Ignore your well at your own risk!

by the technical team, Ziggity Systems Inc, 101 Industrial Parkway East, Middlebury, Indiana 46540, USA.

Most poultry farmers know that the quality of water they supply their broiler flocks plays an integral role in the performance of those flocks. Yet, many farmers have no idea what quality of water comes from their wells. They test the well after opening it and then assume the water quality remains constant.

Groundwater changes over time and that means the quality of water in the well changes. Water quality issues become more significant when you consider that about half of all poultry farms rely on the same well to supply water to their families, as well as their flocks.

Well contamination by pathogens or chemicals can severely limit flock performance and present a real threat to a family's health.

Regular testing

Producers should test their wells regularly – usually once a year. Also, consider testing the well any time the taste, colour or odour of the water changes or if unexplained illnesses occur in the family.

If drought conditions prevail, pay closer attention to the well. The extreme demands for water brought on by drought can affect the aquifer.

When you test, look for these contaminants:

- Coliforms. This is the family of bacteria that lives in the digestive tracts of humans and animals. The presence of coliforms can depress performance and cause illnesses in birds and humans. Such contamination may require shocking the well with chlorine.
- Nitrate-nitrogen. May indicate contamination from septic systems, nearby cattle, hog or dairy feedlots or poultry litter. Nitrates pose a toxic threat to children less than six months old, although they are not as dangerous to birds.
- The pH. The acidic level of the water. Studies show that birds do not drink as much water when the pH is too high or too low and this reduces flock performance.

Total dissolved solids. The concentration of all dissolved minerals in the water can affect the taste of the water and hinder flock performance.

The most common source of well contamination stems from rainwater runoff. All too often, farmers locate wells without considering the nearby sources of contamination.

For instance, run off from animal feedlots or stacked litter outside the poultry house can contaminate the well.

Abandoned wells represent another threat. If you do not properly cap the abandoned well, it becomes a direct conduit to the groundwater.

Correct siting essential

Maintain the well casing about 16 inches above ground level. Constructing a concrete pad around the casing or sloping the soil away from the casing helps prevent contamination. Also, periodically inspect the well cap to make sure it is not missing or damaged.

Some producers protect the wellhead even more by constructing a small shed around it. If unfeasible, consider fencing in the wellhead to prevent grazing animals from getting too close and depositing waste nearby.

When determining the location of a new well, think about the safety of the well, not convenience. The University of Tennessee Institute of Agriculture recommends locating wellheads at least 50 feet away from broiler houses, septic tanks and leachfields and 100 feet away from stacked broiler litter, animal feedlots, lagoons, chemicals and fertilisers and fuel tanks.

Producers also should be aware of the capacity of their wells. Over pumping happens when you remove water from the well at a faster rate than the well replenishes itself.

If you draw the water level in the well down to the screen area, you may introduce oxygen into the aquifer. This can result in the buildup of biological slimes.

Presence of iron

The presence of iron bacteria in the water presents another cause for concern. Iron feeding bacteria offer no known health problems, but they can cause water to taste bad and smell foul.

This can discourage the birds from drinking. Iron can also discolour the water and build up on fixtures.

Another problem is that iron bacteria develop a reddish brown slime or biofilm that can coat interior well parts. This slimy coating can grow up to a half-inch thick and can drastically diminish the effectiveness of the well pump.

Shocking the well with chlorine kills iron bacteria but does not rid the system of slime. Producers should attack this buildup much the same way they do biofilm buildup in their watering systems. Properly formulated, hydrogen peroxide is highly effective at breaking up biofilms. You may need the help of your contractor or pump installer to fully clean the pump parts.

Keeping close watch on your well and monitoring its condition can pay with better flock performance, as well as better health for your family. ■