

# ausrichter ringworm newsletter

Number 47

## Ringworm – treatment of the animal and decontamination of the animal's environment of ringworm spores

Ringworm (Dermatophytosis) is a common infectious agent of the dog and cat (and other animals). It is of increasing significance because of its potential to affect humans. The species of significance are *Microsporium canis* (*M. canis*), *Microsporium gypsum* (*M. gypsum*) and *Trichophyton mentagrophytes* (*T. mentagrophytes*). *M. canis* causes 70% of ringworm infections in dogs and 99% of infections in cats. 5% of dogs are considered carriers, and various studies from cats have set the carrier rate at anywhere between 4-20% of healthy stray cats culturing positive for *M. canis*. A study from the United Kingdom found that 35% of show cats were infected with *M. canis*. The strains are zoonotic, meaning they can infect humans (Quaife)<sup>1</sup>.

A US study reported the incidence of *M. canis* infection has strongly increased during recent years and this dermatophyte is now the most prevalent in tinea capitis in children (ringworm infection of the scalp)<sup>2</sup>.



### Enilconazole is a broad spectrum topical antimycotic

Enilconazole has a potent fungicidal activity against a wide range of fungi, including the majority of dermatophytes, yeasts (e.g. *Malassezia*) *Penicillium spp* and *Aspergillus spp*, where the in vitro destruction rate is reported to be 100%. It is very effective against spores and mycelia of *Microsporium canis*.

The effects of enilconazole are the irreversible degenerative changes to the fungal cell membrane in all stages of fungal development. This is achieved by direct contact and also by the vapour phase of enilconazole.



*Microsporium canis*

A specific formulation has been developed for the application of enilconazole for topical treatment for dogs, cattle (some countries), horses and the extra-label on cats as a 10% concentrate which is applied as a 0.2% (1:50 diluted with tap water). Animals are either bathed or sprayed with the diluted solution – not only the affected lesions, but the entire coat. Treatment schedules in dogs and cats consist of four whole-body applications at 3-4 day intervals. It should not be rinsed off the hair coat. It is highly active against dermatophytes and *Malassezia* and is well tolerated.

The successful treatment with the diluted emulsion has been reported in cats. One study showed that 0.2% enilconazole used twice weekly for 8 weeks was effective against *M. canis* in 14 Persian cats. No side effect issues were reported. It is used at the same dilution for sinus irrigation in dogs with nasal aspergillosis.

Enilconazole is indicated for use as an antimycotic for the disinfection of rooms, kennels, catteries and equipment. It may be vaporised in rooms or buildings, or sprayed onto surfaces. The fumigation with enilconazole reduced *M. canis* spores by 80-100% on surfaces where an infected cat was living (Symoen et.al 1989). A study in three catteries with 18, 10 or 8 infected cats where scrubbing and disinfection with enilconazole resulted in negative samples (Palsson 1991)<sup>3</sup>.

### Decontamination of the environment is a very important part of the control of *Microsporium canis* feline dermatophytosis<sup>3</sup>

There are a very limited number of chemical agents that can reach complete effectiveness against *M. canis* environmental contamination. A number of commonly used disinfectants have been shown to be relatively ineffective against dermatophytes.

The compounds recommended for environmental control of *M. canis* include chlorine-based compounds, enilconazole and lime sulphur<sup>3</sup>.

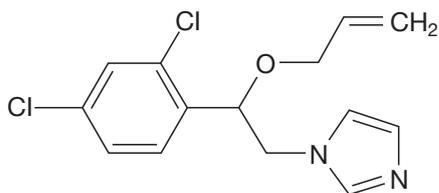
## Kennel disinfectants for *Microsporium canis* and *Trichophyton spp.*

The antifungal efficacy of commonly used kennel disinfectants for large surfaces was tested using naturally infective material from untreated animals (*M. canis* and *Trichophyton spp.*) soaked and macerated but unfiltered leaving visible fluorescing hairs and/or scales in the test inoculum to create a robust challenge. Disinfectants included sodium hypochlorite (1:32 and 1:100), enilconazole (1:100), accelerated hydrogen peroxide (1:16), potassium peroxymonosulfate (1% and 2%), and calcium hypochlorite "dry bleach."

Disinfectants were tested at a 1:10, 1:5, and 1:1 dilution of test inoculum to disinfectant with a 10 minute contact time. Good efficacy was defined as a disinfectant resulting in no growth. Control plates grew >300 colonies of each pathogen per plate. Enilconazole, sodium hypochlorite (all dilutions), accelerated hydrogen peroxide, and 2% potassium peroxymonosulfate (but not 1%) inhibited all growth of both pathogens at 1:10, 1:5, and 1:1 dilutions. Calcium hypochlorites showed no antifungal efficacy (>300 colonies per plate). **Enilconazole (1:100)**, sodium hypochlorite (1:32 or 1:100), accelerated hydrogen peroxide (1:16), and 2% potassium peroxymonosulfate are recommended for decontamination of kennels exposed to dermatophyte pathogens.

Karen A. Moriello, Department of Medical Sciences, School of Veterinary Medicine, University of Wisconsin – Madison, 2015 Linden Drive West, Madison, WI 53706, USA.

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## Enilconazole

The importance of both an effective fungicidal treatment for the dermatophyte infected animals and its dermatophyte contaminated environment is essential if the infection is to be resolved.

Austrazole™ Topical fungicide for dogs and horses; 100 mg/mL enilconazole is for both treatment of the infected animal and to decontaminate the animal's environment of spores. It is used at the same dilution for both uses.

Spray applicators to treat the animal's environment/habitat to eliminate fungal spores and yeasts.



500 mL spray bottle



5 Lt pressure spray pack

1. QUAIFFE, R.A.; WOMAR, S.M. *Microsporium canis* isolations from show cats. **Veterinary Record**, v.110, n. 14, p.333-4, 1992.
2. Mycopathologia. 2008 Nov-Dec; 166(5-6): 335-52. doi: 10.1007/s11046-008-9100-9. Epub 2008 May 14.
3. Papini R; *Microsporium canis* – A pathogen of cats and its control through environmental management: A review.

## ABRIDGED PRODUCT INFORMATION

### Austrazole™

### Topical fungicide for dogs and horses

#### ACTIVE CONSTITUENT:

Enilconazole 100 mg/mL

#### PROPERTIES

Enilconazole is an imidazole with potent antifungal activity applied topically for the treatment of dermatophytosis and aspergillosis. It has been used safely in cats, dogs, cattle, horses, and chickens<sup>1</sup>.

1. The Merck Veterinary Manual; 2009–2015.

#### INDICATIONS

For control of ringworm (*Microsporium spp.* and *Trichophyton spp.*) and other forms of dermatomycosis in horses and dogs. A product containing Enilconazole 100 mg/mL is registered in France for use on cats for treatment of ringworm.

#### DIRECTIONS FOR USE

Enilconazole is a synthetic antimycotic with potent antifungal actions against dermatophytes.

#### DOSAGE AND ADMINISTRATION

See bottle label/pack or insert for complete dosage instructions.

#### MEAT WITHHOLDING PERIOD (HORSES)

**DO NOT USE** less than 28 days before slaughter for human consumption.

#### SAFETY DIRECTIONS

Avoid contact with eyes and skin. When preparing wash or spray wear face shield or goggles. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash face shield or goggles.

#### FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126.

#### DISPOSAL

Dispose of empty container by wrapping with paper and putting in garbage.

#### STORAGE

Store below 30°C (room temperature). Protect from light.

#### PRESENTATION

Bottles of 50 mL, 100 mL and 1 Litre.

APVMA Approval No.: 70030/62332

# ausrichter

Ausrichter Pty Ltd  
ABN 79 000 908 529

2/21 Chester Street, Camperdown NSW 2050

Telephone: (02) 9517 1166

Fax: (02) 9516 5810

Email: info@ausrichter.com

Animal Health Products

www.ausrichter.com