

Protecting Animals In The Food  
Supply From Unhealthy Exposure

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# AQUAGUARD

## Liquid

### AquaGuard Time to Kill Determination

ASP recently released research that shows adding 2500 ppm AquaGuard in animal drinking water (2.5 liters of AquaGuard in each 1000 liters of contaminated water) effectively eliminates *E. Coli* O157:H7 and *Salmonella enteritidis*. AquaGuard is an organically-based water treatment produced with FDA-approved components which is perfectly suited to protecting animals in the food supply from unhealthy exposure to these bacterial contaminants.

The killing power of AquaGuard depends on the contact time with the organism; further research was conducted to ensure animal producers are armed with adequate recommendations for contact time in solution.

#### Purpose:

Determine the contact time required for AquaGuard, when used as a non-corrosive organically-based sanitizer, to effectively kill *E. Coli* O157:H7 and *Salmonella enteritidis* pathogens.

#### Materials:

AquaGuard was diluted to a concentration of 2500 ppm, a level previously determined to effectively eliminate these organisms from drinking water.

Bacterial contaminants *E. Coli* O157:H7 and *Salmonella enteritidis* were obtained from culture collection stocks for this test.

#### Methods:

Cultures of each separate pathogen were injected into tubes containing either water (serving as control to determine input quantity) or diluted AquaGuard. Triplicate tubes were prepared for each tube-incubation timepoint (0, 5, 10, 15 and 20 minutes). At the predetermined incubation times, a fixed volume from the tubes was inoculated on appropriate media plates and incubated to quantify the surviving CFU.

#### Results:

Summarized results are shown in the accompanying graphs. The half-life of *E. Coli* O157:H7 was found to be 12.5 minutes, and the half-life of *Salmonella enteritidis* was 5 minutes. Because AquaGuard is typically added to the water supply system through a proportioning pump or a header tank, such systems are expected to provide much longer contact times as the water demand slowly pulls the treated solution to the dispensing troughs, drinkers or nipples.

