

Water Quality

Water is an essential ingredient for life. Any increases in water and reduction of water intake can have a significant effect on the lifetime performance of the chick. Water supplied to broilers should not contain excessive amounts of minerals. Water should not be contaminated with bacteria. Although water supplied as fit for human consumption will also be suitable for broilers, water from bore holes, open water reservoirs or poor- quality water can cause problems. **Before supply water to the chicks the level of calcium salts (water hardness), salinity and nitrates should be tested.**

The following Table shows the maximum acceptable concentration of minerals and organic matter in the water supply.

Material	Acceptable Concentration (ppm or mg per liter)	Comment
Total dissolved solids (TDS)	0–1,000	Higher levels will cause wet droppings and reduce performance
Fecal coliforms	0	Higher levels indicate contaminated water
Chloride	250	Higher levels not good for health
Sodium	50	
Calcium salts	70	
pH	6.5–8.5	Acid water will rust equipment and disrupt health interventions
Nitrates	trace	-
Sulphates	200–250	Higher levels will increase wetness of droppings
Potassium	300	Higher levels not good for health
Magnesium	50–125	
Iron	0.3	
Lead	0.05	
Zinc	5.0	
Manganese	0.05	
Copper	0.05	

If water is taken from wells or bore holes it may have excessive nitrate levels and high bacterial counts. Where bacterial counts are high, determine the cause and correct the problem. Bacterial contamination can often reduce biological production performances both on the farm and at the processing plant.

Water that is clean at the point of entry to the broiler house can become contaminated by exposure to bacteria within the house environment. **Chlorination** between 3 and 5 ppm at drinker level will reduce the bacterial count, especially where drinker systems with open water surfaces are in use. **Ultra Violet (UV) irradiation** is also effective in controlling bacterial contamination. Drinker valves and **pipes may become blocked** if the water is hard and contains high levels of **calcium salts or a high level of iron**.