Understanding broiler drinking behaviour

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To manage a broiler watering system effectively, producers need to understand poultry drinking behaviour. Supplying water without taking into account a chicken's habits results in wet litter and the host of accompanying problems.

When drinking, chickens peck the trigger pin in short, quick jabs. The drinker discharges water in varying amounts, depending on how the bird activates the drinker. A light peck by a small bird releases less water than an aggressive peck by a larger, older bird.

On average, a chicken spends no more than a minute at a drinker. This means the birds will return repeatedly to the drinkers throughout the day.

Chickens prefer to eat and drink when other birds are present at the feeders and drinkers.

This behaviour, called 'social facilitation', explains why chickens perform better in groups than individually.

Chickens can drink only so fast and only so much.

Producers can not force them to drink more. A common misconception of poultry producers says that increasing pressure in an enclosed watering system increases the amount of water the birds consume. A bird's beak can only hold so much water during the pecking and drinking process and any water discharged greater than this will spill and wet the litter.

Wet litter creates ammonia releases that can damage a bird's trachea, making it more susceptible to disease. Wet litter also increases foot lesions, breast blisters, skin burns and scabby areas. Any disease in the birds takes feed energy away from meat production to fight off the condition. Additionally, any injury or unhealthy condition increases downgrades and condemnations.

Another myth in the poultry sector says producers can determine how much water a chicken consumes by using a special tool for measuring flow rate. Such tools operate by lifting the trigger pin and holding it open for a set time. That bears no resemblance to how birds actually drink, that is by pecking.

To determine the correct pressure setting for delivering water to the flock, examine 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, the producer should reduce pressure until the litter starts to dry.

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

Ideally, producers should strive for slightly damp litter. Litter in this condition will clump when squeezed and then fall apart.

Producers should always use an enclosed watering system. An open system exposes the water to all of the pathogens in the poultry house. The birds will peck at the litter and then transfer whatever is on their beaks to the water when they drink with an open system. In addition, an open system affords more opportunity for disease to spread throughout the flock.

Water is vital to the digestive process in birds. Nature designed chickens to swallow whole seeds and bugs and, therefore, water in the crop softens the feed so that digestion can occur. Without water, dry feed forms clumps in the crop that can press on the bird's carotid artery, decreasing blood flow to the brain. This can cause paralysis and possibly death.

Poultry anatomy complicates matters. A split in the upper hard palate of the beak allows air into the nasal passages, but also prevents the chicken from forming a vacuum in its mouth.

Chickens, therefore, rely on gravity to draw water into the crop. Producers can assist in this process by carefully monitoring and managing drinker line height.

Producers need to pay special attention during the first few days of a new flock. 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 lighting, enough to attract chicks to the metal pins.

By the second or third day, producers should begin to raise each line slightly with a goal of having the chicks peck at about a 45° angle (imagine a line drawn from the bird's feet to its beak.)

As the birds age, continue to raise the drinkers. By four weeks, the drinker height should require the birds to peck at about a 50-55° angle.

Do not locate the drinker line so that the birds peck straight in or downwards at the trigger pin. This limits water consumption and causes wet litter conditions. Again, maintain at least a 45° drinking angle.

Understanding how birds drink and what behaviour patterns they exhibit can help producers determine the poultry house practices that yield optimal performance. ■