

Feedlot Adaptation: Nutritional Therapy

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When I was asked to appear here, my first approach was to proceed along the line of the philosophy of dealing with corporate people. I felt this seemed to be a personal thing. I think that if you will study anyone that is successful in his area, he has worked out these personal things. I gradually limited my practice to cattle only and finally went into consultation. I would like to limit my remarks today and just discuss with you some of the things we are doing pertaining to livestock beef production, a period that I call, "lot adaptation." It is a period simply of no production, a wasted period, both in terms of gain and expenses. It is a period that takes you as a manager, part of the team in livestock production, to get the animals from purchase weight back to purchase weight.

About seven years ago we started working on this, realizing that this period was a lengthy one occupying thirty days in the feeding period on a weaning calf operation, which is much too long. Brief tests that we ran on yearlings in feedlot operations occupied up to eleven to twelve days, and it was a very simple matter, about third grade arithmetic, to realize that we were expending approximately 50 cents a day, and that every day we took off this period of feedlot adaptation, or lot adaptation, meant 50 cents per head profit.

As a veterinarian, I am quite selfish in this direction and I fully realized that the sooner I could bring an animal back up to a physiological norm, I would immediately reduce my health problems. So, we started working on this first with additives and gradually using supplement production to accomplish this. We have ended up with a complete ration for this period. I felt perhaps this may be of interest to you. Veterinarians have considered this a nutrition problem, and the nutritionist looks the other way the first few days or weeks, in a feedlot, hoping that the veterinarian will solve the problem! Due to a lack of communication, coordination, or lack of knowledge, nobody has really tackled this problem. We are having some encouraging results. It is a crude field trial where we use scales and disease incidence. Our

goal here is to reduce the period of lot adaptation which is the period from purchase weight back to purchase weight. We do not weigh at any specific time. We run some test weights at the end of thirty days and calculate our average feedlot rate of gain. *Day of production* would be probably the most correct term.

We consider large numbers of cattle concentrated in an area a disadvantage. Actually, I think it is an advantage.

I think that confinement in itself is not a disadvantage. If it is properly handled, it can be a great advantage.

One of the primary factors is *construction*—the design and size of the receiving pens. One hundred percent bunk space is provided for animals on arrival, and we have long, narrow pens which are only 50 feet deep. The back of the pen has water, and the front of the pen has feed. All animals on arrival are on full feed from day one. This has been long and hard to come by for some people, especially in calf weaning operations. We have the animals coming in from lots, geographical areas, all directions. We live in the center of the United States, and it doesn't make any difference. I am sure that Dr. Mackey can bear this out quite well. It doesn't seem to matter what kind of a year, they can come from the south in the spring, from the south in January, and vice versa, so we have animals coming to us in all degrees of nutrition, stress, and lack of energy. Ownership starts from the time of weaning anymore, in many operations, regardless if they are finished out or not. We are putting younger animals on feed, so our lot adaptation becomes more important. Secondly, we are going into *shorter and shorter feeding periods* as we improve efficiency and merchandising of proper beef with the cutability that we are finally becoming aware of in this field. If we allow ten days for lot adaptation and we are looking at a 100-day feeding period, we have wasted 10% of the feeding period, and no industry can go on with that weight loss. These are the two things that I think we should recognize. Thirdly, in all commercial operations these are *percentage rations*. These rations are also formulated on a percentage basis, a dry basis, and the consumption is 20 plus pounds, which means that on a 20-pound consumption most of the supplementation is based on one pound, or 5%. But yearling animals on arrival, from day one up to seven days, averaged only ten pounds of total feed consumption. So the animal that needed more of a replacement type nutrition was getting only 50% of the supplement that an animal on full feed was receiving. We have a trap built in there that we were not recognizing and many nutritionists in the field did not either! You have an animal that normally can consume 20 pounds. From zero to fifteen to seventeen days even weaning calves should consume that amount. So, all of this supplementation has to be geared to this type of consumption rather than the total pounds. We had ourselves trapped into a 50% default. I just wanted to bring in those considerations and to mention that we are concerned with production and disease incidence.

I have seen the problem of *energy*. I think that it is a very sensitive area and it has to be approached two ways. You can have problems with too little energy on arrival, which can be great, or you can have a problem with too much energy on arrival, which can be just as great. I think I have seen times where our immunity program fell flat on its face from too much energy—animals in an acute case of acidosis—and I question whether or not they were building up an immunity. We have solved this in several ways. Basically, we approach the energy problem three ways. I consider a newly arrived animal that is subject to stress of shipping, the stress of weaning, the long areas of the different geographic areas of movement—I think that this animal, whether steer or calf, is in different degrees of ketosis, and so in our lot adaptation, we feed one percent propylene glycol both as treatment and as an energy replacement. This has been working very well in the weaning calf. It gives quick, available energy that does not have to go through the energy cycle. A problem with calves and (Southern) cattle is feed consumption and adequate energy but our problem in local needs is just reversed, and that is over-consumption. However, since hunger is both physical and physiological, and since we can get the blood sugar increased with propylene glycol, I think we tend to negate the lag between consumption and digestion, and turn the Western steers' hunger pangs off sooner so that he does not overeat.

We also prepared the proper amount of grain and other ingredients in the ration. We attempt to use all the grains in the allotted adaptation ration that will ultimately be fed—for obvious reasons, to alert the rumen bacteria for the job at hand. I avoid and do not feed any fermented ration during this period. I do not feel that I can afford to waste time developing their appetite for fermented feed. We have tissue shrinks which obviously we have to take into consideration and we are combating this with a replacement type of mineral supplementation including potassium, magnesium, calcium and phosphorus. I feel that we must bring these cattle up to normal. We cannot overfeed our nutrient ingredients the entire feeding period, so we must overfeed and justify economically for this brief period we are using it. Some of the yearlings are only on this for three or four days, and we have calves which we have been able to complete on a lot adaptation period. We are now moving into our conventional feeding program in thirteen to fourteen days from the time they arrive at our lot (instead of 21 days). These are weaning calves and we feel that we have fully completed our allotted adaptation period. We are counteracting vitamin loss, not only A, D and E, but also some of the "B" vitamins for two reasons. A normal ruminant can produce all of these vitamins, and I maintain that this animal is not a normal ruminant. Any animal that has been in transit for over 48 hours has a loss of rumen function, and we must go into a replacement-type nutrition. We feel that we can justify the expenditure here. We have even gone to the point of using some amino acids orally, with encouraging results.

Briefly, we include a supplement of enough propylene glycol to give us one percent of the entire ration. The ration is composed of 35% grain—those that are going to be fed in the feeding period—and we hope to use 20% beet pulp. I like pulp because it is an energy and a fiber source, and it enables me to go through this period and give some fiber, 33% ground hay, one-half percent calcium carbonate, one and one-half percent salt and 10% supplements. Obviously, the rest of the ingredients are in the supplement.

Briefly, my purpose has been to discuss and alert you to the work that we have been doing. It looks encouraging. We have run many cattle on this program and I hesitate to mention numbers because I do not think they are significant! I think these people have to get their scales out, and as long as they are producing beef by the pound, it has to be justified thus. Our disease incidence has gone down. Unfortunately, we have also superimposed some changes in our vaccination procedures, so I cannot pinpoint which has helped us the most. In all programs, you are taking the whole nutritional load, but it does look very encouraging, and I think we need more awareness in this area. I have avoided all the antibiotics and treatment in this period except when really needed. Basically, I am approaching it on a replacement nutrition approach. It looks very encouraging, and I think it is an area that is definitely neglected and needs more attention.

QUESTION: Dr. Green, how do you get this growth and how do you encourage this consumption?

DR. GREEN: Well, I think first of all I mentioned the design of our pen. We are putting a lot of emphasis here. This is about our third or fourth year on this program. These pens are not too long, but they are only 50 feet deep. Calves on arrival have poor appetites. Now if you let a calf, a steer, or a yearling rest for awhile, it will go back and lay down and get sores and you are in trouble. On arrival we give a supplementation program with a molasses carrier. We feel that molasses is palatable and also feed rumen bacteria. The chopped hay and grain, and the other ingredients, assist feed consumption. Within 10 days we have had a lot of cattle “break over” and eat 100 pounds of this mix.

QUESTION: What about “lemon flavor”?

DR. GREEN: I don’t know! I have had no experience with lemon flavor. We haven’t used anything to increase palatability except molasses, and at times when the feed is too dry, we do have to add water for moisture.

QUESTION: Do the lots use silage?

DR. GREEN: Yes, just about any grower in the Midwest area. But we would go into silage after this period. From the 11th to the 15th day most of our cattle are switched over to silage.

QUESTION: I have one for Dr. Rinker. I would like to ask him not what he charges but how he charges, by the hour, or a retainer fee?

DR. RINKER: I charge a consulting fee, and I do have a contract, by the animal, per animal, and this gets you over the rough periods and

gets you into the good periods about the time you are ready to make another contract, but no, not by the hour. Basically, my role in the feedlot is as a consultant to make the owner money, and the best I can do is to teach their people to do a good job.

DR. FLACK: I would say that \$15.00 to \$20.00 would be an absolute minimum. I, too, really don't like an hourly type of arrangement because if you ever have any of the obvious pitfalls, you can't win. You will have to accept the particular feedlot circumstances—what are the personnel on that feedlot capable of doing themselves? Will you be doing all of the treatments, all of the administration, all of the diagnoses, or are you going out once a week to look at what they are doing and make recommendations as to what they might do differently in their therapy program? The more you have to charge—you want to figure it on a per hour basis. They are spending more time or spending more money on your knowledge and less on your efforts. As you go that route, I think you can start talking terms of \$25.00 to \$50.00 per hour with lawyers, and you can certainly talk in the same terms with a veterinarian.

Now, if you want to go from there to programming, which will be on a set fee basis, then I think the veterinarian and the feedlot management has to come to an agreement as to what is going to be expected or demanded of the veterinarian in relation to his time. His time is input as far as knowledge is concerned. Today I think the successful, active, large animal practitioner can make \$15,000 to \$25,000 a year annual income. Now, as a specialist, you could certainly be able to expect to be in the upper range of that field. This fee will have to be adapted to the area, and it will have to be adapted to the particular desire of the people involved, so it is not a matter of trying to avoid the question, it is a matter of describing the circumstances. I don't think it would be out of line to be above the \$25,000 a year bracket.

CHAIRMAN THIMMIG: Does this cover the situation pretty well?

VOICE FROM THE FLOOR: Quite well. Some young veterinarians don't even have to pay income tax for the first five years of operation, and you wonder what is going on!