

Five watering mistakes that can hurt production

*By the Technical Team, Ziggity Systems, Inc.,
101 Industrial Parkway East, Middlebury, Indiana 46540, USA*

Over the past 45 years, poultry production has evolved from a relatively simple barnyard practice to a highly technical industry. Yet, all too often producers do not achieve the results they want.

A recent international survey of field representatives in the poultry industry revealed five very common mistakes producers make concerning their watering systems, resulting in less than optimum flock performance. Remedies for these mistakes are relatively simple.

Incorrect pressure settings

Broilers drink approximately 0.7 to 0.8 kg. (1.6 to 1.8 lbs) of water for every 0.45 kg. (1 lbs.) of feed they consume. However, birds can drink only so fast and only so much. Producers cannot force them to drink more. A common myth in the poultry industry says that increasing the pressure in an enclosed watering system increases the amount of water the birds consume.

Running a watering system with too much pressure delivers more water than the birds can consume such that the excess water spills onto the litter. Wet litter results in elevated ammonia levels which can harm the health of the birds and contribute to poor flock performance.

Virtually all manufacturers of nipple-type drinkers without catch cups recommend minimum pressure settings for day-old chicks. Some manufacturers recommend

settings as low as 2.5 cm (1 inch) of column height pressure. Manufacturers differ on pressure settings after the first week.

To determine the correct pressure setting, examine litter conditions. For wet litter, reduce pressure until it starts to dry. Only then, increase pressure. Producers should strive for friable litter.

Faulty line management

Enclosed drinking systems revolutionized the poultry industry, providing birds with more nearly hygienic water. No longer do the birds contaminate the water by pecking the litter and then drinking from an open bell or cup-type drinker. But, many producers fail to take full advantage of enclosed systems by allowing sediment to enter and biofilm to build up in the lines.

Sediment or particulate matter often ends up in the drinkers and causes them to leak. A filter ahead of the water line (a 5 to 10 micron cartridge) can prevent this from happening. A regular program of high pressure flushing also is effective in removing sediment.

Biofilm creates its own set of problems. Biofilm buildup occurs when organic based interventions of medications and vitamins create a sticky substrate of material on the interior walls of the drinker lines. This nutrient-enriched biofilm, in turn, provides pathogens, such as E. coli, with everything they need to multiply and prosper. As the birds drink, these pathogens enter their 41.1-degree C (106-degree F) digestive tracts. This environment acts like an incubator and accelerates the number and strength. The diseases fostered by this contamination can severely challenge a flock and hinder performance.

Enclosed watering systems operate on low pressure, providing little turbulence to dislodge biofilm. Daily high pressure flushing breaks up biofilm. Also, flush after each intervention of vitamins or medications.

Hydrogen peroxide-based cleaners offer a highly effective tool for eliminating biofilm. Properly formulated, hydrogen peroxide becomes a powerful oxidizing agent that scrubs the interior of the pipe clean of biofilm.

Water contamination

Water consists of more than hydrogen and oxygen atoms. It also contains a variety of substances dissolved or suspended in it. Those added materials could drastically affect flock performance.

Runoff from fields can cause significant contamination to wells, ponds or streams. Even water from a municipal system can contain contaminants, including excessive chlorine that can harm flock performance.

Producers should ensure water entering the house meets the same microbiological standards as potable water for human consumption. Ideally, water should be clear, odorless and tasteless for the poultry flock. It should have no bacteria in it.

It is critical that producers have their water tested regularly so they know what their flocks are consuming. Water quality can change over time.

Producers should pay particular attention to their wells during times of drought. As the water table lowers, the quality of water in the well can change.

Drinker height

Producers should make sure they have the drinkers at the right height for the birds. Drinkers set too low result in water spills. Drinkers placed too high inhibit birds from getting all the water they need.

Producers need to pay special attention during the first few days of a new flock. If the chicks do not drink or cannot find the water, they will rapidly dehydrate. On the first day, place the chicks close to the drinkers. For nipple-type systems, the end of the trigger should be just slightly higher than eye level. Also, provide sufficient candlepower, enough to attract chicks to the metal pins.

As the birds find the drinkers, raise the lines slightly, encouraging the chicks to stretch their necks. By the second or third day, drinker height should encourage the chicks to peck at about a 45-degree angle. Chickens rely on gravity to drink because of a split in the upper hard palate of the beak that allows air into the nasal passages. This prevents the birds from forming a vacuum in their mouths and they must raise their heads to allow the water to flow into their crops.

As the birds age, continue to raise the drinkers. By four weeks, the drinker height should require the birds to peck at about a 50- to 55-degree angle. (Determine the angle by drawing a line from the bird's feet to its beak.) Drinkers that are too high force the birds to elevate their breasts and stretch their necks, leading to inadequate consumption. Some producers will keep the drinkers so high the birds must jump to activate the trigger pin. This only leads to water spillage.

Inaccurate advice

Producers often receive poor advice about management procedures applied to the drinking system.

Producers always should follow management recommendations made by the manufacturer of their system. Applying general management procedures or procedures someone other than the manufacturer recommends usually leads to poor system performance.

However, certain observations can help a producer optimize drinking system performance. Observe litter conditions. Make sure the flock receives as much water as possible without making the litter wet.

Producers should carefully track their bird performance, including weight, livability, feed conversion, undergrades, egg production, egg size, etc. Producers should compare flock-to-flock and house-to-house performances, as well as looking at industry norms.

This means keeping detailed records and referring to them often. When any one of the measured categories begins to show signs of underperformance, the producer should turn detective to find the problem.

Ziggity Systems, Inc. is the only manufacturer 100 percent focused on poultry watering for improved performance. For more information, write Ziggity Systems, Inc. at 101 Industrial Parkway, P.O. Box 1169, Middlebury, Indiana 46540-1169 USA, call +1 574.825.5849, fax +1 574.825.7674, or visit its Web site at www.ziggity.com.

-end-