

Efficacy of eight commercial disinfectants against *Microsporum canis* and *Trichophyton spp*: infective spores on an experimentally contaminated textile surface

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ABSTRACT

Dermatophytosis (ringworm), a highly contagious skin infection, is caused by fungus leading to a circular rash on animals and humans. Due to the highly contagious nature of dermatophytosis, proper disinfection of affected surfaces is essential. This study considers a relatively new yet proven chemistry, broadly used in healthcare facilities, known as Accelerated Hydrogen Peroxide[®] (AHP[®]), in contrast with current chemistries that have known shortcomings.

BACKGROUND

An essential step of dermatophytosis treatment, is the removal of infected material and decontamination of the environment. These surfaces are decontaminated only through the use of a disinfectant. Sodium hypochlorite is a commonly recommended disinfectant for environmental decontamination of surfaces exposed to dermatophyte spores. However, it is widely known that bleach can degrade if not used by the expiry date, impacting efficacy and needs to be freshly prepared before each use. Further, bleach requires the use of personal protective equipment as it can cause damage to the skin and eyes and has corrosive properties that can cause damage to fabrics and surfaces. With all the concerns regarding bleach, an alternative safer, ready-to-use disinfectant, is often sought after.

STUDY

The objective of this study was to determine whether over-the-counter products, particularly ready-to-use formulations, with a label claim as fungicidal, are effective against *Microsporum* or *Trichophyton* spores isolated from cat hair. Eight commercial disinfectants, including Accel TB (0.5% Accelerated Hydrogen Peroxide), were tested for fungicidal efficacy using three different trials and a 10 minute contact time. The test used a standard 1:10 spore dilution suspension test, 1 and 5mL of disinfectant solution applied to contaminated gauze fabric. To simulate at home use, one and five sprays of disinfectant were applied to the contaminated gauze. Good efficacy of a product was determined by whether or not dermatophytosis growth was inhibited on the fabric samples.

RESULTS

Although all 8 products showed inhibition of dermatophytosis growth after 5 sprays of disinfectant, only 4 products were able to inhibit growth with only 1 spray of disinfectant including: sodium hypochlorite 1:10ppm, quaternary ammonium 0.3%, sodium hypochlorite 1.84%, lactic acid 3.2% and Accel TB (Accelerated hydrogen peroxide 0.5%).

CONCLUSION

Following the removal of infective material, using a

disinfectant such as Accel TB proved to be an effective alternative to sodium hypochlorite in the inhibition of dermatophytosis. Products like those tested in the study, should be considered to avoid common problems associated with sodium hypochlorite.

REFERENCE

*Moriello, K., Kunder, D. & Hondzo, H. (2013). Efficacy of eight commercial disinfectants against *Microsporum canis* and *Trichophyton spp.* infective spores on an experimentally contaminated textile surface. *Veterinary Dermatology*, Volume 25, Issue 3, pg 191-e48*

