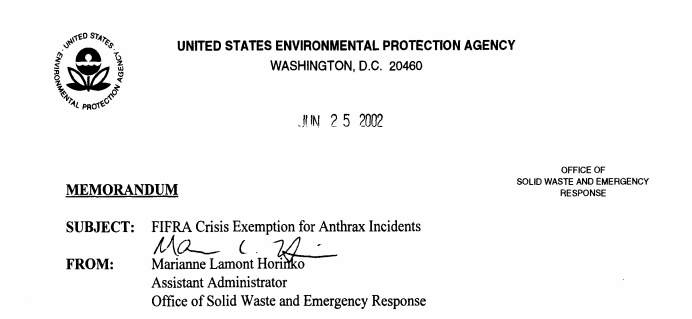
SOLUTIONS

Volume 1, Issue 2
Oct , 2002

Accelerated hydrogen peroxide Receives Emergency Approval against Anthrax

With recent events in North America, the Environmental Protection Agency (EPA) was searching for effective decontamination options for anthrax incidents. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) has a provision for emergency approvals of disinfecting products. Under Section 18 of FIFRA, EPA can exempt a State or Federal Agency from the provisions of FIFRA and thereby allow the sale, distribution, and use of an unregistered pesticide for a limited time if the Administrator determines that emergency conditions require such exemption. Before approving an emergency exemption request, EPA performs a multi-disciplinary risk assessment of the requested use, relying largely on data that have already been reviewed for the pesticide. If the emergency appears valid and the risks are acceptable, EPA approves the emergency exemption request. EPA will deny an exemption request if, among other things, the pesticide use may cause unreasonable adverse effects on the environment, including human health.

Current options for such incidents are bleach, peroxyacetic acid and chlorine dioxide, among others. Practical issues with the use of these actives are, corrosivity, health and safety issues and requirements for ideal environmental conditions for use (specifically with chorine dioxide). Virox Technologies, in partnership with JohnsonDiversey, presented the EPA with an Accelerated Hydrogen Peroxide (AHP) solution that demonstrated germicidal efficacy against the anthrax spore in a fast contact time of 15 min. The AHP solution provided to the EPA is the only option that is strictly hydrogen peroxide based. It is available in the USA under the brand STF. STF provides emergency response personnel with an effective decontamination option that delivers a realistic contact time with excellent material compatibility health,& safety and environmental profiles. Information on the use of STF are available on the EPA's biological threat web site http://www.epa.gov/pesticides/factsheets/hydrogenperoxide_peroxyaceticacid_factsheet.htm



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 25 2002

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: FIFRA Crisis Exemption for Anthrax Incidents

FROM: Marianne Lamont Horinko
Assistant Administrator
Office of Solid Waste and Emergency Response

Inside this issue:

Special points of interest:

- What is the QCT?
- Reprocessing Medical Devices –An Expert's View
- AHP v.s Norwalk
- CREM—Virox's testing partner

Why the Quantitative Carrier test?

Virox Technologies believes in delivering infection control solutions that are effective and provide the end users with germicidal data they can trust. When Virox created Accelerated Hydrogen Peroxide, we evaluated the currently accepted methodologies for generating germicidal efficacy for government registrations. The accepted methods are based upon the Association of Official Analytical Chemists (AOAC) standards set out some 30 years ago. Virox was also aware of the work being done by Dr Syed Sattar and the Centre for Research on Environmental Microbiology (CREM) at the University of Ottawa. Dr Syed Sattar has developed a new testing methodology called the Quantitative Carrier Test (QCT). Virox chose to utilize this new methodology to generate it's germicidal data for Canadian government registrations. Why? The answer is clear. The QCT is positioned to become the new global standard for germicidal data generation. To understand the QCT and it's future role in germicidal testing one must understand its development. In October of 1990 the United States General Accounting Office issued a report to the US congress titled "*EPA Lacks Assurance That Disinfectants Kill Germs" (available at* **http://161.203.16.4/d48t13/142318.pdf)** This report highlights concerns over the use of and reliance on the AOAC testing methods for registering products in the USA. The reasons for this concern were based upon recognised deficiencies in the AOAC tests and how they might provide data that was not reliable. One outcome of this report was that a new testing methodology must be created to bring back confidence in the registered products sold to the marketplace. The EPA commissioned several labs to develop a new test to deal with the current deficiencies. The current AOAC testing methods have various deficiencies in their design including:

- Diluent & Soil load not specified
- 'Official' status revoked for some
- Contact time too long
- Inappropriate surrogates
- Diluent not standardized
- Soil load may not be used
- Neutralizers inappropriate
- Labour-intensive
- Lack of quantitation & reproducibility.

CREM was successful in the development of a better method with the QCT. The QCT effectively addresses concerns with the AOAC tests. Some of the features of the QCT test are:

- Fully quantitative with no organism wash-off
- Delivery of precise volumes of challenge organism(s) & test formulation
- High degree of reproducibility
- A 'universal' three-component soil load
- Filtration reduces reliance on neutralizers
- Fewer test/control carriers than in the AOAC test.

The QCT test has become a American Society for Testing Materials (ASTM) standard #E-2111 and #E-2197 and is currently being reviewed by the EPA. Virox Technologies is pleased to see that the QCT test is quickly becoming recognised as a viable alternative to the AOAC methods. Decision makers can also feel confident that Virox products are meeting the needs of the 21st century by using more stringent testing methodologies for germicidal data generation.

VIROX PATRON MEMBER SCHOLARSHIP FUND

Virox Technologies Inc. is committed to furthering educational opportunities for the Infection Control Professional (ICP) in Canada.

The Community and Hospitals Infection Control Association – Canada (CHICA-Canada) National Education Conference is an excellent opportunity to bring ICPs together in a forum of learning.

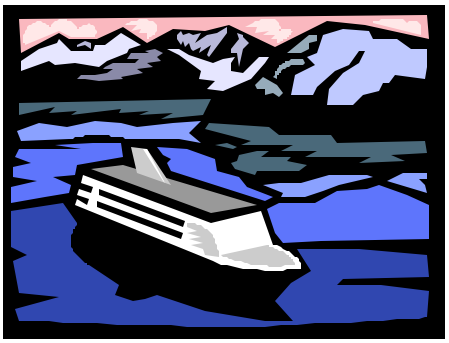
The Virox Patron Membership National Conference Scholarship Program is intended to provide financial assistance to eligible ICPs to attend the annual National Conference of CHICA-Canada.

With the introduction of this scholarship Virox Technologies Inc. is making available up to $2000.00 to each recipient for the reimbursement of eligible costs related to the participation at the CHICA-Canada National Conference

For further information and application form, contact your local CHICA chapter or visit www.viroxtech.com

AHP successful against Norwalk outbreak

The cruise industry is faced with various infectious disease issues. Ships dock at various ports, and many of the passengers are elderly and therefore more susceptible to pathogens. One particular pathogen of concern is the Norwalk virus. Norwalk is a non-enveloped virus that has a high resistance to chemical germicides. The virus also is transmitted by various routes such as contact, airborne, and common sources such as food and water. Given the highly contagious nature of this pathogen and the restricted space a cruise ship provides illness can overwhelm a ship with devastating speed. Health Canada has always recommended the use of a 1:10 bleach solution to decontaminate surfaces suspected of having Norwalk. This has been a troublesome approach dealing with the virus on cruise ships for several reasons, including material compatibility and health and safety.



In August Health Canada approved the use of AHP as an alternative for the decontamination of surfaces in a Norwalk virus outbreak. This allowed the ship's staff to decontaminate surfaces safely that would have been otherwise damaged by using a bleach solution. AHP was used to clean and disinfect every inch of the ship's 735 linear feet, including the deck and all 950 rooms. It was successful in helping prevent any further cases of this virus. This is another example of the strength of AHP as an alternative to bleach.

Reprocessing Medical Devices —An Expert's View

Virox Technologies, Maunco, JohnsonDiversey and The Centre for Research on Environmental Microbiology (CREM) are pleased to present the next session in the **Art of Infection Control Teleclass Series**. Dec 5's guest speaker is Dr. Michelle Alfa. The topic is Reprocessing Medical Devices –An Expert's View. Is there a problem with the cleaning and sterilization of medical devices? Are the current methods of disinfection and sterilization adequate for the complexity of modern medical equipment? Are there options? This teleclass will discuss reprocessing of many common and intricate medical devices with particular attention on narrow lumen devices. At the end of the teleclass participants should be able to, describe the problems associated with cleaning of narrow lumen medical devices, discuss the pros and cons of manual versus automated cleaning of these devices, describe the infection transmission risks associated with improper cleaning of medical devices, and should be able to discuss the critical issues to consider when evaluating publications related to cleaning validation of medical devices. Dr. Michelle Alfa, Ph.D., FCCM is the Assistant Director of the Microbiology Lab at St. Boniface General Hospital in Manitoba, Canada. Dr. Alfa is an outstanding communicator and has twice received the Outstanding Teacher Award from the University of Manitoba Medical Students' Association. She is a Board Member of the American Board of Medical Microbiology, and Past President of the Canadian College of Microbiologists. Dr. Alfa's experience and credentials are extensive and she has spoken on the topic of reprocessing at conferences in Canada, the US, Chile, Malaysia, Spain and Australia among others. Dr. Alfa will address the topic from a practical, front-line point of view. Question-and-answer time will be a key component of the teleclass and participants are welcome to ask their questions during the teleclass, or by e-mailing them in advance. You are welcome and encouraged to gather as many colleagues as you wish for the teleclass without extra charge. Tape recording of the teleclass is also encouraged.

For more information visit www.viroxtech.com

JohnsonDiversey
Clean is just the beginning

ACCELERATED™ HYDROGEN PEROXIDE

CREM

Decontaminating C. difficile with AHP

Clostridium difficile (C.Diff) is a spore-forming bacteria and is, therefore, extremely resistant to environmental conditions and chemical germicides. When decontaminating environmental surfaces it is necessary for one to realize that an environmental surface may harbour a number of microorganisms, ranging from vegetative bacteria to spores. It is also necessary to realize that the inanimate environment is seldom directly responsible for disease, but inanimate objects may act as fomites and serve as a vehicle for transmission either by contaminating the hands of health care workers or by contact with medical equipment. Therefore, proper cleaning of inanimate objects is the key to reducing the transmission of pathogenic microorganisms, such as *C.Diff*. Spores and the vegetative state of the bacteria, have been recovered from hospital toilets, commodes, metal bedpans, and floors. Capable of causing infection, they can exist for months on environmental surfaces.

Many current practices for dealing with *C Diff* rooms utilize a two step process of first cleaning the environmental surface with a low level disinfectant then following up with a mixed solution of household bleach (1:10 or 5000 ppm active). Chlorine based solutions like Sodium Hypochlorite that deliver 5000ppm of free chlorine have sporicidal activity but would would require a significant contact time to achieve a 6-log reduction on a hard surface. Spread of this organism is predominantly through an oral-fecal route. Fecal matter can be a difficult soil to clean. If not done properly (you don't always see soil) the remaining matter can act to neutralize the germicidal activity of bleach or protect microbes. There are a number of facilities that are taking a new approach to the containment and control of *C.Diff on environmental surfaces.* The focus is to utilize Accelerated Hydrogen Peroxide (AHP) that combines rapid germicidal activity against vegetative bacteria and excellent cleaning performance to physically remove any potential spores and fecal contaminants. The procedure remains similar to the current double clean protocol. Additional considerations and opportunities for improvement are to empower patients to practice clean up around the bathroom utilizing a pre-moistened cloth of AHP Wipes. (along with washing hands). Utilizing AHP for *C Diff* cases has been observed to greatly assist in the containment of this particulate organism through rapid bacterial germicidal activity and excellent physical removal of organic material including potential spores.

Virox Germicidal Testing Partner—CREM

WHAT IS CREM?

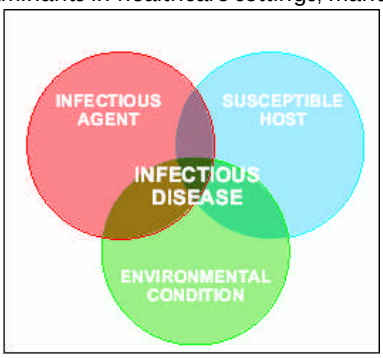
The Centre for Research on Environmental Microbiology (CREM) conducts research on all aspects of human health-related environmental microbiology. In particular, it investigates factors that influence the fate of microbial pathogens in the environment and the potential of various vehicles for spreading infections.

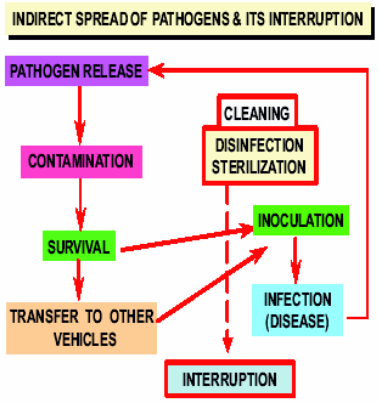
CREM offers:

- qualified and experienced personnel
- fully equipped laboratories
- method development
- fully documented protocols
- quality assurance and
- a research & testing environment for: enteric and respiratory viruses, mycobacteria, vegetative bacteria including *Legionella,* bacterial spores, fungi, *cryptosporidium* and *Giardia* spp.

MICROBIAL CONTROL

Research on cleaning, disinfection and sterilization to control microbial contaminants in healthcare settings, manufacturing establishments and service facilities is a key focus of CREM's activities.





Quantitative methods developed at CREM to assess the germicidal activities of chemicals form the basis for several national and international standards. Investigations at CREM have also led to the introduction of standardized protocols to evaluate the role of chemical germicides in interrupting the spread of infections in institutional and domestic settings.

Core Competencies:

Fundamental and applied research:

Independently, or in conjunction with academic, industrial or government partners, CREM sets out to understand the fate and control of human pathogens in air, water, soil or indoor environments, as well as their interactions with microbial communities and their response to stressors.

Advisory and consulting services:

To governments, research foundations, hospitals and industry.

Training in laboratory techniques:

Provides hands-on training in quantitative microbiology for research on pathogens in the environment, and use of indicators in evaluating means for microbial control and sterilization.

State-of-the-art reviews:

Critical reviews of published literature on emerging or controversial issues in environmental microbiology.

Professional development courses:

In biosafety, environmental control, germicide test methodologies, and sterilization

Organization of lectures and symposia:

On topics of current and emerging interest in environmental microbiology.

Tele-lectures

In collaboration with industrial partners, CREM offers a series of tele-lectures on topics related to infection control.

For more information please contact:

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VIROX SIGNS NEW DISTRIBUTORS FOR ACCEL LINE OF PRODUCTS

Medical, Laboratory, Biotech, Dental, and Specialty Market Applications:

Recently, Virox Technologies introduced a new line of Accelerated Hydrogen Peroxide (AHP) products called 'Accel' developed specifically for medical applications and higher risk areas such as Instrument Re-processing, Operating Rooms, Hemodialysis, ICU, Burn Centres, Research labs and Biotech to name but a few. We are pleased to announce that a number of new Distributors have been established coast-to-coast to represent this line of Surface Disinfectants and Cleaners, Non-Enzymatic Instrument Cleaners, and High Level Disinfectants and Chemosterilants. For contact information on these distributors please visit our website at www.viroxtech.com.

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