Creating a biosecurity plan is good business

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ABSTRACT

Biosecurity is an essential part of animal care in preventing and/or minimizing the spread of contagious infectious diseases. Disinfectants are one facet of infection control and their use to prevent and control pathogenic microorganisms is well accepted. However, there is increasing concern regarding user, animal, and environmental safety for some commonly used disinfectants, and evidence of cross-resistance between disinfectants and antibiotics. Furthermore, there is also emerging evidence of bacterial resistance to some disinfectants. Therefore, it is important to understand the need to developing a proper biosecurity plan and to select disinfectants with a reduced potential for cross-bacterial resistance and a high level of safety and efficacy. Accelerated Hydrogen Peroxide® (AHP®) is a relatively new yet proven chemistry broadly used across a multitude of markets and industries known for its exceptional safety profile and microbicidal efficacy.

BAKGROUND

The activity of disinfectants varies according to the type of microorganism. Organic material and other residues can have an effect on the activity of disinfectants. Additionally, surface type can also have a positive or negative effect on the disinfection process and some surfaces are not receptive to disinfection (i.e. dirt floor). Some disinfectants can have corrosive or damaging effects on the surfaces they are applied on. In some cases efficacy testing does not match the real world field situations, especially in farm animal environments. For all these reasons, proper disinfectant selection should be an important part of the decision-making process when biosecurity protocols are put into place, and not just based on cost or tradition.

TRADITIONAL DISINFECTANTS

There are many traditional disinfectant chemistries available to consumers, but most come with shortcomings. Quaternary ammonium compounds and phenols are commonly used in health care and veterinary settings; however these disinfectants are not effective against Clostridium difficile or have erratic efficacy against non-enveloped viruses such as parvovirus Furthermore, chemistries such as sodium hypochlorite, quaternary ammonium, chlorine gas, and glutaraldehyde have shown to cause occupational illness, including skin irritation and occupational asthma and rhinitis. There is also increasing concern about residues and their long-term environmental impact, especially on surface and ground water. Exposure to quaternary ammonium has been shown to increase co-selection of antibiotic resistance within environmental bacteria. Below is a summary of the advantages and disadvantages of commonly used disinfectant chemistries:

CONCLUSION

The limited prospect for newer, safer, and affordable antimicrobials and vaccines to cure and prevent disease, along with the emergence of multi-resistant microbes, makes biosecurity strategies paramount. The development of rational approaches for the selection and use of disinfectants will optimize their application, improve safety for humans and animals, and reduce the discharge of potentially harmful chemicals into the environment. Biosecurity protocols need to be tailored to each individual practice, adopting and implementing

common factors such as surveillance, personnel training and education, leadership involvement, control of direct and indirect contact, and optimizing personal and environmental hygiene.

REFERENCE

Pantaleon, L. Creating a biosecurity plan is good business. Canadian Vet. September/October 2015. Volume 10, No.5