

# Rear Leg Lameness in Feedlot Cattle

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A variety of lameness of infectious and traumatic origin are seen in feedlots. The incidence and economic impact of lameness in the feedlot is difficult to assess. It involves costs to the producer in handling costs, drug costs, reduced performance and lost animal value. It also involves costs to the packer in total and partial carcass condemnations.

If a steer, at current salvage value, loses 50 pounds while withdrawals are observed he represents an approximately \$20 liability. If instead he gains 25 pounds during the same period this represents a nearly \$30 advantage over the above weight loss.

In a retrospective study of over 200,000 head it was found that 0.6% of cattle marketed were sold Grade and Yield. Study of the records on these cattle yields a conservative estimate that as many as one-half of these were because of musculoskeletal disorders. These cattle averaged 150 lbs. lighter than their contemporaries and were discounted an average of \$20/cwt. Also a statistically significant ( $P < .03$ ) greater number occurred during the late winter and spring.

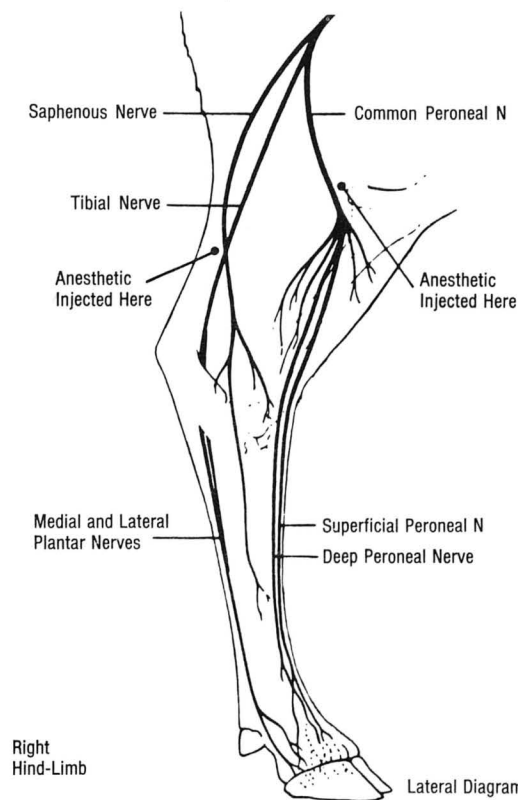
Analysis of figures provided by the U.S.D.A./F.S.I.S. shows that of the 35.1 million cattle slaughtered in the U.S. in 1984 161,176 (0.5%) contained gross arthropathies that resulted in 1806 carcass condemnations and 158,370 partial carcass condemnations. (6)

**So clearly, feedyard lameness has an economic impact on both the producer and the packer.**

Rear leg disorders can be particularly troublesome. In cases not amenable to treatment, or those that fail to respond, salvage is a viable economic alternative. However, drug and vaccine withdrawals can preclude this option for a period of time during which the animal continues to lose weight and value. If the discomfort associated with the lameness can be reduced the animal will continue to eat and weight loss will be minimized or a weight gain can be realized. With this in mind we have attempted to develop some different strategies to reduce the discomfort and stay within certain economic limits.

Amputation of the affected rear limb, while alleviating the discomfort, has not been successful in our hands as the animal has difficulty adapting and continues to lose weight.

Techniques to produce analgesia of the bovine hindlimb have been previously described (1, 2, 3). One of the simplest techniques involves blocking the tibial and common peroneal nerves above the hock (see Figure). If this block



Innervation of the bovine hindlimb. The sites for peroneal and tibial nerve blocks are from Collin, C.W.: A Technique to produce Analgesia of the Hind Digits of Cattle. *Vet. Rec.*, 75:833.

were permanent, or of extended duration, effective, long term analgesia of a chronically painful lower hind limb could be achieved.

Two techniques were attempted. The first involved neurectomy of the common peroneal nerve just behind the posterior edge of the lateral condyle of the tibia before the nerve dips down between the long peroneal and lateral digital extensor muscles to divide into the superficial and deep peroneal nerves, along with neurectomy of the tibial nerve 8-10 cm. above the tuber calcis and immediately in front of the Achilles tendon using a lateral approach and a hook device to help free and externalize the nerve. Restraint is achieved using a general anesthetic.

The second technique involves injecting alcohol (3) in and around the common peroneal and tibial nerves. For the common peroneal, the lateral condyle of the tibia is palpated and a needle is inserted through the skin and the aponeurosis of the biceps femoris until the point just touches the posterior edge of the condyle and injecting. The tibial nerve is blocked by grasping the Achilles tendon 8 cm proximal to the tuber calcis and inserting the needle from the lateral side immediately in front of the tendon until its point can be felt just under the skin of the medial side, withdrawing slightly

and injecting. (1)

Either method produces analgesia of the lower aspect of the rear limb. As with any technique, this one has advantages and disadvantages. Advantages include: only two nerves are involved and they are both large, easily approached, at a convenient level and their position is easily determined by palpation making the procedure simple, quick and inexpensive; restraint requirements are minimal and the technique may be done in the field; there is only moderate interference with the nerve supply to the muscles (2, 5). Disadvantages include: knuckling in some cases; relatively few cases are good candidates; routine post-surgical or post-injection complications.

The final analysis remains cost effectiveness. Given the low time and materials input compared to the economic

## Questions & Answers:

*Question:* What is the withdrawal time?

*Answer:* We typically use 30 days on all the extra label drugs we use. But the situation we're talking about here usually is where we get a steer in and he has some type of an infectious arthropody or even he has some type of traumatic injury and whoever is in charge of treatment of cattle that day medicates that steer. And either he doesn't respond or he never had a disease to respond at the outset. And so now we're stuck with a steer that has antibiotics in him and we have to observe a withdrawal and that chronically lame steer is just going to continue to go downhill and lose weight and it doesn't take very long for those cattle to drop a lot of weight. In 30 days we can have lost a lot of money for that producer.

*Question:* Do you have a thumb rule for what is a good candidate and what is a bad candidate?

*Answer:* A lot of times when you have an infectious arthritic problem and you've treated it for a week or longer you're obviously getting nowhere. And you begin to realize you're not going to solve this steer's . . . (comment) if you think he's going to continue to lose weight and go down-

liabilities covered previously, this is a cost effective procedure in proper candidates.

**Lameness will continue to be a source of economic loss in the feedyard, however good management to minimize the number of traumatic lameness cases and good pen surveillance to identify and initiate treatment early will help minimize these losses.**

## References

1. Colin, C.W. (1963). The Veterinary Record, v. 75, n. 33, pp. 833-834.
2. Hall, L.W. and Clarke, K.W. (1983). Veterinary Anaesthesia, 8th Ed., pp. 250-251.
3. Lumb, W.V. and Jones, E.W. (1984). Veterinary Anesthesia, 2nd Ed., pp. 387-388.
4. Lumb, W.V. and Jones, E.W. (1984). Veterinary Anesthesia, 2nd Ed., p. 368.
5. Getty, R. (1975). The Anatomy of the Domestic Animals, 5th Ed., v. 1, pp. 854-858.
6. United States Department of Agriculture, Food Safety Inspection Service Statistical Summary: 1984.

hill and now you're looking for some way to get out from under that steer. And you're trying to minimize your loss. And the same thing would apply to a steer that for some reason gets a traumatic injury right, say, at the processing chute. And now he's got a processing drug in him and has a withdrawal. What are you going to do with that steer for 21 days while you observe withdrawals?

*Question:* What is the difference in selling price between average grade in yield. . .

*Answer:* Well, the market this summer there was a lot of difference. But when the market gets a little better, typically we're talking up to 20-30-35 cents per hundred weight difference between that steer we showed and one of these steers that kind of wasted away limping around in one of our hospital pens.

*Question:* What do you do if you get a knuckler?

*Answer:* Watch him, because as they get used to it they learn to adapt to it. Sometimes you can stabilize that with just a real quick splint and then they learn to adapt to it. Either one of those.

## Lutalyse® Sterile Solution (dinoprost tromethamine)

**VETERINARY** – For intramuscular use in cattle when regression of the corpus luteum is desired. This includes estrus synchronization, treatment of unobserved (silent) estrus and abortion of feedlot and other non-lactating cattle.

### INDICATIONS AND INSTRUCTIONS FOR USE

**Cattle** – *Lutalyse* (dinoprost tromethamine) sterile solution is indicated as a luteolytic agent.

*Lutalyse* is effective only in those cattle having a corpus luteum, i.e., those which ovulated at least five days prior to treatment. Future reproductive performance of animals that are not cycling will be unaffected by *Lutalyse* injection.

**1. For Intramuscular Use for Estrus Synchronization in Beef Cattle and Non-Lactating Dairy Heifers.** *Lutalyse* is used to control the timing of estrus and ovulation in estrus cycling cattle that have a corpus luteum.

Inject a dose of 5 ml *Lutalyse* (25 mg PGF<sub>2α</sub>) intramuscularly either once or twice at a 10 to 12 day interval.

With the single injection, cattle should be bred at the usual time relative to estrus.

With the two injections cattle can be bred after the second injection either at the usual time relative to detected estrus or at about 80 hours after the second *Lutalyse* injection.

Estrus is expected to occur 1 to 5 days after injection if a corpus luteum was present. Cattle that do not become pregnant to breeding at estrus on days 1 to 5 after injection will be expected to return to estrus in about 18 to 24 days.

**2. For Intramuscular Use for Unobserved (Silent) Estrus in Lactating Dairy Cows with a Corpus Luteum.** Inject a dose of 5 ml *Lutalyse* (25 mg PGF<sub>2α</sub>) intramuscularly. Breed cows as they are detected in estrus. If estrus has not been observed by 80 hours after injection, breed at 80 hours. If the cow returns to estrus breed at the usual time relative to estrus.

**3. For Intramuscular Use for Treatment of Pyometra (chronic endometritis) in Cattle.** Inject a dose of 5 ml *Lutalyse* (25 mg PGF<sub>2α</sub>) intramuscularly. In studies conducted with *Lutalyse*, pyometra was defined as presence of a corpus luteum in the ovary and uterine horns containing fluid but not a conceptus based on palpation per rectum. Return to normal was defined as evacuation of fluid and return of the uterine horn size to 40 mm or less based on palpation per rectum at 14 and 28 days. Most cattle that recovered in response to *Lutalyse* recovered within 14 days after injection. After 14 days, recovery rate of treated cattle was no different than that of nontreated cattle.

**4. For Intramuscular Use for Abortion of Feedlot and Other Non-Lactating Cattle.** *Lutalyse* is indicated for its abortifacient effect in feedlot and other non-lactating cattle during the first 100 days of gestation. Inject a dose of 25 mg intramuscularly. Cattle that abort will abort within 35 days of injection.

### WARNINGS

Not for human use.

Women of child-bearing age, asthmatics, and persons with bronchial and other respiratory problems should exercise **extreme caution** when handling this product. In the early stages, women may be unaware of their pregnancies. Dinoprost tromethamine is readily absorbed through the skin and can cause abortion and/or bronchospasms. Direct contact with the skin should, therefore, be avoided. Accidental spillage on the skin should be washed off **immediately** with soap and water.

Use of this product in excess of the approved dose may result in drug residues.

### PRECAUTIONS

Do not administer to pregnant cattle unless abortion is desired.

Do not administer intravenously (I.V.), as this route might potentiate adverse reactions.

Cattle administered a progestogen would be expected to have a reduced response to *Lutalyse*.

Aggressive antibiotic therapy should be employed at the first sign of infection at the injection site whether localized or diffuse. As with all parenteral products careful aseptic techniques should be employed to decrease the possibility of post injection bacterial infections.

### ADVERSE REACTIONS

1. The most frequently observed side effect is increased rectal temperature at a 5x or 10x overdose. However, rectal temperature change has been transient in all cases observed and has not been detrimental to the animal.

2. Limited salivation has been reported in some instances.

3. Intravenous administration might increase heart rate.

4. Localized post injection bacterial infections that may become generalized have been reported. In rare instances such infections have terminated fatally. See PRECAUTIONS.

### IMPORTANT

**No milk discard or preslaughter drug withdrawal period is required for labeled uses.**

### DOSAGE AND ADMINISTRATION

*Lutalyse* is supplied at a concentration of 5 mg dinoprost per ml. *Lutalyse* is luteolytic in cattle at 25 mg (5 ml) administered intramuscularly. As with any multidose vial, practice aseptic techniques in withdrawing each dose. Adequately clean and disinfect the vial closure prior to entry with a sterile needle.

### HOW SUPPLIED

*Lutalyse* Sterile Solution is available in 10 and 30 ml vials.

**Caution:** Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian.

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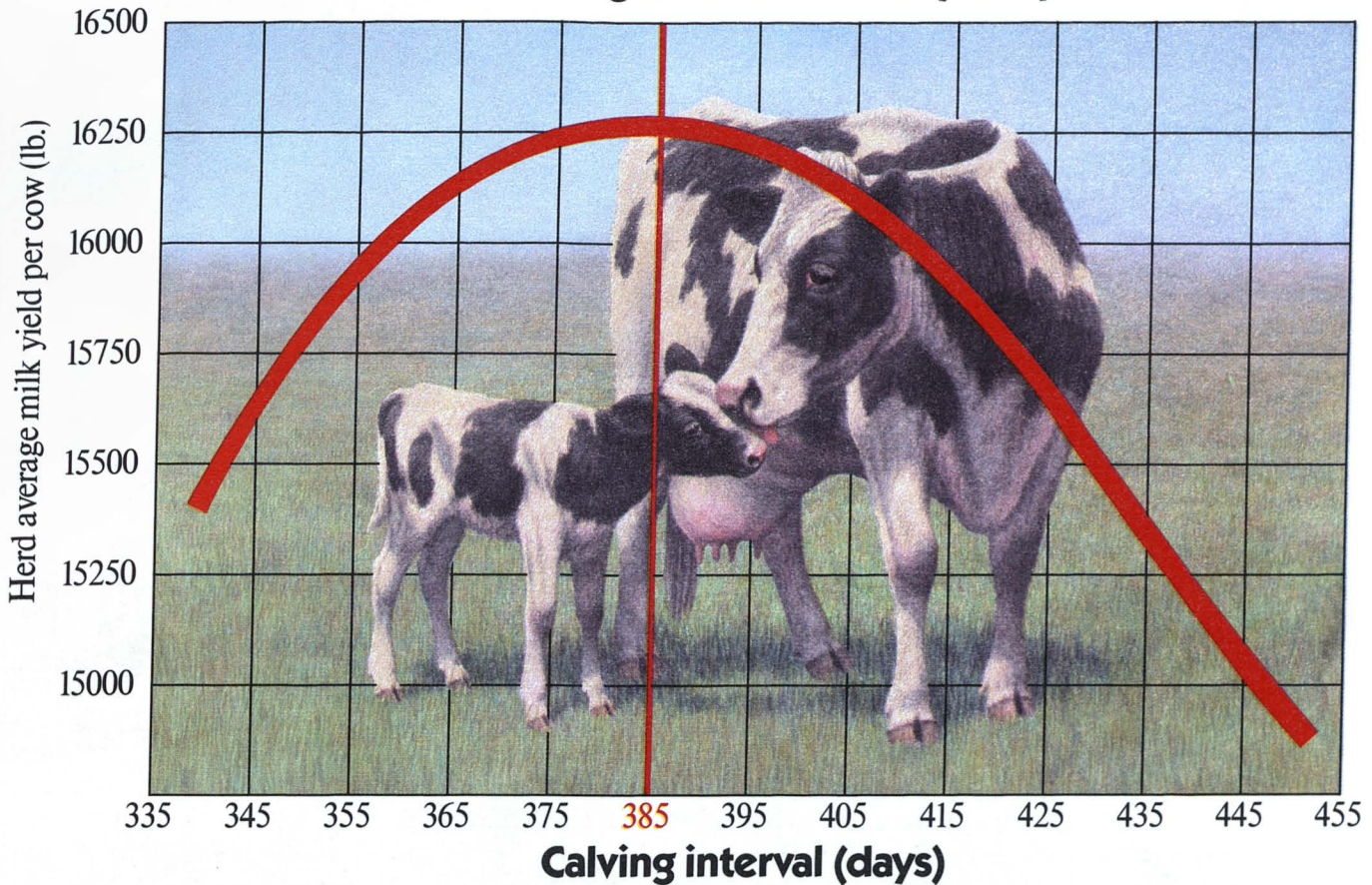
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# For shorter calving intervals, make **Lutalyse**<sup>®</sup> your postpartum partner.

(dinoprost tromethamine)

Effect of calving interval on milk yield per cow



## Reduce costly 'days open' with Lutalyse<sup>®</sup> STERILE SOLUTION.

As a dairy producer, you can't afford anything more than a 12-13 month calving interval. Sound postpartum management and Lutalyse can improve your breeding efficiency and put your cows back in the milking string on schedule.

## The Lutalyse postpartum program.

Chronic endometritis (pyometra) and silent or unobserved estrus are costly problems that can prevent you from getting cows bred on time. Solve these problems



by having your veterinarian conduct a postpartum examination and use Lutalyse as indicated to get your cows bred back on time.

Missed breedings? Don't waste any more time. Use Lutalyse as indicated and re-breed on observed heat.

## Ask your veterinarian.

For improved breeding efficiency and shorter calving intervals, ask your veterinarian about postpartum management and Lutalyse.

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