



APPENDIX 3 SURFACE WATER TREATMENT

Objective: to eliminate or reduce contamination of water supplied to poultry, especially contamination by faeces from wild water birds

Water treatment checklist

Reminder—untreated drinking water should not be supplied to farmed birds. The objective of water treatment is to minimise bacteria, viruses, algae and other organisms that birds consume in their drinking water, and that they are exposed to through shed cooling systems.

Surface water provided to birds for drinking and surface water used for cooling must be treated. Wash-down water should also be treated prior to use.

All surface water that comes from sources other than the mains (e.g. from dams, rivers) should be treated on the farm before being used for poultry. Bore water should be tested and if not satisfying the water quality guidelines set out in Appendix 4 must be treated.

Chlorination

Chlorination is an excellent way to effectively treat your farm water. However, chlorination will only be effective if the water is already relatively free of organic matter and solids. Filtration of the water supply prior to chlorination will nearly always be necessary.

There are a number of different chlorination systems available to poultry farmers. These can be obtained from a range of specialist water treatment companies, pumping companies or swimming pool suppliers. Assistance with the installation, operation and maintenance of these systems is usually offered by the supplier, as are kits for monitoring chlorination levels.

To effectively treat a poultry water supply, the water must contain chlorine at a concentration of 5 ppm (or equivalent) while held for a minimum of 1 to 2 hours in a holding tank. This may require the use of a two-tank system, where water is being consumed by birds from one tank, while the other tank is refilled and stored with freshly chlorinated water until the required contact time of 1 to 2 hours has elapsed. Chlorine is more effective if the pH of the water is between 6 and 7 i.e. slightly acidic.

The chlorine concentration at the drinker must be at between 1 and 2 ppm (or equivalent) to ensure any contamination that might have occurred in the lines between the holding tank and the drinker has been effectively treated.

Water chlorination levels from drinkers in the shed should be monitored at least twice weekly to ensure the system is effectively treating the incoming water supply.



As a guide:

1. Fill the test tube with water from drinkers in the shed.
2. Insert test strip (provided in the test kit) into the test tube.
3. Compare the colour of the chlorine square on the test strip with the chlorine colour squares on the standard colour chart (provided).
4. Record the concentration level of the colour on the standard colour chart with that which most closely matches the test strip colour.
5. If the chlorine concentration is less than 2 ppm¹ or greater than 5 ppm the concentration should be rechecked in one hour. If the concentration remains outside these limits, the unit should be adjusted and the concentrations checked again in 1 hour.

Alternative chlorination monitoring systems are available from companies that supply chlorination equipment.

UV treatment

Ultraviolet (UV) treatment is an alternative method of treating farm water. However, UV will only be effective on **clean, filtered** water (not turbid water). It should only be considered on farms where the lines from the storage tank to the drinkers and the drinkers themselves are clean, in good repair and are well maintained, to minimise contamination after UV treatment. UV treatment units and water filtering systems are available from specialist water treatment or pumping companies.

Source: AI Preparedness Document for Australian Meat Chicken Growers, Australian Chicken Meat Federation Inc., April 2006.

More information on treatment of water

A detailed document on water biosecurity for poultry farms can be found at the following websites:

www.daff.gov.au/birds

and

www.farmbiosecurity.com.au/toolkit.cfm

¹ ppm—parts per million