

Ralgro—Non-hormonal Growth Stimulant on Pastured Calves

George Crenshaw, D.V.M.
 Consultant Practitioner
 Woodland, California

Ralgro is not non-hormonal. It is a synthesized product. The original idea for Ralgro came from a microtoxin from corn. They noticed when it was fed to pigs they got an improvement in performance but also enlarged vulvas and mammary development.

Synthesizing this product has elevated these side-effects. It is non-hormonal in that effect and it does not have much estrogenic activity. That does not mean it does not have some, because it does give enlargement in uterine size in heifers, for example. I had ample opportunity to look at this last spring when some heifers were implanted just prior to spaying. These heifers had congested uteri and they were implanted just the day before they were spayed. So we know the effect takes hold quite rapidly. But it is not a real handicapped factor. In fact, as far as spaying heifers is concerned, it makes the uterus a little bit easier to pick up. In regard to hemorrhage, this was not any greater than we had observed in unimplanted heifers.

I have been impressed with the effects of Ralgro. I might mention that for some of us it is available as Ralaball, professionally. For others it would be available as Ralgro only. The important thing that I have seen in it is nitrogen retention, increased nitrogen retention. This is superior to that obtained with diethylstilbestrol. Why do we get improved nitrogen retention? It is because it influences pituitary size and anterior pituitary function. I think, in general, pituitary size in implants is 1/3 greater than in unimplanted animals.

As such it is a true anabolic agent. It has very few limitations. We can start off from there. It regulates, as you are well aware. I do not have to tell you anything about that. It influences the pituitary and we get a substance that we call somatotropin. We do not have to labor that very long. It increases in the blood and it gives us a larger pituitary and we get muscle tissue produced, not fat. I want you to keep this in mind because when you grow animals with Ralgro they will have more bone and more muscle. They will not have more fat. Now, with the hormonal or hormone-like growth promotents you are going to have both muscle and fat.

Blood assays show that the implants are effective for extended periods of time. These implants are not going to last forever. Now, generally in my practice with cow-calf operations, I attempt to implant these calves when they are going to be available and as to

how we are going to use the calves. If we are in a purebred herd I certainly would not advise implantation of bulls that are going to be kept for breeding, because it will cause a hypoplasia as far as the testicle is concerned.

If heifers are implanted after about three to six weeks, we do not encounter atresia of the ovary. Now, as far as reimplanting is concerned, I do implant bull calves as if we are going to castrate them because we are not going to have the testicular growth. Of course, in some of our country where they like to have calf fries, they do not like that because they say, "Doc, you are reducing the size of the testicles 50% and we have to cut twice as many calves." That is all right with me because we can have a party on smaller testicles and get along just fine! So we do implant early, depending on when we are going to handle these calves. Now, a lot of times when we brand and mark calves we may start with calves that are three months old but we will get down to calves that are several days old and this entire group will be implanted.

Heifer calves I try not to implant if they are less than three weeks of age if they are going to stay within a commercial herd for breeding purposes.

The average nitrogen retention is almost 26% over controls. This is important from several standpoints that we will discuss. Nitrogen retention compared to diethylstilbestrol is about twice as great. This explains to a certain extent why you get improved muscle and bone development. Also, it explains if you go out and implant cattle and you get short on feed, you will not get into a situation where the calves will weigh less than the controls. They will usually weigh more. If you implant with some of our hormones or hormone-like products, you may find a negative effect from implanting on poor feed conditions.

When you have improved nitrogen retention, it gives you somewhat a protein-sparing effect and you can run these cattle on poorer feed and still get some type of response. Now, do not get the idea that I am going to recommend that we run cattle on 2 or 3% less protein because I do not feel that is worthwhile doing. But you can get by with poorer quality feed because of the improved nitrogen retention qualities.

Now, other side-effects that we run into, in pastured cattle in particular, sometimes with our hormones is urethral calculi. Now I am not going to say that we do not have any when we implant with Ralgro, but in comparing the two, there is considerably less because we do not get the hypertrophy of the urethral mucosa happening. The other thing is that it does have a short residue time. I might also add that Sinifax has a short residue time. This is

beneficial. Ordinarily, if you think of short residue times you will think of short times of activity. This is not always necessarily true. We may not have detectable residue but we will have the effects of the product for about 120 days. I do not think we could go much longer than that. However, I would prefer, where I want to maximize my growth plant, to reimplant every 90 to 120 days. In my experience I have been able to get better performance that way. In some instances it is not feasible to get pastured cattle up to do this.

Some of the results are not totally spectacular when you start looking at them, but 19% improvement is well worth the expense. In some places we did not show anything spectacular on poor feed. But still, a six-pound advantage, even if they are only bringing 40 cents a pound, is \$2.40. It costs about \$0.60 to implant. You are going to have to work these cattle for other things, so implanting is particularly worthwhile and valid under most circumstances.

I think a lot of people are afraid to implant heifers because we think, well, we might want to use them. I have a commercial herd that has about 5,000 cows in it and we implant every heifer and when we work those cattle we reimplant those heifers at weaning time and we reimplant them one more time before we breed them. I have run controls and in my opinion I can discern no difference between conception rates. In fact, the heifers that are implanted, if I wanted to be as brutally honest as I could be, are better because they have grown out and are bigger and they are ready to come in. I made a mistake with some feedlot heifers I thought we were going to keep in the feedlot. Instead they planned to ship them back to breed them and we implanted these heifers about 30 days before they were shipped out to be bred, and so I thought we had better follow these heifers along. We had, surprisingly, a 90% conception rate in these heifers. These were good, big Angus heifers, and no problems whatsoever. The other thing that surprised me is that these heifers went out after about 30 days post-implanting with the bulls, and we had about 70% that bred in the first 45 days. We kept the bulls with them about 60 or 75 days but the big majority bred in about 45 days. So I do not have too many reservations as far as implanting heifers, providing we do not implant at too young an age. I prefer to wait three to four weeks and I really think six weeks would be more optimum if we are going to implant heifers for a reproducing herd.

That is not true for bulls, however, because if we implant bulls at an early age they will never have the testicle size. Some of them may be fertile and they will be bigger and they will grow better, but they always remind me of steers. And certainly in the ones I have checked, we have a high percentage of infertility in them. It is not worth the worry and concern. I would just as soon have my bulls a little smaller and be bulls.

Another thing I found to be somewhat helpful is that, because it influences the pituitary we do have

some effect on stress. How great and under what varying circumstances is hard to measure. There is a publication of some work that was done in Canada on heat stress, where they put cattle in heat chambers. The influence of implants on resistance to heat stress was quite significant. We originally implanted 250- to 300-pound calves with DES. It appeared to me that we were having a lot of sickness so I changed the program around and deleted DES. Looking at our records I found morbidity and mortality lower when we did not implant. So we stayed on that program for quite some time, not implanting these calves until they had been in the feedlot thirty days. Well, I was talked into using Ralgro and I was not too favorably inclined to use it. But I did and surprisingly our morbidity and mortality dropped with the first group. I thought that was a fluke and it would not happen again, so we did two more groups and the same thing happened. So then we ran a control where we used Ralgro, DES, and unimplants. The Ralgro group was superior. Our morbidity was about 10% lower than in the controls and, of course, our mortality was 1% lower. DES was at the bottom of the list. So, from that time on, as far as feedlot calves are concerned, I want these calves implanted on day one. I think it is one of the things that pre-empts anything else as far as I am concerned. Vitamin A and Ralgro implantation are the two things I consider to be the most important from the standpoint of newly-received calves. One of the reasons I was getting poor results with Ralgro is that I was implanting incorrectly. First of all, we all do not pay enough attention to needles. Those needles should be sharp if we are going to implant.

Ralgro is fundamentally a subcutaneous implant, not subdermal. I do not necessarily implant in ears. I do if we are going to catch their head. That gives me a little more versatility, particularly when we are in the field and we are branding and marking calves and I still have to be around these cowboys that like to have dirt in their eyes and manure in their mouth all the time.

I was implanting the same way as with DES and that was out towards the middle of the ear. You must implant Ralgro at the base of the ear. Put it in. Withdraw it a little bit. Then you back off a little bit because if you do not you will crush the first implant. If you crush the first implant, you are going to get very rapid absorption of the first implant and then you may get a few side-effects in heifers. You may find well-developed teats for a while because they will absorb it very rapidly.

You can palpate them at the base of the ear. They are not around any arteries or veins. If you get them up too far, you do not get good absorption.

We are just beginning to learn how to use these things. We can use them to advantage in calves, such a tremendous advantage that we as veterinarians should be promoting this and doing it. In my opinion, for young animals, I think that Ralgro is the implant of choice.