

According to Dr. Kate Hurley, DVM, PVM. Program Director Shelter Medicine, UC, Davis.

**QUATERNARY AMMONIUM COMPOUNDS (QAC's) ARE NOT RELIABLE AGAINST PARVO AND PANLEUKOPENIA. INEFFECTIVE TO PARTIALLY EFFECTIVE AGAINST CALICIVIRUS.**

Studies in 1980, 1995 and 2002 found QAC labeled for use against unenveloped viruses such as Parvo less effective than the label claimed.

Kate Hurley, DVM, PVM. Program Director Shelter Medicine, UC, Davis. 2008

**THE USE OF QUATERNARY AMMONIUM COMPOUNDS IN ANIMAL FACILITIES.**

By, Robert J. Saldivar MS, Animal Science, Sanitation Specialist, Texas A&M University 1958

The "QUATS" or QAC's were for many years, the most popular of all classes of disinfectants, primarily because of their blandness and low cost. In the laboratory, they appeared to be rapidly acting germicides against test bacteria in vitro, but under ordinary conditions of use, their germicidal action is somewhat questionable. The cost of the new "quats" is not cheap any more. QAC are compounds containing ammonium read the label.

QACs are not compatible with soaps or anionic detergents, activity declines in the presence of "hard water" and effectiveness is greatly reduced by organic matter such as exudates, bold, serums, feces and milk.

Quaternary ammonium compounds have a limited antimicrobial spectrum, they leave an oily film under which bacteria can thrive.

Their antiviral activity is confined to enveloped virus and they are, therefore, considered unreliable virucides. Parvo is an unenveloped virus. They are not mycobactericidal.

This group of disinfectants is useful in **cleaning surfaces**, but because of their incompatibility with soaps and anionic detergents, surfaces on which they are used should be chemically and organically clean.

**Some bacteria are known to thrive in "quat" solutions.**

**REFERENCES**

1. -Patrick J. Quinn and Bryan K. Markey. In: Block SS, ed. *Disinfection and Disease Prevention in Veterinary Medicine*, 5th ed. Philadelphia Lippincott Williams & Wilkins, 2001
2. - Martin S. Favero and Walter W. Bond. In: Block SS, ed. *Chemical Disinfection*, 5th ed. Philadelphia Lippincott Williams & Wilkins, 2001

**Virucidal Efficacy of Four New Disinfectants**

From the Department of Comparative Medicine, College of Veterinary Medicine, University of Tennessee, P.O. Box 1071, Knoxville, Tennessee 37901-1071

Journal of the American Animal Hospital Association 2002; 38:231-234.

Virucidal efficacy was evaluated for four recently available disinfectants: chlorine dioxide, potassium peroxymonosulfate, a quaternary ammonium compound (QAC) sometimes called (QATS), and citricidal (grapefruit extract). A fresh hypochlorite solution and tap water were used as positive and negative controls respectively. Feline herpesvirus, feline calicivirus, and canine parvovirus were exposed to the manufacturers' recommended dilutions of the evaluated disinfectants. Both chlorine dioxide and potassium peroxymonosulfate completely inactivated the three viruses used in this study. These disinfectants can aid in controlling nosocomial transmission of viruses. The quaternary ammonium compound evaluated in this study and citricidal were not effective against feline calicivirus and canine

## "Virucidal Efficacy of the Newer Quaternary Ammonium Compounds."

Kennedy, M. A., V. S. Mellon, et al. (1995).  
Journal of the American Animal Hospital Association 31(3): 254-8.

The virucidal activity of several disinfectants containing newer generation quaternary ammonium compounds (QAC) as their active ingredients was evaluated.

Disinfectants were used at the manufacturers' recommended dilutions with isolates of feline herpesvirus, feline calicivirus, and canine parvovirus, and a contact time of **10 minutes** at room temperature.

Detoxification of virus/disinfectant solutions was done by dialysis prior to virus assay in cell cultures. Two of four disinfectants completely inactivated feline herpesvirus, and two significantly reduced the titer of this virus. None of the disinfectants that were tested completely inactivated feline calicivirus

**Canine parvovirus was not inactivated significantly by any of the QAC disinfectants.**

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## BCH-3010 3 Disinfectants and Disinfection: A Guide to Reducing Disease Buildup

Jack Gaskin, Veterinary Virologist, University of Florida. G.W. Meyerholz, Extension Veterinarian University of Florida.

Surfactants (surface-active agents) are chemical compounds that lower the surface tension of aqueous solutions and thus promote wetting.

**Quaternary Ammonium Compounds** commonly called QAC or "QATS" are surfactants commonly used as general antibacterial disinfectants of dairy, meat packing and food handling equipment. **They do not possess substantial virucidal**, fungicidal, or sporicidal action and are chiefly used as sanitizers for eating, drinking, and dairy utensils after mechanical cleaning. These compounds are not suitable for disinfection of premises since they are readily inactivated by organic matter such as exudates, serum, blood, feces and milk and also form a film that may **harbor** organisms under it. They are also neutralized by soaps hard water and anionic detergents, surfaces on which they are used must be chemically clean.<sup>1</sup>

<sup>1</sup> George R. Dychdala. Chlorine and Chlorine Compounds. In: Block SS, ed. *Disinfection, Sterilization, and Preservation*, 5th ed. Philadelphia Lippincott Williams & Wilkins, 2001. 1069-1100

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**EXAMPLES OF QAC ARE PARVOSOL, KENNEL KARE, KENNELSOL, LEMON 256, TRIPLE TWO, ROCCAL, ODOR BAN AND OTHERS LOCALLY AND NATIONALLY MIXED.**

**If you are not sure you are using a QAC, read the ingredient label, and if it says ammonium it is a QUC**

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