

# Watering system critical in parent stock operation

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The watering system and how the farmer manages it determine many of the conditions in a parent stock operation. And, these conditions affect how the birds perform during each of the three stages of a breeder flock.

## **Brooding Period 0 to 3 weeks**

The first few days of a new flock are critical. If the chicks cannot find the water and do not drink, they will dehydrate rapidly. Water represents about 85 percent of a chick's body. A loss of 10 percent of this water results in death.

On day one, place the chicks close to the drinkers. Adjust the drinker line so that the end of the trigger is just slightly higher than the birds' eye level. Also, make sure the lighting in the house is bright enough to attract the chicks to the shiny trigger 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. (Imagine a line drawn 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 keep the drinkers so high the birds must jump to activate the trigger pin. This only leads to water spillage.

Use an enclosed watering system from the beginning. An open system, even for the first few days in the brood house, exposes the water to an environment riddled with pathogens. The chicks — already stressed from the initial transportation to the brood house — are more vulnerable to disease. Additionally, by using the same type of watering system all the time, the birds do not undergo the stress of learning a new system.

From the beginning, producers need to be concerned about biofilm contamination in the drinker lines. Biofilm occurs when bacteria attach to the pipes' walls in a drinking system, creating a sticky substrate. As producers introduce medications and vitamins, bacteria find an ideal breeding ground in glucose and other nutrient-enriched bases used for these interventions. Additionally, most enclosed watering systems operate on low pressure, providing little turbulence to dislodge this buildup.

Producers commonly will introduce chlorine or other sanitizing agents into the system to kill bacteria. This practice will aid in achieving hygienic water, but it does not 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, producers must find a way to break it up. A daily schedule of high-pressure flushing with 1.5 to 3.0 Bars (20 to 40 psi.) pressure helps to dislodge biofilm.

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.

## **Growing Period 4 to 20 weeks**

Producers typically begin to restrict feed and water at this stage. Hatcheries genetically breed modern parent stock to produce rapid growing meat birds. However, if allowed unrestricted access to food and water, the birds develop a large frame, resulting in a heavier bird at sexual maturity. Such birds consume more feed and have inferior reproductive performance.

To achieve optimum growth, partially restrict the flock's access to water. Birds on feed restriction sometimes compensate by increased drinking activity. This can lead to excessive moisture in the manure, resulting in unhealthy ammonia releases.

However, the birds need ample water for digestion. Many hatcheries recommend providing the birds with water for an hour before and an hour after feeding. This avoids "feed shock" where the bird has too much feed or insufficient water in the crop. Feed shock results from the feed in the crop putting excessive pressure on the bird's carotid arteries. This reduces blood flow to the brain and can result in paralysis and death.

On off-feed days, continue to give the birds access to water. Hatcheries frequently recommend providing water to the flock on off-feed days for a half to a full hour, in the morning, at noon and in the evening. Water should never be restricted during times of high heat.

A restrictive feed and water program affects how birds drink. Hunger and thirst make them aggressively attack the drinkers when water is available. As they grow larger (2.27 kg or 5 lbs. and more), this aggressive drinking behavior has the potential to damage the watering system, resulting in leaks.

## **Laying Period 21 to 65 weeks**

At about 21 weeks, move the flock to the laying house and aim the feeding program at bringing the birds to sexual maturity. Provide an ample supply of fresh, hygienic water.

Typically, the laying house has both a litter and a slat area. Manure builds up under the slats and releases ammonia if it becomes wet. This ammonia can affect the layers' respiratory systems and cause production to fall.

Also, check the watering system's pressure regularly. Running a watering system with too much pressure delivers more water than the birds can consume, and excess water spills onto the litter or into the pits.

Wet manure is an ideal breeding ground for all sorts of pathogenic bacteria. These bacteria can be spread to the laying hens and the eggs, causing the new chicks to start off diseased. Flies also find wet manure an ideal breeding ground for maggots, and rats are attracted to the ready supply of water and feed. Both pests can rapidly breed out of control. Besides the disease rats can spread, they also compete with the birds for food, can cause stress among the flock and may attack birds or eggs.

Breeder stock presents a number of challenges to a producer, but having a reliable drinking system and managing it well go a long way to reducing them.

*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](http://www.ziggity.com).*

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