



Science at Your Doorstep

## WHICH DISINFECTANTS WORK BEST AGAINST C. DIFFICILE?

### Summary:

In healthcare facilities, Clostridium difficile infections spread by transmission of bacterial spores. Appropriate sporicidal disinfectants are needed to prevent development of clusters and outbreaks. In this study, researchers in The Netherlands compared the effectiveness of 4 different disinfectant classes on killing distinctive C. difficile spores. They published their results in the respected journal, ***Antimicrobial Resistance & Infection Control***. Hydrogen peroxide disinfectant wipes showed the highest bactericidal activity.

### Publication Description:

According to the study, a dilution of sodium hypochlorite (chlorine bleach) has historically been used in hospitals to disinfect areas contaminated with C. difficile spores.

But the authors state that “hypochlorite has to be used in excessive concentrations to be effective, thereby increasing its toxic and corrosive properties.”

So the authors searched for alternative disinfectant types to eliminate C. difficile spores.

The 4 different disinfectant compounds tested were:

1. Glucoprotamin
2. Hydrogen peroxide
3. Ethanol/propane/amino propyl glycine
4. Didecyldimonium chloride/benzalkonium chloride/biguanide (quat)

Tiles were contaminated with a solution containing  $5 \times 10^6$  CFU/ml spores of C. difficile. The tiles were left to dry for an hour and then wiped or sprayed with one of the sprays or wipes as intended by the manufacturers. After 5 minutes, microbiological cultures were performed.

### Conclusion:

The authors concluded that for each active ingredient, the wipes performed better than the sprays.

In general, impregnated cleaning/disinfection wipes performed better than ready-to-use sprays. Wipes with hydrogen peroxide showed the highest bactericidal activity.

### Reference:

See article at: *Antimicrobial Resistance & Infection Control*; Volume 6, No. 54, 2017; N Kenters, EGW Huijskens, SCJ de Wit, IGJM Sanders, J van Rosmalen, EJ Kuijper and A Voss.