

Evaluating Different Hydrogen Peroxide Products for Residuals and Efficacy over Time

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Abstract :

Four commercially available hydrogen peroxide products were tested for residuals and efficacy over time. Each product was added at the rate of 59.14, 118.28 and 177.42 ml per 3780 ml of water creating stock solutions. Test solutions that actually mimic the bird drinking rate were made from each stock solution mixing at the rate of 29.57 ml of stock solution added to 3780 ml of water. Residual activities of test solutions prepared were measured from day 0 to day 5. Forty-eight hours post treatment, a 5 ml aliquot of water with a heavy microbial load was introduced into the test solutions as challenge and microbial plating for aerobic bacteria and mold was done for zero and one hour contact times. Results of this experiment suggest that an Effective Residual Concentration (ERC) of 25-50 ppm of hydrogen peroxide in test solution starts at 59.14 ml of stock solution prepared for all products evaluated. Stabilized products stay at the higher residual level and can maintain ERC for a longer time than non-stabilized products. Significant bacterial reductions ($p < 0.05$) within an hour of contact time was achieved at the lowest concentration tested, 59.14 ml of stock solution made, for all products provided that the ERC was maintained. Higher residuals or longer contact time were required for mold control

Key Word :

Hydrogen peroxide, residuals, water, efficacy

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