

In conclusion, I will try to find something to make sense out of all I am saying here. I couldn't find a better one than as practicing veterinarians, the impossible we always do at once. But miracles will take a bit longer. Why I am saying this is because many times I think we have a tendency, not you folks, but some of us, to blame our products for the mismanagement of livestock. I was fortunate to work for a seasoned practitioner in Colorado. After about a day or two in practice I wasn't feeling too peppy because it was basically a large feedlot practice out of 30. They were dying on me. I thought I got all this good education and I got this truck full of pills and I didn't have 2cc syringes, I had the big ones, maybe that was the trouble! But everything aside, folks, they were dying and that was very disheartening. So Doc saw me one night and said, "Say, what's the matter?" And I explained to him, "I'm not good for these people. They are dying." He laughed with me and I said, "Listen, it's not funny." He kept laughing and said, "Kurt, don't worry, regardless how hard you try you're never going to kill them all. Don't feel bad about it." But he added, he said, "Kurt, as you grow in this business you'll find out that the biggest killer of livestock is not viruses or bacteria, or chlamydias, or malnutrition. It's what Doc Frank called PPM." I said, "PPM, part per million." He said, "No, that stands for pretty poor management!" But you see, we think it's funny, but it's not, because sometimes some of these adversities we see with BVD vaccine or any other is not because of our knowledge and techniques or product as much as it is that we still don't have a management inoculation and I think we should gear our effort to be part of a successful management, more so than any product. I am more scared of BVD outbreaks than I am of BVD vaccine. I think we have seen that enough in our state.