

Title: Investigating Sanitation of Surface Water for Poultry using Chlorine-IBDV Models

AECL Project No: UM-51A

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Summary

Significant numbers of commercial poultry production sites in Australia rely on surface waters (dams, creeks and rivers) as their major source of drinking water. Exposure of surface water to wild birds can pose disease risks from serious avian pathogens to commercial flocks meaning risk assessment for biosecurity is crucial.

Exposure of surface water sources to wild waterfowl allows contamination by infectious agents and can include significant pathogens such as Avian Influenza, Newcastle Disease Virus, Egg Drop Syndrome and Infectious Bursal Disease Virus (IBDV) as well as a number of other microorganisms including enteric bacteria and viruses.

In the majority of cases, water is treated through the simple addition of chlorine. While this is a relatively economical process, no data (worldwide) is available to indicate the likely efficiency of chlorine for the removal of viral poultry pathogens.

Using a laboratory-based assay method, different concentrations of chlorine were measured for effectiveness against the addition of IBDV and monitored over exposure periods. IBDV was chosen for measurement due to its physio-chemical characteristics as the most resistant of the avian pathogens to inactivation by disinfectant.

The results indicated that chlorination is the most appropriate technology for poultry sites if effective treatment can be assured.

While the authors of this report suggest that further experimentation of the effectiveness of chlorine treatment need to be conducted, it is recommended that effective viral decontamination of surface water, using simple treatment, can be undertaken reliably and economically on poultry farms and can ultimately remove a significant "weak spot" for entry of potentially pathogenic viral infections into flocks.
