

Evaluation Of the survival Of vancomycin-resistant enterococci (VRE) isolated from chickens and possible inactivation by in-use concentration Of Lindores®, Ecos Timsen® and Omnicide®.

Abstract

Vancomycin-resistant enterococci (VRE) are well-known ascendant nosocomial pathogens. The recent detection of epidemiologic strain carrying vanA gene in the community of people working with animals and in chickens has brought to the forefront the potential public health danger posed by these organism. The farm environment is a major source of VRE persistence in poultry farms. We carried out survival test to test the survival of the VRE isolates on dry condition and surface test to evaluate the inactivation of the isolates by in-use concentration of commonly used disinfectants. In the survival test, all isolates survived for at least 4 weeks in colony counts of ($1.00 \times 10^3 - 3.86 \times 10^3$ CFU/ml) under clean condition and ($1.00 \times 10^3 - 2.02 \times 10^4$) for soiled condition. Those that were suspended in 5% BSA solution to mimic organic matter load as obtainable on farms survived for at least 8 weeks at ($1.54 \times 10^2 - 1.34 \times 10^3$ CFU/ml). In the surface test, inactivation of VRE isolates by in-use concentration of Lindores, Omnicide and Ecos Timsen was tested using the European surface test (EST). All the tested disinfectants were active against the VRE isolates on both the standard test surface (stainless steel) and our test surface (wooden). The results shows microbiocidal effects (ME) for test disinfectants, i.e. the log₁₀ CFU of micro-organisms compared between test biocide and control treated with distilled water, after 7 min of exposure as follows; Lindores® active on both surfaces 5.24 and 3.17, Ecos Timsen® active significantly on steel 4.90 than wood 2.98 and Omnicide® significantly less active on stainless steel 2.40 than on wood 3.50.

Keyword: VRE; Disinfectants; Chickens; Microbiocidal effect; Survival; European surface test.