

form that is soluble in water so we can use it parenterally. It is a respiratory center stimulant. I would have to say that its efficacy is less than either Dopram or peniline tetrazole.

Lastly, camphor, I mention this out of nostalgia. I used to use an awful lot of camphorated oil with glycol in it in treating my respiratory condition patients. You hear this argued a great deal today. Is that efficacious or is it not? I think about the only comment I would have here is that at least my patient smelled like I had been treating him! Lastly, a very interesting condition that I thought I would pass on to you if you subscribe to *Animal Nutrition and Health* you have seen this, but I think it is very intriguing. Workers at Washington State, I believe, are working with the condition they call acute bovine pulmonary edema or commonly called "the fog fever". This occurs in animals that have access to an overload and then an environmental change and all sorts of things. This ends up as an emphysematous condition and can be life threatening. They are working with the etiology of this and their proposed mechanism is that amino acid triptophan with certain ruminal microorganisms is converted first to indole-acetic acid and then with certain other microorganisms is further converted to 3-methylindole and it is the 3-methylindole that is the offending agent in producing fog fever. Interestingly

enough, if they challenge cattle with triptophan intravenously, indole-acetic acid parenterally, there is no fog fever but if they challenge these animals with 3-methylindole they will all show both clinical and pathological signs of fog fever. They can feed high levels of triptophan *in vivo* and consistently reproduce this clinical entity. Now the interesting part about this is if you feed these animals Rumensin you will prevent this condition. Rumensin widely categorized, can be called an antibiotic and it does influence certain of the microflora in the rumen and you are familiar with that as it's feed additive ability to increase feed efficiency.

I would like to summarize then and conclude my presentation by going back to my initial premise and challenge you in your everyday work to enhance your knowledge, which you are doing by attending a meeting such as this. Be more aware that you do have excellent powers of observation and use them. Use common sense and when this applies to drugs you ask yourself what drugs, how I am going to give them, when, and then you weigh the benefit to the animal versus the risk to the animal and possibly following this kind of a regimen and outlining your objectives it may be of some help to you in your practice.

Discussion

Dr. Bechtol: One of the biggest problems I have is controlling respiratory disease and in trying to set up a program, so I will go through some quick management type things and program and open up for questions when the rest of the panel gets through. When we receive a lot of cattle we like to expose them to hay directly off the truck, fill them up on hay, then go on to a ration of choice; we prefer feed bunk, or bunk apron, or use racks but they expose lots of hay for long periods of time, we just want to expose them to hay for 2-3 days or maybe just one depending on the size of the herd and type of problem, because some cattle just eat hay, do not eat the ration, and they don't go to the bunk when they need to. Expose to fresh ration at all times. We don't like them to feed too much, 2 times a day or maybe 3 in the summer (early morning, late afternoon, and do a spot check). Bunk space — 15-18 inches at the start, 8-12 inches on finishing (Texas Panhandle usually crowds cattle, only using 8-9 inches), so 15-18 inches is better for these light cattle. They should be eating 3% of their body weight first 5-8 days, have 10 day as far as changing rations, and have them on feed by 20th day.

We can change this a little. This is a program where we usually start on 50-60% concentrate; now we have a 65% concentrate ration — 10-12% crude protein, now up to 15% crude protein. Use hay for management, not nutrition;

expose to bunk, get started on ration. I don't like to use silage in starting ration, but in the Texas Panhandle they have to use silage (at a minimum, trying not to get over 10-12-15% silage as a starting ration). This goes along with constant feeding technique, I don't like to use urea in starting rations, and I don't like to use rumensin in starting rations, but some nutritionists in the area like to expose their cattle to some in the ration, and some are getting acclimated to the situation, but I don't like to use rumensin at all. We try not to use too many antibiotics, but for problem cattle we use antibiotic program (AS 700), approved neomycin product of a 300-350 level, most of us use 700 level for the first 5-10 days, tapering off to 350 for 7-10 more days, then off. I do not like 28 day programs, as feed yards can only handle so much ration, by 28 days on feed, if not adjusted to consumption level, day 31 you get a break problem. So for 7-10 days use a high level, then 7-10 days an intermediate level, and then take cattle totally off it.

There is good data supporting a higher level than the 700 level (oxytetracycline and chlortetracycline). Used as high as 2 grams for the first 3-5 days, then 1 gram for the next 5 days, then 500 mg., then off. Do not come off too abruptly.

Another product that's been pushed aside somewhat is Neoterra Feed Grade — 250-500 mg. Neomycin, 500-750

mg. terramycin, but now using more of it. Don't stay on it too long, take off it slowly, or it causes some breaks.

For a processing program, a straight IBR situation "yearling program" (500-600 wt. plus animal). Clostridia are being swapped around. We use a 3-way instead of a 4-way. Clostridia are not much of a problem in feedyard situations, so now we use blackleg program. I seldom like to use a 7-way program except for pastured cattle. Clostridia C&D is not that good a product. Clostridia are best controlled by management, and use of a 3 or 4-way product.

I give vitamin A as they come in, primarily 1,500,000 units at least.

Worm all cattle as they come in. I do not pick out cattle to see if they need to be wormed or not, so it's an "all or none" type of program. We do implants as they come in.

Also beneficial is a stocker calf program. I use P13-Pasteurella, not combined with IBR, but you can use IBR-P13, then use Pasteurella bacterin alone instead of combined. Some products work better with Pasteurella than others, so I try to work out and use these combinations on these lighter cattle, 3 or 4-way. I also give vitamin A-B12 instead of A-D-E; then I worm and implant. I try to give cattle all of it at once, but may eventually split it up (as new antigens are produced and studied). On the first visit give IBR-P13 on arrival then on 2nd visit give Pasteurella, then finish process. Many times we lose identity of these animals; with so many cattle, 1000 head per day need to be identified or they get lost somehow and the feedlot has to make it up to the owner.

On the antibiotic program on arrival, we have certain origins with certain problems, so use certain antibiotics. Use a lot of oxytetracycline (100 mgs.), and use oxytetracycline and neomycin-B12, but pulling away from the neomycin because of a residue problem with the swab techniques. Lots of others are used: LS-50, spectinomycin, not officially approved, and a lot of residue may cause problems and then the FDA comes in, so only use approved. Neomycin is our no. 2 residue problem next to penicillin. B12 is used a lot with oxytetracycline within the first 48 hours. It is used for 3 days at the most, only 1 generally, 2 or 3 if there is a certain problem, but if it isn't working by the 3rd day, then we need to stop it as it should have done some good by now. I am not now using leptos, since it is not really needed in feed yard, but after seeing some performance data (2-10 dollars cost to gain), I am going to add it now. Many meat inspectors are seeing more leptos lesions now than in the past.

BVD is used some with certain kinds of cattle; there is some increased morbidity and some decreased mortality on BVD cattle, but the results are mostly changed, nothing significant statistically.

Hemophilus somnus vaccine is used some, and I like it really well (it can be used with Pasteurella), but we're still evaluating it, as it's too new to know all about it (maybe in 1 or 2 years we will).

Autogenous bacterins are not used because of bad results

every time they were used and ended up with interstitial pneumonia produced by the bacterin.

Implant programs — I use all, primarily Ralgro in light calves, Cenovax S in big steers Cenovax H in heifers, and DES was not authorized for use after November 1, and we're waiting for the approval of some new products. The main thing is a re-implant program (something not done in the past), with a 65-day interval of effectiveness.

Wormers — all being used, particularly TBZ paste, Levamisole drench, and Levamisole injectable, (plus all others; benzadole, etc. Wormers are more of a management tool instead of an effective product. De-cox is a coccidiosis control product in feed, not used routinely, but being considered for certain cattle in certain seasons of the year. We dip everything on arrival for external parasite.

Moderator: The next speaker is Dr. Van E. Brimhall, Olton, Texas.

Dr. Brimhall: I have been involved 15-18 years in feedyard management and ownership, so as a consultant, I enjoy it. Over 25% of work is spent in "acute mismanagement syndromes", which exist in some feedyards worse than others.

I spend much time receiving and processing new cattle. The people problem is getting critical (not enough people, and not good enough caliber of people to do a good job). Not very young people getting into the feedyard business.

Hospital management and treatment (one big management problem): We're in the manufacturing business 25,000 head feedyard producing over 1 ton of beef per hour, 24 hours a day. Normally, companies schedule input of raw material to a level they can take care of properly. We cannot do that, because we have as many as 23,000 head received in 10 days' time — overloaded.

Receiving and processing depends on the origin and class of cattle. We have extremes from 120-lb. cattle to 1100 lb. (which cannot get through chute or in pen, so fed with no processing). So keep in pen, feed for so many days; and if they need treatment, let them get sick enough to treat without them jumping over fences, knocking horses down to get out.

Class of cattle effects a lot of what is done.

We have feedyards of 45,000-head size that handle strictly mercantile-type yearling cattle, but may only have 15-20 head in hospital; yards that handle "gator-crosses," we get more of them out of any one pen on a daily pull basis.

We like to receive them on hay (good, fine stemmed), do not care about feed so much the first few days (they do not eat enough). I do not like to withhold water on arrival even though I know this is the trend now.

We like to dip on arrival (especially with a severe scabbing problem); but may be delayed due to weather. As far as dip-vat management, we like using a hydrocell with the dipping vat to filter dip material (get twice as many cattle without cleaning or recharging; and cattle dry better and quicker and have better insulation characteristics).

As far as processing, we use intranasal IBR on light calves (not on yearlings), use leptos in some yards (but some have no problem with leptos); no vaccination for BVD currently, but may go back to it (it was used before with some problems, but these problems may not be due to the vaccine itself), although some owners do not want us to use BVD, and while there are no real BVD problems, there are more this year than in previous years (mainly from Tennessee and the near area). We use some Pasteurella; more commercial than autogenous on bigger yearling cattle; autogenous used in specific applications with organisms isolated at that place, with 14-18 day boosting with autogenous, and observation is important (and some benefit has been seen by the clients). We do not use *H. Somnus*, but doing work with it to see how it does in operation. I use some 7-way Clostridial vaccine, use more of the 4-way, we like C & D, but need boosters. We do use vitamins A and B on light cattle. Deworming is done with the injectable form on larger cattle; TBZ paste is good on light, weak, or stressed cattle; a lower dosed injectable is also used (lower than recommended). I do not use P13. Implanting is done with Ralgro or cenovex.

The treatment depends on the cattle; some antibiotics may be given on receiving, depends on the condition, maybe using a 3-day mass medication program. Only done in problem cattle, and it must be done *as soon as possible*. A standard 3 or 4 day treatment (usually 3) program is used with *approved* antibiotic drugs. I like sulfas as alternate or backup treatment (I.V. usage for the first 3-day program, but may be hard to do). I prefer to give antibiotics I.M., but I.V. if really sick. Hospital management is also very critical (seen up to 50% of cattle lost in convalescence due to this).

I do not routinely use feed medication, but may use it in problem pen of cattle in high levels for 3-5 days. Have had good experience with water medication, but is nearly impossible to do in a large feedyard when it is very busy.

As far as the drug residue problem; I prefer to have a system where an animal going through a chute for the last time, we put on a red tag in his ear and put 30 days on it and only *one* person is authorized to pull him and ship him. Then we try to avoid problems with residues.

If not responding to treatment, and we have "a respiratory cripple", we use "tincture of time" and green grass.

No matter who outlines the program, it is only as good as those who implement it.

Dr. Richard Beck, El Centro, California

The total environmental situation in Southern California desert is different from Texas and the high plains, and is probably the most ideal in the U.S. (summer is hot, but winter is warm for a most *consistent* climate). There is no real temperature variation or pressure variation, reflected in more consistent consumption patterns of cattle; affects health and respiratory disease. Being 150 feet below sea level gives a higher oxygen pressure (the extent of this is unknown, but gives cattle a better chance). At our 7 yards in the past 12 months we have seen 30,000-40,000 calves under 200 lbs. (why they are sold this light is unknown, but we get

them, so we treat and process them). So we have light, feeder calves.

Intensive management cooperation; post mortem as many as possible (80-85%, others sometimes rot). Programs may be different, but whatever the program, it needs to be *done properly*.

Toward feedlot health, we are 75% management oriented, 25% medicine oriented.

On treating masses, we try to do it on arrival, but we get a lot sometimes and it gets crowded and causes problems. At all yards, *all* cattle go to the chute before going to the pen (no matter how busy where they all get IBR, and some get leptos). We try to process immediately, they may or may not get antibiotics, vitamins, but do get vaccinated and identified before going to the pen). Vaccination is the most important. They are processed right off the truck; but generally we do not if stressed, weak small, etc. I prefer to wait on the blood letting exercises (castrations etc.) but they bleed more if you wait.

Treatment is done on a scale of risk (certain origin, certain buyers, etc., determine this). Some get antibiotics if needed, based on predictability of illness to stay ahead of the illness especially in high risk cattle. And we have had excellent results by staying ahead.

As for nutrition, we give hay on arrival (and for longer than most feedyards, putting the hay anywhere they will eat it). For baby calves give milk replacer pellets (25% protein, 10% fat, low carbohydrate, oats high in fiber which prevents some diarrhea, mixed with oats). The ration is put anywhere they can find it, even in with the hay.

Individual treatment is done 3 times (using a marking system), and if an animal has 3 marks and is showing no results, change treatment. These are given free choice hay, milk replacer and oats mixed; nutrition being as important to take care of as the infection. Mainly, keep track of what they get and what is working.

We do not use BVD, P13, Pasteurella bacterin. We use 2-way Clostridium vaccine, levisole drench or injectable (mainly for lungworms), and very little TBZ.

Dr. Darrell Haney, Gruver, Texas

I am new in the feed industry. I graduated from Colorado State University in 1977, spent 1 year in large animal practice in N.E. Nebraska, with Caprock Industries for past 1½ years in the Texas panhandle with 3 feedlots, plus one in west-central Kansas with 185,000 head capacity.

Processing procedures basically are the same as the others. Hay and water are given on arrival (oat or grass hay, depending on feedlot) for 12 hours, then a 35% concentrate starter ration. Average weight is about 700 lbs. (with a range of 400 to 1000 lbs.), most problems seen with the 1000 lb. Holsteins.

Processing is done within 48 hours.

Implant is done with Ralgro for cattle under 600 lbs., Cenovex H for over 600 lbs. They are then given 2cc. of vitamin A-B12, pen branded, tails bobbed, and horns tipped

¼ inch.

We give IBR, leptospirosis (BVD in the Kansas feedlot only), and 4-way blackleg to all cattle.

For worming we use mainly tremazole injectable wormer (1½ cc. per 100 lbs. up to a maximum of 12 cc.). Some TBZ paste is used on smaller lightweight Holsteins that are severely stressed upon arrival.

Mass treatment is done by individual pen (according to history, expense). 3-day program, some lightweight Holstein cattle right after arrival. The processing is split over these 3 days (so they do not have to go back a 4th time).

We receive many stressed cattle, for them we medicate in the feed (1 gm. per head per day for 4 days, then ½ gm. for next 3 days). This is the basic treatment, and may differ.

In hospital areas, we try to give plenty of space (especially in winter), giving 400 square feet, with 10 inches of bunk space. 70% concentrate ration is given in hospital pens with alfalfa hay free choice because here is an additional protein requirement on stressed cattle.

Treatment program is a basic 3 day; initially with tetracyclines (high dosage of 10 cc. per 100 lbs. of the 100 mg. product) in combination with erythromycin (5 cc. per 100 lbs.), plus long-acting sulfa boluses on day one. Also, use 20 cc. high potency B-complex on day 1; 10 cc. on days 2 and 3. If they are not responding after 3 days, an alternate program used is penicillin and tylan; giving 20,000 units per lb. of procaine penicillin G with 5 cc. per 100 lbs. tylan. A 3rd program alternative is oral spectinomycin product given I.V. at 10 cc. per 100 lbs. We give as much I.V. as oral fluids as time permits, but they still do not get enough (too many cattle). We are unsure about BVD used in Kansas on heavier cattle, trying to work it into program in Texas. Not much Hemophilus vaccination done, but are watching for it closely in lightweight cattle.

Question: does tapering off antibiotics in feed build a more resistant population of bacteria by reducing dosage at the tail end of an antibiotic feeding period?

Dr. Horton: Needs more work done. IL is not so much what we treat with but when (needs to be right away). I do not believe drug resistance has influence upon the response to treatment, but needs to be studied more. Probably better to taper off than to take (no real drug resistance).

Dr. Bechtol: I have seen some drug resistance, some with *E. coli*, but once the antibiotic is taken away, the resistance goes away. High levels of medication masks the symptoms.

Dr. Upson: I agree. Set up a plan ahead, then follow it.

Question: Why just 1 gram instead of 3-5 mg. Lb. body weight of antibiotic in feed?

Dr. Horton: I do this, 3-5 mg level and then taper off, using straight tetracyclines. AS 700 program we go the maximum approved anyway. Some facilities cannot handle any more. Done with oxytetracyclines and chlortetracyclines high level.

Question: If we put 1 gram in the feed or one gram in the muscle, what is the difference?

Dr. Upson: Depends on the status of the animal, but it

needs to be done early and vigorously. Parenteral gives higher levels in blood than oral, plus depends if the cattle are actually eating and drinking.

Panelist: Hard to find people who can recognize a sick animal.

Question: Why give I.M. and not in feed?

Dr. Horton: If the animal is healthy off the truck, and the feed not medicated 5% incidence, then maybe mass medicate in the feed or water, but if off feed, give I.M. If not success in 3-4 days, give I.M. Don't tell them you are medicating the feed or they will not watch them.

Question: If breaking with rednose, not vaccinated, do you give it I.M. or intranasal?

Dr. Horton: Not known, intranasal seems to be superior.

Dr. Bechtol: I.M. work better in one trial and seems to be superior in the face of a break.

Other panelist: I.M. vaccine seems to be better in face of an outbreak.

Question: Is there a difference in their longevity of protection.

Answer: Use intranasal for under 170 lbs., but come back in 60 days and go I.M.

Other panelist: In yearlings with intranasal we saw 65-70 day breaks. Problem of this was caused not by the vaccine, but by the management of the processing crew, so went to I.M. to get around this.

Dr. Horton: In measuring duration; IBR-measured circulating titer, only 1/3 showed circulating titer for IBR. Cell-mediated titer also needs to be checked. Post-vaccination titer showed anamnetic response 1/3 in 21 days a dramatic titer, 1/3 went from a no titer to a moderate titer, 1/3 stayed at no titer at all. Breaks are mainly in ranch cattle that are not exposed as much.

Question: Have you done this with BVD?

Answer: Not yet.

Question: Has anyone given those two injections to unexposed ranch isolated cattle?

Answer: Yes, one when they come in and then give them a booster later and I see less breaks. Clinical judgment type opinion; have not done any control studies.

Panelist: We see the break, I've never tried a second vaccination. We see the break after intramuscular vaccination.

Dr. Beck: I've never done that, we get a lot of these little light dairy calves out in California that I understand have had at least 2 immunizations of IBR before we get them so they are done similar to that I'm sure.

Dr. Bechtol: I guess that I am going to show that I'm not sure what we are doing on some of these ranch cattle because two years ago we vaccinated the cattle on arrival and we ended up with a 32% death loss in some good 650 weight yearling cattle. So the next year we set him up a program where we vaccinated them once at the ranch 21 days prior to shipment. We gave them another vaccination on shipment. So far we have only an 18% in them. So we really haven't done too much as far as helping, we've done an awful lot of

blood serology work. Sure, we've seen some titers and we are seeing BVD titers no matter what we do, but on another ranch on a similar type situation we've set up a preconditioning program and the cattle coming into the yard, broke, we gave them another IBR, and they still kept right on going. We had some other cattle from the same ranch that we went ahead and tried to immunize them again on arrival and 21 days later, and so far we've seen no difference we're still having problems with them on that deal because in a ranch cattle same type of deal we have waited for them rather than bringing them in August, September, October, when they bring them in February, March and April we have no problem with the cattle no matter how we handle them. If they bring them in September, October we have that problem with them so we've been working with these two ranches for about 5 years and we've got this one deal from 32% death loss to 18%.

Question: Have you evaluated any of these vaccines?

Answer: The evaluation that we did on the vaccines was we vaccinated between 3-500 calves each with intramuscular IBR, lept vaccine that we had access to on the commercial market. We did not do any titers and I'm sure that all vaccines were probably equally efficacious protecting from IBR. The parameter that we were trying to evaluate was post-vaccination reaction to each particular virus-vaccine and we saw a whole range of differences. We did not evaluate the reaction with the thermometer. We evaluated the reaction on two parameters, one was a number of pull from a group of cattle, the other was a number of deads from the group of cattle. And so based on a highly subjective evaluation of the reaction in the cattle, I say that there are several vaccines that are very mild and a couple of vaccines that I would say that are not very mild. And the vaccine that we use now is Abbotts, I think it is mild and effective and there are several other ones that are also mild and I think that they are probably all effective.

Dr. Bechtol: The ones that we had the 32% death loss we haven't tried pasteurilla yet, that's going to be our next step.

Question: The question was concerning B12 and the use of it and why some of the speakers recommended its use and the comment was made that this person had not seen any results from the use of it in the ruminant. Who'd like to answer that?

Dr. Bechtol: When we first started using B12 we were getting the same comments why use B12, it's not effective, it's not going to do you that much good. So we started taking it out of our product or our little programs and we were not seeing the same results so I have no other reason other than I think that I get results and looking at enough data on those that we used it on and on those that we haven't, we feel that we have less morbidity and mortality on them. I don't use too much B12 in my treatment programs, I use a B complex product and then sometimes on the third day cattle I use a product that has B12 in it and we use it on the third day before they go home. I just feel through the data that we've looked at that B12 is beneficial. I have nothing else to

back it up but just data.

Panelist: I use B complex instead of B12, I figure we're short of one we're short of more and I guess it could be called shot gunning.

Panelist: I think there's probably a lot of academic paper work that will support the use of B complex and that doesn't necessarily say that it is going to work but we use what they call a super B complex. It has a choline in it to try and mobilize fat out of the liver which I see as one problem at postmortem especially in fleshy calves which tend to give you a lot of trouble. When you post them they will have a big, yellow, greasy liver and my hypothesis of the situation is they have mobilized this fat and it is plugging up that liver and if you can give them anything to help turn the nutrition around to stop that situation and then try and get the fat out of the liver, you're going to have a liver more capable of handling the rest of the mop up situation of that calf so choline and anisitol do mobilize fat out of liver tissue. If you have a dehydrated animal theoretically you are going to have a depleted supply of B Vitamins. You have an animal that theoretically produces B vitamins in the rumen and in a calf that has been on a truck 3-5 many days plus many days in the sale barn or wherever he came from, it is in a marginal starvation type syndrome with varying degrees of dysfunction of the rumen. Therefore you have varying degrees of lack of ability to produce B vitamins in the rumen so for those academic reasons I think you can justify trying it and from the fact that we seem to get response, we use it.

Panelist: We are using B complex in our treatment programs and we feel that we are getting fairly successful response. We also use B12 in our receiving programs when we are doing any mass treatments. We do not mix B12 with our antibiotics. I feel that you get a fairly rapid breakdown of B12 especially when it's mixed with tetracyclines and possibly all you are getting there is the red color and a so called "bloody mary mix," so we do not mix those products.

Moderator: I might add one comment that in San Francisco at the bovine practitioners meeting there was a paper presented there about the effect of B12 and its effect on faster and higher immunity and I can't tell you the results of that except that I went away from there with the impression that was a good thing and that it did help immunity.

Question: Would someone comment on their experiences with long acting sulfas as a bolus and also sulfas in the water in the early stages of the pneumonia complex?

Panelist: When I was actively involved in feedlot management I employed the use of a lot of sulfas in drinking water. I really thought it helped me. I had two advantages, one being the veterinarian and also signing the paycheck so I could get the tubs put in the pens and see that it was done. I've never really had a palatability problem with the drinking water, I felt a large commercial feed yard water medication is a pretty tough deal. As for long acting sulfas boluses if I've got a calf sick enough to take out of his pen and bring to a hospital I want him in the chute everyday for 3 days and I'm going to personally give him what he needs. I have turned

out several thousands cattle on grass. I do see a place for the long acting boluses there when you want to minimize the roping and doctoring.

Panelist: We are not using sulfas in the water. We do use the long acting sulfa boluses quite extensively but in combination with our other injectables. We give our long acting sulfa boluses on day 1.

Panelist: I just say Amen to what Dr. Van Brimall said particularly for the small farmer feeder. I think if you can get a 300 gallon water tank out there, shut off the other water supply and go with sulfa medication it is an excellent program in the water.

Panelist: If you are referring to some long acting sulfa boluses on arrival we've tried that and we saw no benefit. We saw quite a few damaged throats and this type of thing with the processing crew trying to run 3-500 head of cattle through there giving them sulfas boluses but those that we did it on we saw no benefit, in fact we might have delayed the pulling just about 6 days and still had a high percent of pulls and high percent of death loss. We see no results and we've done almost 2000 head of cattle that way on a good trial. We don't use long acting sulfa boluses at processing but we do use them in the hospital.

Question: What do you think is the best first day drug and second day drug and third day drug for treatment of the respiratory disease complex?

Dr. Bechtol: As far as my antibiotic of choice I do use oxytetracycline. I sure feel it gives me a much better response overall initially. As far as once I start with an antibiotic I want to go with it a minimum of two days and 3 days and if on the third day I'm not getting response I'll change to another antibiotic or add to the oxytetracycline. On light calves I usually add Tylan 200. I very seldom use tylosin by itself. I use it at a 5 mg per pound of body weight and then another antibiotic that I use that I see on my culture sensitivity work is erythromycin, so we do use quite a bit of erythromycin. There again I think you need to use at least a 5 mg per pound, body weight. We do use some penicillin and sulfas.

Panelist: I'm basically the same way. I start with the terramycin. I like tylan and about the only place I use it is in lighter calves. At one large feed yard we use sulfas as their first 3 day treating program but it's unique in that they have the people and time to IV the cattle that they treat. I will go with the pen-strep, or this type of preparation in some of the nonresponding cattle hopefully to clean up some of the secondary lung problems that I have.

Panelist: In our situation it depends on what's working at the individual yard and what our sensitivity shows. It varies. We don't have one standard drug that we use for a second and third primarily our sulfas are second or third even though they do generally work real well with the same reasoning due to time consumption during administration.

Panelist: I briefly covered our program and this may change from time to time depending on sensitivities which we run quite often but again to just repeat, we are using

oxytetracycline, erythromycin, and long acting sulfas on the first time, followed by penicillin and tylan second treatment and spectinomycin the third time.

Panelist: The biggest question I have in my mind is, what is the correlation between in *vitrio* culture sensitivity and clinical response? I do not know, I think that I've been back through the literature and can't find good documentation in human literature or veterinary medicine literature and would be interested in Dr. Upsoms comments on that.

Dr. Upsom: I can simply comment that I totally share your concern I think it is a basic question. My personal response in a specific way would be that I think that clinical observations of responses are probably more accurate in most cases than the in *vitrio* work but I think that we have to add that there are those times when in *vitrio* work is a helpful tool but I don't think we can rely on it all that heavily. So I think what you are saying is absolutely correct. I'm interested in the comments that these gentlemen have been making because we all know that our residue problems and the FDA and their projected controls is a real problem in our profession. I was interested to note that neomycin is mentioned, however, none of you feel you are using it that widely. It appears to me in the overall surveys and what not, if we totally eliminated systemic neomycin from these programs that our residue problems are going to drastically disappear and if you don't use any streptomycin which will hang up in the bovine kidney for 30 days, if you don't use neomycin which will hang up there for 90 days I think we are going to eliminate a lot of our residue problems and allow us a little more freedom to use these other agents as our professional judgments tell us we should. So I think it's very interesting that the comments followed these lines in the field.

Panelist: I would like to make two comments, one about culture and sensitivity. When you streak a blood agar plate or whatever you are doing and incubate it, the only thing that you are doing is growing your anaerobic bacteria. You are not looking at your viruses, mycoplasma, anaerobes, and all the rest that are there, but when you put the sensitivity discs on there or do your MIC's to me it's more valuable what's not going to work than what is going to work and when you put something on there that grows right across the top of it then I don't use that. But just because I do get a sensitivity pattern around a disc or get a concentration that is supposed to be effective, it doesn't necessary mean that it works but I think that I get more value out of this culture and sensitivity by elimination than by indication.

Question: The first question was which works best in the water, the sulfa or the tetracycline or which is preferred at least and the second one is what you feel is a bearable death loss in the feed lots.

Panelist: As far as an antibiotic in the water, I very seldom use anything other than maybe sulfathiazole. I do use some sulfamethazine. As far as a death loss our goals always is to shoot at about a 2%, most of them average around a .5-.6. At the present time we are seeing probably more around .8-9

than we would like. We are getting closer to that 1% but we like to see our goals anywhere from a .2 to .6.

Panelist: I don't use any of the antibiotics in the water. I stay with the sulfas. The percent death loss for feedyard is in many ways affected by the weather, the class of cattle. If you're handling many calves you can stay in that 1-2% range, I think you're in pretty good shape. With the big healthy mercantile, yearling type steers you know you can sure be able to stay under that half percent.

Panelist: We don't use any water medication at all and our death loss on our total situation like everybody says and everybody knows depends on so many things, but in general last year based on about 125,000, mostly calves, was about 1.8.

Panelist: We don't use any water medication. We have quite a range and variety of quality of cattle we receive but we are shooting at around a half percent death loss.

Panelist: It's the day they die that's important! I'm not as successful as all my predecessors here or I would say the average and up in the upper end of the belt here which I realize we're a little further north with more severe weather, is under a 1%, and when I say death loss I'm talking total to the packing house so that would include cattle that are condemned if it's due to disease. To me that's death loss and so under 1%, .8-.9 on yearling cattle, would like to see around 2% on calves. If everybody will get all their figures out and really pay attention to them I'm afraid its closer to 3-4 to 5% particularly as you get further north and back into the midwest for the climate definitely hurts us. This isn't original for me. This comes from Dr. Flack at Monfords and I think it's appropriate and maybe it's something we ought to start using in our terminology and that's let's turn things around and get on the positive note not what is our death loss but what is our survival rate, maybe we should say

98.3% and 97.2%.

Question: What is the withdrawal time for spectinomycin? Does anyone here have any approximations. I don't think it's ever really been published as far as I know. I'm sure there's been some work done in that area. Does anyone know?

Panelist: There has not been a withdrawal time established. We're using 30 days.

Panelist: We use 90 days.

Moderator: And I think there are some who use a great deal shorter time than that and come along alright too.

Question: Is Vitamin E-Selenium expensive?

Panelist: It is inexpensive using .1 mg per head per day on selenium and using 20 IU per head per day of Vitamin E and I think they may have benefited at the time of vaccination on enhancement of titer but I don't know of any work.

Panelist: We use injectable Vitamin E in some of our yards. I can't say that we see a big difference but just based on the research that's been done, we've been trying it.

Question: Could anyone comment on the long acting tetracycline that may about to be on the market?

Dr. Upson: I do not have an active participation in the study with it at all. Most of the time I think there is a misunderstanding from a pharmacological standpoint that the drug has changed which is usually not the case. They've changed either some sort of binding arrangement on the molecule or the vehicle to delay its absorption. Once a tetracycline hits the plasma it will be handled the same as any other.

Panelist: I currently have a trial in progress right now with the product and have just been into it for two weeks and don't have any results yet. 100 calves are getting it and 100 cattle are not getting it.

The Hypodermic Needle that surpasses all others!!!!

The cislak *Smooth-point*[®] *husky*
hub[®] Needle



Compare the cislak *Smooth-point*[®] with the competitor's needle
(unretouched photograph)

**The stainless steel smooth-point needle with
the chrome-plated, brass hub features:**



Gentle, smooth point



**Husky Hub - easy to grasp -
will not slip**



**Fits Luer lock and
Luer slip adaptors**



Lower priced to save you money

Get your cislak *Smooth-point*[®] *husky*
hub[®] NEEDLE from your favorite
veterinary supplier. It is sold in popular gauges and lengths.

Names of Suppliers can be obtained from:

F.W. Cislak Manufacturing & Engineering Co., Inc.
5768 West 77th Street, Burbank, Illinois 60459

Telephone: 312-458-6163

® Trademark