

# Feeding CTC to Beef Cows

---

The transition of many antibiotics used in feed such as Chlortetracycline (CTC) from over the counter (OTC) to veterinary feed directive (VFD) status has highlighted some issues with including CTC in the diet of cows.

## Veterinary Feed Directive

The first issue is that no matter the circumstances, you must have a VFD from your veterinarian to legally include CTC in the feed or mineral. In beef cattle, CTC is approved to control anaplasmosis and bacterial pneumonia or to treat bacterial enteritis or pneumonia. For respiratory disease, CTC can be fed to control respiratory disease at 350 mg/head/day or to treat respiratory disease at 10 mg/lb/day. Generally, the low dosage is not very effective at achieving appropriate blood levels in mature cattle but has been routinely used for calves prior to and after weaning. The higher treatment dosage rate can only be used for 5 days. For cow-calf producers one of the common usages of CTC is to control anaplasmosis. Although, CTC can be fed to cattle less than 700 lbs at 350 mg/day to control anaplasmosis, mature cattle are more at risk and can be dosed at a higher rate of 0.5 mg/lb/day in normal feeds and 0.5 to 2.0 mg/lb/day in free choice feeds.

Livestock producers do have the capability of buying CTC as a type A medicated article without a VFD since it remains a category 1 feed medication. However, legal inclusion of this product in cattle feed still requires a VFD from your veterinarian. Expect the Food and Drug Administration (FDA) or state inspectors to carefully monitor livestock producers purchasing the type A medication without a VFD. If you have an inventory of a VFD medication, such as CTC, on hand that was legally purchased without a VFD prior to January 1, 2017, you must get a VFD from your veterinarian to legally feed the medication. The same principle applies to leftover VFD drugs.

If your VFD has expired and you still have some product in inventory, you need to get a VFD from your veterinarian to legally feed the medication.

The FDA approvals of feed medications do not allow for combining two or more medications in the feed unless the combination has been approved by the FDA. Specifically, CTC is only approved to be fed with lasalocid (Bovatec), laidlomycin (Cattlyst), sulfamethazine or decoquinatate (Deccox).

Concurrent approvals are for specific regimens and indications only, therefore, manufacturer label should be consulted. Products that are not considered drugs by the FDA can be fed with CTC. The Environmental Protection Agency (EPA), rather than the FDA, regulates insect growth regulators, which are used to control horn and face flies. Because the FDA does not consider insect growth regulators to be drugs, there are not restrictions on feeding these products with VFD drugs such as CTC.

## Control of Anaplasmosis

Control of anaplasmosis is challenging as generally cattle are grazing on pasture during the vector season when anaplasmosis is most commonly transmitted by biting insects. Supplying a medication in a feed based product while cattle are dispersed grazing may be challenging. Cattle producers have three options to supply CTC to cattle for anaplasmosis control. The most reliable option is to provide CTC in feed mixture daily. Cattle may be fed a concentrated top dress product only or a feed product with CTC added at a lower concentration. When delivered in this manner cattle will more reliably consume their daily dosage. A second option would be to mix CTC with a mineral mix that is fed daily (sometimes referred to as hand fed). Although this option can be effective, there is an increased likelihood that intakes of CTC may not be consistent compared to feed products. Hand feeding a mineral product with CTC would be similar to

supplying feed daily, in that it should be spread out in a bunk so that all cattle have equal access to consume it.

The most common method used by cattle producers trying to control anaplasmosis is to use a free choice mineral product. Although this method is the easiest way to supply cattle CTC it is also the most problematic. Occasionally cattle on a medicated free choice mineral will show symptoms of anaplasmosis as individual cows may have variable intake of minerals and consequently CTC. Utilizing a free choice method has some restrictions. Only the brand name Aureomycin product is approved for free choice usage to control anaplasmosis. Additionally, only FDA approved formulations of the free choice product are allowed to have CTC added. In order to assure that the correct level of CTC is consumed each day, the manufacturer of the free choice product has to have demonstrated to the FDA that cattle consume CTC in the free choice feed in an amount that is safe and effective. Specifically, Purina has an approved 5000 g/ton block and Ridley has 700 g/ton block. For loose mineral products, ADM has an 8000 g/ton product, Hubbard/Ridley has a 6000 g/ton product and Zoetis has a 6000 g/ton public formula. Although the Zoetis mineral formula is publicly available to allow any feed mill to produce it, some of the specific ingredients may be difficult to obtain. Depending on your location, the availability of specific products and the exact mineral profile supplied in these approved free choice mineral products may not be applicable for your area.

Some people have attempted to get around the issue of getting CTC included in a loose mineral by writing or requesting a VFD for mineral with CTC to be hand fed. Although it is legal to write a VFD in this manner, if the intent is to then feed the product as a free choice mineral instead of daily, it would be a violation of federal law. During a FDA or state inspection of VFDs, the cattle producer would be found to be violating the VFD and would be subject to fines or penalties. Additionally, the veterinarian that wrote the VFD may be scrutinized if the inspectors believe that the veterinarian knew the intent. One issue that has been identified during the transition from OTC to VFD is that many of the medicated mineral mixes that have been used in the past in free choice mineral feeders were actually mineral mixes designed to be fed daily. Cattle producers now wanting to buy the mineral they have always used are finding that they cannot get the VFD written for a free choice mineral.

When making any decisions to use medications in your cow herd consult with your veterinarian to make sure that the products are being used properly and will result in improved health for your cattle. Many things have changed since CTC was first introduced as an OTC feed medication and there may be other options available to maintain the health of your cattle.

Prepared by Grant Dewell, associate professor in beef production and extension beef veterinarian, Iowa State University; Chris Clark, beef specialist, Iowa State University Extension and Outreach.

---

This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to [www.extension.iastate.edu/diversity/ext](http://www.extension.iastate.edu/diversity/ext).