

Feeding CTC to feedlot cattle

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 feedlot cattle.

Veterinary Feed Directive

The first issue is no matter what your circumstances you must have a VFD from your veterinarian to legally add CTC to the feed. In feedlot diets CTC is approved to either treat or control respiratory disease or control liver abscesses. Chlortetracycline is not commonly used for liver abscess control since other products such as tylosin are available and CTC is not approved to be fed in combination with monensin, the most common feed medication that controls coccidiosis and improves feed efficiency. Monensin and tylosin are approved for combination use. For respiratory disease CTC can either be fed to prevent respiratory disease at a low level of inclusion of 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 feedlot cattle. The higher treatment dosage rate can only be fed for 5 days. Livestock producers do have the capability of buying CTC as a type A medicated article since it still remains a category 1 feed medication without a VFD. However, to legally include 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 either on January 1, 2017 when the transition from OTC to VFD happens or 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.

Combination feeding

Another issue that has been highlighted is combination feeding with another feed medication. The FDA approvals of feed medications do not allow for combining 2 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, laidlomycin, sulfamethazine or decoquinat. Since CTC is not approved to be fed with monensin which is commonly included in most feedlot diets, feed mixing needs to be adjusted. Historically, some feedlots have fed CTC and monensin together because they either ignored the law or did not know the law. Since CTC is now a VFD medication combination feeding has to be stated on the VFD which has highlighted this issue. Therefore, in order to include CTC in the diet feedlots must discontinue feeding monensin (and any other medications not approved to be fed with CTC) during the time they are feeding CTC. At one time it was thought at AM/PM feeding was a legitimate way to still be able to utilize both medications at the same time. However, the FDA has specifically stated that feeding one medication in the morning and the other medication in the afternoon is not allowed. Both medications are still ending up in animal in the same time period which violates the combination rule. To fully comply with FDA rules the feed truck should be completely empty before mixing a new medication and the feed bunk should be scraped clean of any residual feed from the day before.

Feedlots have 3 options to consider when contemplating adding CTC to the diet. The simplest option is to just not use CTC. Keep cattle on their regular diet that may have tylosin and monensin included and look to injectable products to control or treat respiratory disease. In many cases injectable products will result in better health outcomes than feed medications. Remember if cattle are sick they are not normally eating as much as they should so it is difficult to obtain good consistent results with feed medications in the face of disease. The second option is to discontinue feeding other medications such

as tylosin and monensin so that CTC can be fed. For most Iowa feedlots that rely on a commercial supplement (balancer) that has minerals, vitamins and any feed medications included this means that feedlots need to have two types of supplement one with monensin and/or tylosin and one without. This second balancer may include another ionophore medication such as lasalocid which is approved to be fed with CTC to maintain coccidia control and feed efficiency. The third option if feedlots can't maintain two balancer formulations or are concerned that mix ups may occur is to not feed a mineral balancer for the 5 days cattle are on CTC. If cattle have been on a good plain of nutrition including feeding vitamins and minerals above NRC recommendations cattle should have enough body stores to not be adversely affected for only 5 days. The two major concerns are Magnesium and Calcium:Phosphorus ratio. Cattle do not store magnesium well and generally rely on daily intake. If magnesium has been well supplied they should be ok for 5 days but keep a close watch for evidence of tetany (weakness, excitability, trembling, staggering or collapse). Since corn based diets are high in phosphorus additional calcium is usually required to keep the ratio in balance. One potential detriment to an imbalance is that bladder stones may develop. Supply free choice salt to help drive water intake and urination during this time will keep urine diluted and minimize chance that bladder stones develop.

When choosing to discontinue monensin during the 5 day CTC usage there has been some concern when switching back to a diet with monensin included. Some nutritionists have recommended only feeding a half of the regular monensin dosage because of concerns about feed intake. Monensin can cause cattle to decrease their feed intake when it is first introduced into the diet. However, if feed intake is being properly managed this issue is not a major concern. Therefore, if feed intake has been maintained and not increased during the 5 day CTC feeding period there is little risk in moving cattle back to their regular dosage of monensin after CTC has been discontinued.

Pulse feeding

The third main issue that has been highlighted by the VFD transition is the practice of repeat pulsing of CTC. Since the higher dosage to treat respiratory disease is only approved for 5 days some have adopted the practice of pulse feeding CTC for 5 days, stop feeding for 24 hours and then repeating the 5 day pulse a second and even a third time. Essentially, this practice is treating cattle for 15 days with a 5 day approval which is considered by the FDA to be extra label drug use (ELDU). Extra label usage of feed medications is specifically prohibited by federal law. The only mechanism to legally re-treat cattle with another 5 day pulse is to have the cattle carefully observed after the first 5 day treatment and if cattle have improved but not completely your veterinarian may choose to write a new VFD for another 5 day treatment. If cattle have not improved another therapy such as an injectable antibiotic should be considered. Without the observation of cattle in between pulses the FDA will consider the routine usage of multiple 5 day pulses to be ELDU and parties could face severe fines or penalties. Additionally, monthly pulses as a preventative therapy would not be appropriate as the label indication for the 10 mg/lb/day is for treatment of respiratory disease not prevention or control.

When making any decisions to use medications in your feedlot 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 better options available to maintain the health of your cattle.

Prepared by Grant Dewell, Beef Extension Veterinarian; and Dan Loy, Professor of Animal Science, Iowa State University Extension and Outreach.