



Dr. Colin Palmer

Biography:

Dr. Colin Palmer is an Associate Professor of Theriogenology (Animal Reproduction) at the Western College of Veterinary Medicine. Originally from Nova Scotia, Dr. Palmer worked in mixed practices in Ontario and British Columbia and has owned/operated a practice in Saskatchewan. Dr. Palmer along with his wife Kim and children Lauren, Emily and Carter run a herd of purebred Red Angus cattle under the KC Cattle Co. name.

Prevention and Control of Ringworm Spring and Summer may be the time to Implement Your Strategy

Doesn't it just make you feel sick when your show animal or sale bull is covered with ringworm patches right at the worst possible time? Ringworm is a skin condition that gets almost no attention in North America probably because it is not considered to be economically important – no production losses, no mortality. However, I beg to differ! I think that this disease does affect the bottom line; especially, for the seedstock producer. Any blemish on an animal, no matter how minor it may be, probably has a negative effect on price. Simply put, if a product doesn't look good your market is limited. Just ask the person responsible for the fruit and vegetable section at your grocery store! Ringworm can also be a legitimate cause of financial hardship: hide damage may be evident up to 15 months after the skin lesions have healed; and animals with obvious disease may not be eligible for export. This means your shipment of cattle gets rejected at the border and sent back home.

Ringworm is common throughout the world appearing in dogs, cats, horses, sheep, cattle and several other species of animals. In all animals ringworm is caused by a fungus; there is no worm involved at all – the name is misleading. It is important to realize that the type of fungus tends to vary with the species of animal. For example, in cattle and horses ringworm is caused by *Trichophyton verrucosum*, whereas in dogs *Microsporum spp.* are the most likely culprit. One of my biggest concerns with ringworm is that it has zoonotic potential. In other words, people can get it! Young children, the elderly and city folk would be more likely to contract the disease than farm people. These are exactly the same folks that are more susceptible to *E.coli* O157, or tainted hamburger illness.

The ringworm-causing fungus infects the skin and hair follicles. Most cases in cattle occur during the winter and early spring, the traditional bull sale season, with the typical clinical picture being one of small to large circular patches on the body, limbs and occasionally the face. Face and head lesions are more prevalent in young stock; in fact, I have seen a couple of very severe cases where most of the hair was gone. The skin might actually be raised in the area of hair loss and grey to white flakes or scales of skin are common. Ringworm patches are considered to be only mildly itchy, but will bleed easily if irritated. Dark, cool, rainy conditions seem to favour the occurrence of ringworm as does the keeping of cattle in close confinement.

There are a number of treatments for ringworm. Motor oil and toothpaste really are not that effective. If there is any benefit it may be that these products simply limit the availability of oxygen and with diligent application the fungus can be smothered. Griseofulvin-containing treatments should not be used in food animals. Diluted bleach and farm fungicides may have a place, but the possibility of environmental contamination and meat residues might need to be considered as societal interests push our industry to be more responsible. Imaverol®, containing enilconazole as

the active ingredient, is arguably the most effective chemical treatment for cattle; however, animals must be washed every 3 to 4 days for a total of 4 applications making it impractical on most farms. Even after the fungus has been killed hair regrowth can take several weeks. Warm spring sunlight is my personal favourite as it is effective and treatment is easy to administer. When combined with natural hair shedding the patches of hair loss seem to disappear quickly. Sunlight may also prevent clinical disease as I can't remember ever seeing a case of ringworm in a pastured animal during the summer.

Prevention is the best way to deal with ringworm in my opinion. If you have had ringworm on your farm you must realize that fungal spores can last for several months if not years on your equipment and penning material. Wood is especially good for helping to keep the disease around for some time. Buildings and equipment can be disinfected with diluted bleach or phenolic compounds, but practicality may be a problem. Many producers experiencing an outbreak have told me that they had not seen ringworm in their herd for years until the recent purchase of new stock. Quarantining new arrivals for a minimum of 2 weeks might be a consideration; longer if they have an active case. Vitamins A, E and selenium have also been reported to be beneficial for assisting with recovery and adequate levels in the diet may prevent disease or limit the severity.

I have never had obvious ringworm on my own body, despite being exposed to it countless times and the majority of infections I have seen amongst those handling cattle are in children rather than the experienced stockpersons. Practical experience suggested that herds that have had an outbreak of the disease were protected from reoccurrence for some time with most clinically affected animals being protected for the rest of their lives. In 1979, a vaccine for the prevention of ringworm in cattle was introduced in Norway which helped to reduce the number of infected herds in the Gausdal region from 70% to 0% over an 8-year period. There is no vaccine available in Canada or the US, but there are ways to provide immune protection for your herd. Exposure of new arrivals with ringworm patches to the rest of the herd including young calves may be effective, but you must be careful as ringworm may not be the worst disease that comes of this practice. If mixing does occur, ringworm will spread rapidly through a naïve herd and only calves born after the event will be susceptible to the disease. One thing we have tried after having experienced ringworm in our yearling bull pen over a couple of winters was to open that pen up during the summer once the manure had been cleared out allowing nursing pairs to go in and rest. As is typical, the cattle would rub on the wooden shelter fence and rails. I believe that the calves were exposed to the fungus and probably broke the cycle without having full-blown disease. This trick won't be as effective as the number of viable spores in the wood decline over time so being careful with new introductions and contaminated brushes etc. will continue to be important.