

STUDIES ON ALTERNATIVE TEST PARAMETERS FOR VIRUCIDAL TESTING OF CHEMICAL DISINFECTANTS ACCORDING TO THE GUIDELINES OF THE GERMAN VETERINARY ASSOCIATION (DVG)

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SUMMARY

The testing of chemical disinfectants in animal husbandry and food hygiene is an important contribution to control the spread of epidemic diseases and to ensure consumer protection. In Germany testing is carried out according to the guidelines of the German Veterinary Society (Deutsche Veterinärmedizinische Gesellschaft e.V., DVG). Virucidal testing is only required for animal husbandry, not yet in food hygiene. The current DVG guidelines are not in accordance with the European guidelines (CEN) which among other differences require testing at temperatures of 10° and 20°C.

The aim of the study was to examine in suspension tests whether the test temperature has a significant influence on virus inactivation. The existing guideline also recommends assessing the impact of a defined amount of protein on virus inactivation. Therefore, the influence of protein contamination was compared to the impact of a decreased testing temperature. By analysing five commercial disinfectants and eight viruses [vaccine virus, Newcastle disease virus (NDV), reovirus, ECBO virus, ECHO virus, feline panleukopenia virus (FPV), feline calicivirus (FCV) and bovine viral diarrhoea virus (BVDV)] the impact of the protein contamination had a similar impact as the temperature (62% versus 42% of the samples tested differently at the respective settings).

Another issue that was addressed in this study was to examine other viruses as potential model viruses for disinfectant testing. The currently used viruses (ECBO virus, reovirus, NDV, and vaccine virus) were compared to ECHO virus and FPV, as potential alternative viruses for ECBO virus, or compared to BVDV and feline herpesvirus as potential alternatives to NDV, or compared to FCV as a potential alternative to reovirus. The main criterion was resistance to five commercially available disinfectants based on the main classes of chemical disinfectants, i.e., peracetic acid, aldehydes, Quats, organic acid.

ECHO virus was shown to be more resistant than ECBO virus or FPV, and BVDV was more resistant than NDV and FHV. As BVDV is much easier to handle, this virus would be a very interesting alternative to replace NDV which needs to be propagated in eggs. FCV was found to display a very similar tenacity than reovirus and may be considered as a valuable test virus once virucidal testing is implemented also for testing disinfectants for use in food hygiene.