

Panel Discussion

Tuesday, December 13
Feedlot Session Panel Discussion
Dr. Dallas Horton, Moderator

Q. Can the computer be used for feedlot rations or can it be used for other rations?

A. I did not read you the list of all the programs that are in this thing. You can program anything in there that you want to program in it. It is supposed to be easing up so that an average person can program it, but I have not figured that out yet. That is why I have been waiting for Iowa State to come out with different programs about once a month or they have been coming out with them more often, maybe revising them as they are trying to program it for the SR52 which is out and for the SR59 which has just come out. They are trying to get programs out for both of them. More are available just about every week.

Q. How much do those computers cost?

A. The SR59 at the present time is the only one available and costs around \$250. There are cheaper models, but the 59 has the most capability and will have the module in it that will do 900 steps, plus you will be able to run these tapes through and change different feed ingredients. On some of the cheaper ones you put the module in and that will be all and you cannot change anything. They think they will be coming down to the \$150 range, but at the present time they are around \$250 unless you can find a good discount house.

Q. Have you had your operation in your computer program which is real detailed and sophisticated and yet with the source document you indicated it does not take a lot of, hopefully, extra effort on the feedlot management side, the personnel, to get the data for you? Have you had it in operation long enough to start correlating things in the feedlot, be it the animal health or other parameters along with net profit on a pen of cattle and if so, could you rank these parameters for us in terms of what is the most frequent factor that influences the net profit or loss on a pen of cattle?

A. I really have not run enough data through to at least get anything that I would like to stick out my neck on ranking, but this is exactly what we anticipate being able to do in the future as we build our data base and as we get more cattle on it and get more experience that we can try to assign a profit value for different techniques and different programs that we do. That is the purpose of it.

Q. That is the objective once you get this data base that you mentioned?

A. We simply want to use it as a tool to improve our performance and to help the industry improve performance and that is the sole objective.

Q. Leo, would you comment on this same question, realizing the specific parameters that he has in (you don't have), but you have an in-house computer and you have lots of close-outs and lots of factors that influence them and rank them for us and discuss them a little.

A. The biggest thing that affects the profit potential of feeding cattle is the fat cattle market. An up fat cattle market covers a lot of mistakes. But really, I don't know if there is any one parameter that becomes more important than anything else. In a good record system you get all of the factors included that affect the net bottom line on the close-out and those are the things that you look at so that when the close-out is what it is supposed to be you have some record so you do not make the same mistake twice. But as far as what Max is talking about, all of these different parameters have an input but when it comes to the net profit the fat cattle market affects it more than anything.

Q. What about animal health versus purchase weight? Versus pay weight? What about animal health versus nutrition in a general sense? Discuss some of these with us as a manager and give us your viewpoint.

A. I think there is an interplay of everything. We take a little different approach than some people do. There are some feedlots and some cattle buyers that look for what they think is the best buy they can get and in their eyes the best buy is the cheapest cost per

hundredweight of feeder steer coming in, or heifer, as the case may be. We pride ourselves in the way we get along with the low death loss that we have, our low medicine bill but part of it is the cattle we buy. We buy cattle that are for the most part country cattle and we buy a sixweight steer and a number one Okie and that solves a lot of our problems right there. We pay a little more for this steer than some people are willing to pay but we feel it gives a greater return for us on that bottom line. Now, as you talk about the different parameters, when you have a sick animal or something to treat, you want to give him everything he needs to get him healthy and back in the pen producing, but you have to do it at the lowest cost. I do not have the records as to where to stop. Some of these decisions we are still making by the seat of the pants! We know by past experience an animal in a certain stage just is not going to respond to additional medicine so we cut it off. But as far as putting an exact figure on what you can afford to spend, I am not capable of telling you.

Q. What do you charge?

A. We are charging right now a cent and a half a head a month. The feedyard has 20 to 50 thousand head.

Q. You talked about \$11 per ton. Is that the mass-fed ration?

A. That is \$11 a ton as the ration goes into the bunk.

Q. What is the moisture content?

A. That ration today has 23.2% moisture. Anyone that understands the operation of a feedlot and understands the steam flaking process realizes that there is an additional source of income in that feedlot and that is the moisture that is going into that corn in the steam flaking process. We are taking that corn from 14% up to 17% in the steam flaking process so there is a 3% moisture pickup there in addition to the ration markup.

Q. You said you charged the ration ingredient cost—what is the ingredient cost?

A. Ingredient cost is what the rations cost us. For example, on our silage this year we contracted the silage last spring to get it from the growers we wanted it from. Our silage is going into our ration per day at \$21 a ton. We have a year's supply of chopped alfalfa bought and delivered daily as needed and that alfalfa is going into our ration at \$64 a ton. That is our cost. We absorb the shrink in the alfalfa. In figuring the cost of the silage we put in a 20% shrink factor into the silage from the time it goes into the pit and under a good managed pit silo. If that silage is harvested right, we buy everything on a 68% moisture equivalent base, adjust it to 68% moisture. If you do a good job of packing you can get by with about a 15 to 18% shrink. We build a 20% shrink factor into that silage when we price it. Today, my corn is going into the ration at \$2.33 a bushel. That is my average cost for the first half of December. Supplement goes in at our cost delivered to the yard. So, that is how we determine ingredient prices. I can tell a customer right now what the silage and hay will be until the 30th of June next year. I cannot tell him what the price of corn will be beyond the 15th of this month, although I do have most of the last half covered.

Q. What kind of shrink do we get on the chopped alfalfa?

A. We are feeding about 35 tons of alfalfa a day and it is delivered through the day as we need it. We run about a 1% shrink.

Q. How do you handle the alfalfa?

A. We buy that alfalfa weight across our scale. It is generally put into the mill within two hours after it is dumped out of the truck, but the way the wind blows in Texas, some days we would get a 10% shrink factor.

Q. How does the use of aspirin affect response in the treatment of pneumonia?

A. We used some aspirin and we used to use some dipyrone but it is my understanding that when we were using aspirin several years ago it was causing rumen ulcers, so we got away from using any aspirin type program.

We have not used any aspirin orally but we have tried some

dipyron injectable but with only fair success only in some chronics once in a while.

We did a series of treatment trials where we wanted them to be "blind" and part of the treatment was a compound given IV along with an antibiotic and that is why we were trying to give it IV. It was to mask or get away from the introduction of bias into the trial but it did not work.

Q. With access to the large number you have to treat, does it look feasible to you to be able to do some alternate treatments and therefore have the data base to analyze it to make the determinations about various drugs and what they may or may not do in the treatment, say, of pneumonia? Or does that look like it will create difficulty in getting your data?

A. The system was designed where this type of work can be done. In other words, without actually having to set up a specific trial design and go through and do all the work that each one of you knows is involved in doing a specific field study. We are entering every drug that is administered and the dose that is being administered and it is all going into the data base. We can call, for example, if we want to measure the incidence of recovery rates of cattle coming from Mississippi that come into the feedyard weighing less than 500 pounds, steers that have an inshrink of greater than 10%. If we want to compare the recovery rate of utilizing terramycin versus penicillin we can do that. The data are there and all I have to do is plug in the specific population we want to look at, the variables. In other words, it scans through and checks the cattle that have received the terramycin versus the ones that received the other product.

Q. Did they receive it in the same feedlot where the first steer through received terramycin and the next one had penicillin so that you had a control of some of your variables?

A. This system is set up so that if you want to follow through a specific design, yes, that can be done. It also can be done if you want to take a crosscut of a feedyard and do this as well. The system we tried to put together tried to record every event that occurred to those cattle and also record all the events in the past that we can find out. As much information as we can get our hands on, we try to file it in our data base in such a way that we can get back to it and get some value out of it. I have spent a lot of time in the past trying to analyze the different problems that occurred in the feedyards, response to different treatment programs and so forth and you can usually do a good job by hand if you are willing to put forth the time and effort and dig into files and look up treatment cards and going back. You cannot do it on a feasible basis on very many cattle and I want to do the same sort of thing with this system with as many numbers as I can. So, this is one of the considerations that we used as a criterion in the development of the system. The type of thing I hope we will be able to use on a daily basis is have that thing in front of me each morning so I will know what each feedyard is doing and what treatments they are using and which ones are not responding and what we can do about it as far as making a change.

Q. It concerns me about the accuracy of data going into these records. I am impressed with the sophistication. How do you try to get around some of the traditional problems we have with cowboys filling out records?

A. I don't know if we will get around it completely. I know at the present time we are trying to train our people that we are using this program with to make sure that the records are filled out correctly. I know one place where we are using it, they were not going to do it and they were concerned about the extra time that it would take, and once we started showing them some of our records and what we could do with it, we were proving with it, all of a sudden they got an interest in it. So, I think once we show them what we are doing and how it can help them and how it can help us do a better job, I think the accuracy will pick up. Right now, the feedyards are a little concerned and I am a little concerned with the feedyard personnel themselves. I will have to get the Hereford heifer to go with me to fill these records out! This has been a problem and I think it will be until we can show them how it can help.

Q. What is the Texas A&M program?

A. I am specifically thinking about the Texas A&M program. They are getting ready to set up a block system. They will be sending some students into the Texas panhandle area. This is something I think will come about in our area where they will send

students up there on a year-round basis and they are going to be looking for something to do, something to look at, and I feel if they want to see some pathology, some management, and existing problems, this could be one way they could follow the thing all the way through. This is what I am looking at and maybe as a selfish way as far as the block system but I think it would be education for them and educational for me and the feedlot industry. I think it is something that is coming.

Q. Do you carry out any experimental treatments?

A. I understand what you are talking about but from a manager's standpoint on any one situation on any one time we have to go with the best knowledge we have right there and I'm not for doing any experimenting. Now that is not to say that I don't keep an open mind in some of these things and there are situations where you are having problems with a particular disease entity, be it a respiratory, digestive or other problem, that you are not getting a response and there is a situation for trying different things. But if consistently we are getting the kind of response that we are satisfied with and treating our respiratory diseases with, let's say terramycin, we will stick with it and I am not for letting anyone experiment with the cattle because I owe it to my customer to do the best job I know how on any one case. Now we will set up some trials on company-owned cattle and try some different things. We are always trying to do a better job and gain greater knowledge on how we can do a better job of feeding. But this idea of every other animal treatment just to gain the data from it, I am against that.

From the Floor. As an educator I have been asked to comment on the internship program. I think it depends a lot on the philosophy of the veterinary school and particularly in the basic years of their education number one, and number two on the student, his background which gets back to the selection committee and what kind of people are they looking for that they want to become veterinarians. The most disappointing thing to me as an instructor was the veterinary student, the pre-vet student that was raised on a ranch or an irrigated farm, or whatever, but he was associated with the production of agriculture and he comes to college and enrolls in pre-vet or animal science with a pre-vet option and he is interested and so he comes and rides with you. All day long all he asks is production-oriented questions. How much money would you make if you did it this way? Or versus doing it that way? Good day! he goes off and applies and is fortunate or is unfortunate enough to get into veterinary school and three years later he rides with you as a junior or senior veterinary student. Now he has a totally different set of questions. Very seldom will he ask you which way should we handle these cattle to make the most money or to lose the least! Technical question and in-depth questions, you know if we give these cattle this drug and we did a CBC would the neutrophils be shaped different than if we did not give it. Those are the kind of questions and in some way we have to do a better job of exposing these students to production and teach them that, yes, veterinary medicine is important and it is an important part of the production and part of the overall production team but it is not the most important. You are not the manager's answer to all the problems because all the problems are not animal health and they are not the most economically important. We do have in my opinion too many veterinary teachers and veterinary students that are of the opinion still that the most important thing that ever walked on the face of the earth when it comes time to solve a problem on a farm or ranch or feedlot was a veterinarian. Of course, that gets back to the veterinarian. We have an egotistical problem in my opinion to solve which, when a fellow is out a few years, usually gets taken care of pretty quick. But he has to be production-oriented, so we have to get some production classes in veterinary school some way. They are coming in this area but they are not progressing as fast as the demands are and we lose this student in this four years of memorizing. He forgets how to rationally think. You can ask him a thought question before he gets in and if he doesn't know the answer he will go at it in a reasonable approach. You ask him something by the time he is a junior and if he cannot regurgitate it from memorization he just gives up. There have been some pretty controlled studies done on this by psychologists to show that blunt memorization takes a two or three year recovery phase to get over it. Blunt memorization as I remember it is there when you are a freshman veterinary student, so I think internships would be real good. We need some way to stimulate that student so

that when he goes out on his internship and rides with Dr. Bechtol, for example, or these boys from the Midwest, that he does not have such a letdown. As you know, they rode with me coming over there, the biggest letdown to them was that they did not get to do caesarean operations!

Second Speaker. I am not an educator but I would like to comment on the question. I broke into the feedlot industry through an internship. I had a Ph.D. in nutrition and quit a good job and went back to school and spent a year for the most part taking course work in the college of business, finance, and personnel management. Part of that program that I was involved with involved a six-month internship at a feedlot. I had the good fortune to work under a man by the name of Bob Bliss down in Texas and I started out in the feedlot processing cattle. I doctored cattle, rode pens and drove feed trucks and worked in the mill. I would have to say that the highlight of all the education I have ever had is the six months that I spent in that internship program. Whether I would be doing today what I am doing today without that I don't know. I would have to say that I had the greatest education I have had in my 35 years during that six-month period when I was on the internship program in the feedlot.

Third Speaker. To me, if we were going to do anything to prepare the veterinary student for this internship and for practice it would be getting more production-oriented classes for him. The best example I can give you is a junior-senior veterinary student and the classes he takes versus the student getting a master's in animal science. I don't care what discipline you want to pick—reproduction, nutrition, genetics, whatever—that student in two years takes computer programming and statistics so that he can analyze some data when it is generated to decide if it is significant or insignificant and therefore make a decision that is full of facts as we heard a fine speaker say this morning that runs a dairy barn. He makes a decision on facts if facts are there; impressions, opinions and suspicions we have to live with without facts. But when the facts are there we have to be able to interpret, analyze, and use them. If he wants to major in nutrition, he will get some exposure to genetics, meats, economics, all of these things that tie into the picture. And, while he is taking those classes, the junior and senior veterinary students are taking radiology, clinical pathology, advanced pathology, and he is taking immunology which is important and will apply to it but he has to take internal medicine, surgery, how to set those bones. They do that every day in the feedlot. He has to take all those classes and there is no way he can take all of them and then go and take some that are important. There just is not enough time so he either has to have post-graduate training in this area or he has to say, "Look, I want to get production-oriented and veterinary medicine isn't production-oriented so a D.V.M. degree if I want to get into production is the wrong kind of degree."

Maybe that is the decision he has to make. As it stands in most veterinary schools, in my opinion, that is a decision he has to make. Either that or I want a D.V.M. and after I get it I am willing to go another two or three years and get an advanced degree in a production-oriented science that would involve the dollars and cents on how to operate a business involved in agriculture.

Q. What is the demand for the type of person you are talking about? And what is the demand for a small animal practitioner? You can't teach several thousand students in this field of production and there are a hundred people like yourselves.

A. His question, comment and statement is what is the demand for a veterinarian that is production-oriented that is capable and qualified and it is less than small animal practitioners and equine practitioners as is evidenced by our profession. It is less in beef than it is in dairy based on the number that are sitting in this room versus the ones that are in the next room, standing room only. Because an individual dairy cow is still worth enough as an individual. You can look at her as an individual, diagnose and treat her as an individual and it takes more to treat individuals than it does to treat thousands. So, I can't give you an exact answer.

Second Speaker. Who knows what the answer is! In our area there are 75 to 80 feedyards, how many cattle in a 250-mile radius of Amarillo? One million in that distance. Forty percent of those feedyards do not use a veterinarian routinely. Sixty percent use one occasionally and maybe not at all. This is because he does not have

the confidence in the veterinarian. We have to be leaders in this field and show them that we do have some capable people and we can help them and so I say we need to do something to turn this thing around to make sure we do have capable people.

Q. As the manager of a feedlot and vice-president of a firm that feeds a few cattle every year and as you look back with your veterinary degree and realizing you picked up a lot of this from experience and working on it but if you were giving a recommendation to a senior in high school that wants to manage a feedlot, what would your recommendations be as far as formal training?

A. I think the opportunities for many individuals obviously would be limited. I think to answer your question, Dallas, what type of education would I recommend to somebody who specifically wanted to go into that field or specifically knew where he wanted to end up. That might be a bigger criterion but I would probably recommend an education in business, not necessarily going to the MBA type route but a basic business education with a definite influence in manpower management which would be human relations.

Q. Yet, you would have to admit because of your technical background it has been a big asset to you as a manager in terms of the production economics of the operation? Right?

A. Very true. But I think that is the type of approach from a management standpoint that Leo was referring to—once you get to that scope there is no way that I could today even with my veterinary background try to be in the position I am in and do Pat Brade's job. That is the reason that you get into a staff situation that then does become a business management and not a technical job. I would not be where I am today without having become a veterinarian because that was the route by which I got there. Yet, education-wise as such, I had very little to do with what I do on a day-by-day basis. I think as far as how many people or what is the market for training people in this area, in the Midwest we think it is wide open. We feel the veterinarian in our area has to be market-oriented. Too many of us are the other way. We are single animal-oriented and not market-oriented.

Q. Dr. Schuiteman, since your practice started providing professional counseling in the area of nutrition, how do you feel now as far as the relationship and rapport between your practice and your clients?

A. I think it is getting better but it is a little more complicated than dealing with just the simple client. We have strong feed companies in our area and this has to be a factor. You have to work with these people, you must have a management team. Some feed companies you can work with and some you cannot. Again, we are dealing with people psychologically and dealing with the feed salesmen and the feed manager and also probably have a direct or more direct pipeline to the manager of that feedyard. We have one who feeds the cattle, checks the cattle, and treats the cattle, so we don't have as complicated a system as, say, David does in his feedyard, but yet we are getting closer to management. The way it looks it will be a three-fold management team—the feedman, the feeder, and the veterinarian.

I want to speak to the topic that Dick asked awhile ago about the reliability of the accuracy of the data that is going into these computerized systems. I think I alluded to it just a bit but maybe I didn't emphasize it strongly enough. We know that there will be errors there and we know that it will affect some of our decisions and that is where we feel these data have to be controlled fairly well and the analyses of the reports have to be done with the veterinarian and the feedlot management that know the personnel and the records that are going in. For me to take a report that has been generated in David's yards and sit in my office and make some or draw some conclusions and come to a conference such as this and answer questions such as Dallas asked a while ago would be very misleading. So, I feel strongly that in being the author and trying to put this thing together, the data has got to be analyzed by the people that know the personnel that supplied the input.

Q. Have any of the larger feedlots done comparisons on Ralgr and other implants?

A. We are continuously doing some of these comparisons. We just finished a sizable study and I thought a decent study that only involved a thousand head of cattle but it was set up in a two-by-two factorial design experiment and was duplicated in using eight

experimental units that we were able to gather data that could be statistically analyzed. We compared the sinafax S implant on steers with stilbestrol. That was compounded on the feeding of stilbestrol versus rumensin. We have some interesting data. The one thing that was definite from it in our particular situation is that the stilbestrol implant was by far the better implant in terms of economics. But we had some compounding looking at rumensin and stilbestrol in the feed.

With the sinafax implant the stilbestrol in the feed was a better additive than rumensin. With the stilbestrol implant there was very little difference between the stilbestrol in the feed and the rumensin in the feed. Thus, one could probably theorize why the stilbestrol implant along with the stilbestrol in the feed is not an additive effect even though there were some additional benefit, but it was not a 100% additive. So, with the response to the stilbestrol implant, the rumensin had a chance to demonstrate itself greater than stilbestrol. We convinced ourselves overwhelmingly which was the better implant which I had believed before and it didn't change my convictions, but we are repeating the trial right now without compounding the implant on top of the feed additive. We are looking at rumensin compared to stilbestrol on another similar type study. As for Ralgro, we get into personal opinions there. I would not want to downgrade the product. From the experience I have had using all three implants I know which I think is best and which one I will stick with as long as it is available. The other interesting area of these implants is the buller syndrome and it is one problem we fight continuously. There was about a tripling of the buller incidence with the sinafax implant versus stilbestrol implant. I don't know if other people see this. Back in 1973, when they took stilbestrol away from us for awhile, we went to a complete sinafax implant and we saw our incidence of bullers in a 60,000-head yard go from 1% to 3%. After we were able to get stilbestrol back, we quit the sinafax implant and went back to stilbestrol and we reduced our buller incidence to about approximately 1%. This buller situation is an area that I would like to have some answers to. It is a perplexing question to me and it is an economic situation in the feedlot, too.

I want to make one comment on Ralgro. When we first started using it we were implanting it the same way as DES. We sure did not get the same performance. Now that we are implanting properly and using the Ralgro within one inch of the base of the ear we are getting much better results. So there again it is a personal opinion. We do use quite a bit of DES in our feedyards and with the computerized record system I have right now, the yards that are using sinafax and DES and Ralgro, we are running about a 1.8% buller problem in all of the yards that are using very much sinafax.

Q. Compared to what?

A. That is just a total figure. I don't have anything to compare. Each yard uses one of the three or all three and I do not have any way to compare. I am saying that it used to be less than a half percent and now it is 1.8% overall.

Q. Are liverflukes a problem in your area?

A. We get a few. A combination from liverflukes. At the present time we would just like to have a deflucking agent we could use, but we are not going to use the old one right now because it sure stresses the cattle and causes more problems. According to the people that work in the packing plants, if you are going to have flukes do not defluke them at the feedyard because you will have more problems with liver condemnation at that time. So, we try to get the cow-calf herds to do the deflucking. I think there is one veterinarian here that does some consulting work in Florida where they do defluke all the cattle and he might want to make a comment.

Q. What did Dr. Schuiteman think were the benefits of the internship program at Iowa State?

A. During my senior year I spent two months with Dr. Bechtol in Texas and two months in Illinois with Dr. Wally Brandt. I gained a great deal from both. It is hard to measure what you have learned. The two months I spent with Dr. Bechtol have really helped us in our practice. We have tried to take some of the things they have done and put them into our practice and we feel this is essential. The treatment programs, the vaccination programs, just the philosophy of handling the feedlot. We know we are dealing with different numbers but it really helps a veterinary student to tie

things together. He comes out with a lot of information and really can not tie things together and it really helps. I think during the senior year he should have more time off and I wish there was some way that we could screen practitioners where these people should go. Some practitioners use these individuals as vacation time. I don't think that is the way it should be used.

Comment on Internships. In the internship where you can go with the practitioner and spend time in a block system, I think for the educators in the group this is certainly superior to this business of one week or two weeks like some schools are doing. They let the student off for one week. That is just about enough time for him to get confused. Then he has to go back. So, I think the block systems are certainly better than the rotation where every week they change and to make sure that the student has an option to go where he wants. If he is interested in the management approach and large-scale production units, don't limit him geographically or limit him to what you think is best for him. The screening method has some pluses but it has some minuses. I know a few people who have tried that and if you want to mess up your political base then screen the practitioners in your state and let the students know which ones they should spend time with and which ones they should not!

For the block system, let the student go for a minimum of six weeks. He can spend six weeks with a general practitioner if he wants, or try a consultant or spend time in a place and drive feed trucks and pull the cattle and treat the cattle and get the overall picture of management. I think this could be a real plus.

Q. How many are willing or would put up with a veterinary student for six weeks?

Dr. Bechtol. That is one thing we are overlooking, and that is the veterinarian out in the field. If you want to sit down and work with this man and get after it, you benefit as much as he does if not more, because I learned a lot from Jan and I did get tired of him coming over and eating my meals, but, no, we learned if you are going to get anything out of it they have to live with you and really get after it. He and his wife came. They didn't stay at the house but we spent many hours a day together and I think if you are going to do it, do it for six weeks. I just got through with two Minnesota students at the same time and they spent not quite three weeks. They were just getting warmed up and going good that third week when they had to leave.

Moderator. I will wrap this up by saying if you are interested in food animal medicine, be it someone that has already graduated or you students here that are obviously here because you have an interest in food animal medicine, don't overlook taking a production-oriented attitude. If you are weak in any area in your training and experience and in your abilities, it is not in the science of veterinary medicine, it is in the field of production and being able to tie together the economic implications that are associated with veterinary medicine.

Another way to say it is, always make a decision that is economically sound first and medically sound second. Don't do the reverse. If you will just stick to that one principle, it will keep you out of more trouble than it will get you into. I think nutrition, not just because we have been involved in these seminars, is a big part of management, big part of economics, particularly in confinement feeding as Dr. Flack said 85% of the overhead is involved with feed so you are dealing with large numbers. We have an example here today of a small 10 cent a head charge but it amounted to \$30,000 a year. How many cattle can you save before you come up with a \$30,000 save. It will take a lot of them.

You are dealing with 100% of the population. If you pick any other area in the field of animal production, you are dealing with 100% of the population except veterinary medicine. Genetic improvement involves all the herd. Reproduction involves getting all of them pregnant. Economics deals with not all the animals but everything else. Nutrition involves feeding all of them. If you want to just limit your scope to sick cattle, on the average you will deal with 5 to 6% of the man's population in yearlings and maybe 15% in calves. And your impact, if you do everything that can be done, if you save all 5% of them, it isn't going to come close to what can be done when you are dealing with 100%. That is an economic fact and not a scientific tidbit that I am trying to say that veterinary medicine is just a fact from production economics that the more

percentage involvement there is the greater chance you have to create the economic return that everyone has mentioned here today.

You cannot be an expert in all those areas but you can be the hub with the spokes coming in and you are the one that an education does not say you have answers for everything. It says you have the capability to go to someone else or read or whatever source you have to go to get the information. You should have the ability to get the answer if you do not have it and interpret it to whatever level it needs to be interpreted. If you are talking to nutritionists

and veterinarians that are managers, obviously you are going to talk to them in a different light than if you are to a farmer that has not had any formal training and explaining what you think ought to be done.

Communicating is much more important than the general practitioner that is involved only in running up and down the road and doing hard work. Personality, tactfulness, selling yourself, yet remaining a professional while you are doing it. With those closing comments, let's give a hand to all the speakers.