

Hygienic water vital in successful poultry operation

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To have a successful broiler operation, a farmer must make sure the flock receives fresh, hygienic water. To achieve this, you need to monitor every facet of the watering system from the origin of water to the point of delivery to the birds. At any point in the watering system, a lack of vigilance can turn the system from a source of life-giving water to a breeding ground for pathogens.

Enclosed vs. open systems

Farmers who use enclosed watering systems generally experience better results than those who use open systems or catch cups. The reason: closed systems protect the water from pathogens that thrive in the poultry shed environment. Open systems and catch cups present serious health problems because these systems are impossible to keep clean. Catch cups also allow for bird-to-bird cross contamination.

High-flow drinkers with catch cups can cause other health-threatening problems. The drinkers discharge more water than the birds can drink with the excess wetting the litter. Wet litter promotes ammonia releases that can damage a bird's trachea and lower its immune response, making it more susceptible to disease. Wet litter also increases foot lesions, breast blisters, skin burns and scabby areas. The result: the birds divert energy from growth to fighting off disease. Additionally, heavy ammonia releases create an unattractive environment around the broiler farm.

Another problem is that catch cups are labor intensive. You must clean them regularly to avoid build-up of debris and biofilm.

Drinker management

An enclosed watering system without catch cups requires a drinker that will supply all the bird's needs but not more than it can drink with each peck. But to successfully use such a system, you must carefully manage line height and pressure settings.

You should set the water line so that the birds are drinking at a 50- to 55-degree angle. (Imagine a line drawn from the bird's feet to its beak.) At this angle, almost all of the water discharged by the drinkers as the birds peck at them goes into the birds and not onto the litter. The birds grow rapidly, so you must adjust the line height daily.

Adjust water pressure based on litter conditions. Wet litter under the drinkers indicates the pressure is too high and the drinkers discharge more than the birds can drink. In this case, you should reduce pressure until the litter starts to dry.

Dusty dry litter indicates the birds may not have access to sufficient water. This can result in less feed intake and reduced weight gain. If litter under the drinkers is completely dry, increase pressure by five centimeters (two inches) per day until a slight dampness develops. Then stop. Increase pressure as litter readings allow.

Ideally, you should strive for litter that is just slightly damp. This maintains the litter in friable condition.

Biofilm buildup

Farmers also should combat biofilm buildup in their watering systems. Biofilm occurs when bacteria attach to the pipes' walls in a drinking system, creating a sticky substrate. When you introduce medications and vitamins, bacteria find an ideal breeding ground in glucose and other nutrient-enriched bases used for the interventions.

If biofilm builds up, you can put hygienic water into your poultry house and yet provide contaminated water to the birds. The microorganisms — salmonella, campylobacter and E. coli — find everything they need in biofilm to multiply and prosper. The bacterial load fostered by this contamination can severely challenge a flock and hinder performance.

Biofilm also can coat internal drinker parts, hindering how they work and causing them to leak. The leakage results in wet litter conditions and ammonia releases.

You can determine the scope of biofilm contamination in your operation by taking apart a drinker and looking at the parts. The residue on the parts is biofilm and its presence represents potential loss in profits.

Farmers commonly will introduce chlorine or other sanitizing agents into the system to kill bacteria. This practice will disinfect the water, but won't kill bacteria embedded in biofilm. Nor does it break up the biofilm. The bacterial load in the water will quickly return to the pre-sanitized level. In 24 hours at 32 degrees C (90 degrees F), a single E. coli organism multiplies into trillions of E. coli.

To combat biofilm, you must break it up. Ziggity Systems recommends a regular schedule of line flushing with 1.5 to 3.0 Bars (20 to 40 psi.) of pressure.

An additional and highly effective tool for eliminating biofilm is a hydrogen peroxide-based cleaner. Properly formulated hydrogen peroxide is a powerful

oxidizing agent. The oxidizing action scrubs the interior of the pipe clean of biofilm, making the system ready for flushing.

Biofilm represents a very real threat to your poultry flock. Each broiler farm should develop and implement a plan to combat biofilm.

Water's source

Consider the source of your water. If you get water from a well or river, you need to test it on a regular basis for contamination. Ideally, the water for your poultry shed should be potable — fit for human consumption.

Filter the water before it enters the poultry house. Filtration will remove particulate inorganic material, such as sand or grit that can build up in the water lines. In addition, test the water for inorganics such as iron or calcium. These also can build up in the lines.

Poultry flocks need an ample supply of water to thrive but broiler farmers also should make sure the water they give their flocks is hygienic. There are many points where pathogens can infect the watering system, so farmers need constant vigilance.

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.