The seven habits of highly effective water treatment

Interhatch

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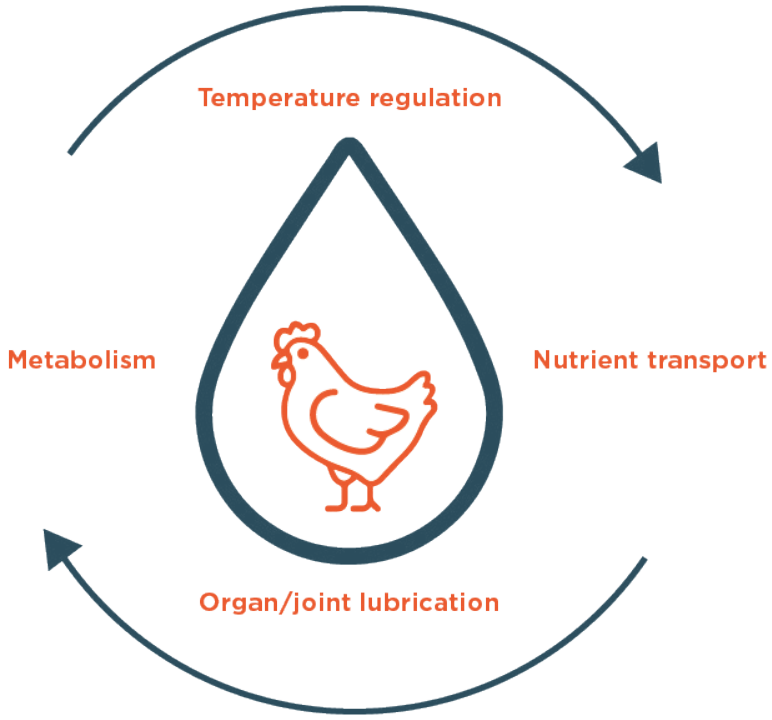
The seven habits of highly effective water treatment – are they happening on your farm?

It cannot be over-emphasised just how important a constant supply of clean drinking water is in the poultry shed. Water is essential for bodily processes, such as metabolism, nutrient transport, temperature regulation, and organ and joint lubrication. But when water isn't clean and uptake by the birds is poor, it can impact these processes and overall performance.

Dirty water is a major carrier of common poultry diseases, such as E coli, salmonella and enterococcus. It can also compromise the efficacy of treatments sent through drinker lines, such as vaccinations and medications. An effective water treatment system sets a flock up for success, yet water often receives less attention than nutrition or the bird's environment. Here, we explore the seven highly effective habits of water treatment which can ensure that water quality is receiving the attention it warrants on the farm.



1 Terminal shock-dose drinker lines thoroughly

Every farmer knows that getting chicks off to a good start is crucial. The terminal shock-dose at the end of each crop is a vital 'reset button' which ensures the next crop arrives to plentiful supplies of cool, clean drinking water. The dose must be at the correct rate (check manufacturer's recommendations) and should stay in the lines for the required length of time to ensure effectiveness. For example, our product Huwa-San is recommended at 1% for 24hrs. The drinker line should be pressurised to ensure that the line is full and that the treatment reaches all surfaces. When flushing the treatment out of the drinker lines, it is critical to flush only one or two lines at a time to ensure that sufficient pressure is present to remove any debris loosened by the treatment.

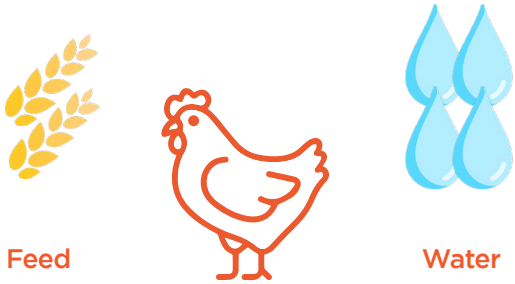
2 Flush drinker lines in-crop

Flush the lines just before chick placement to ensure a supply of cool, fresh water, and then regularly throughout the next ten days. Auto-flush systems can be fitted to drinker lines to make this easier. At the start of a broiler flock, water consumption rates can be low – the birds are small and drink less at first. In a shed which has been heated specially for young birds, this can mean that the slow-moving water warms up in the drinker lines and becomes a breeding ground for bacteria such as enterococcus or E coli – not a good start for any chick. In addition to this, warmer water will reduce water intake and subsequently feed intake. Ideally, water temperature should be below 20C but always aim to keep it below 25C.

3 Use the right chemical to maintain stability, safety and taste appeal

Water treatment chemicals vary in levels of stability, with cheaper products often being less stable. A less stable chemical will degrade as it progresses through the system and become less effective, so you will need to use much more chemical to achieve the desired efficacy. Huwa-San contains hydrogen peroxide that has been stabilised very effectively – this enables a lower dose and less chemical usage overall.

Hydrogen peroxide has the advantage of being non-corrosive, whereas products that contain chlorine dioxide or chlorine are corrosive – this can cause damage to plant room equipment via 'gassing off', necessitating replacement after 4/5 years. They also require mixing with another substance before use, where there is always room for error and potential harm to employees. Chlorine dioxide and chlorine can also taint the taste of water, which birds may find off-putting. Choosing a virtually tasteless chemical, such as hydrogen peroxide, will make your water as palatable as possible and ensure that birds drink readily from the lines. Buying a cheaper and/or less stable product is a false economy when it comes to something as important as water.



Key fact

Broilers consume approximately **1.6 to 2.0 times as much water** as feed on a weight basis.

4 Focus on the end-of-line residual level of your treatment chemical

It is better to focus on the residual level of treatment chemical at the end of the line rather than the dosage level going in at the start – this ensures that the treatment is effective throughout the lines and at the drinking outlets, ensuring that the water the birds drink is clean.

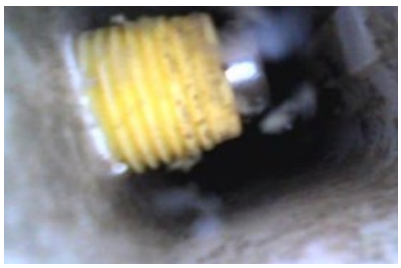
There are a number of variants on-farm that can degrade the effectiveness of the water treatment. For starters, the mineral composition of the water supply, whether from the mains or a bore hole, and the cleanliness and condition of the water storage tank and underground pipework within the system, will affect how much treatment is required in the first place. The more contamination that must be dealt with, the more degraded the chemical will become, meaning it isn't doing its job by the time it gets to the drinking line. Therefore, it's important to base dosing on what remains in the line by the time it has been through the entire system. If the chemical is degrading significantly by the time it gets to the drinker lines, there is a problem in the system somewhere – testing at various points can identify where the weakness is.

5 Conduct regular endoscope testing

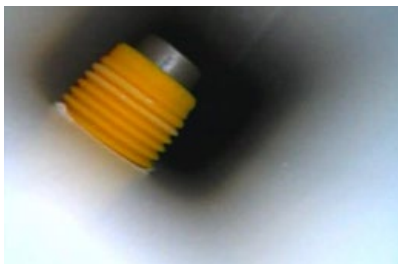
It is advisable to monitor the physical state of drinker lines with endoscopic cameras to check for limescale build-up, an accumulation of biofilm and free-floating particles. Limescale and biofilm can harbour harmful bacteria such as pseudomonas.

What the eye can't see, the heart doesn't grieve... until the health of your flock clearly shows that something is wrong, and you suspect that water quality may be the problem. Conducting endoscope examinations ensures real awareness of what is going on in the drinker lines and helps to resolve issues identified in routine testing of residual levels.

Dirty drinker line



Clean drinker line



6 Engage a provider committed to delivering clean water

A regime of testing, monitoring, and identifying and dealing with problems can be time-consuming, and stressful if you are struggling to get the right results. Rather than dealing with a provider who just wants to sell you drums of chemicals, engage a partner who is happy to do site visits to investigate issues, and who has the requisite skills and experience to help you diagnose and fix these issues. Ask for a thorough water hygiene report after each site visit; this should tell you what has been tested, any issues identified, and the work carried out to rectify them. Having a record of results – for instance images of the inside of the water lines or results from PPM (parts per million) testing throughout the lines – can be invaluable for measuring improvements in water quality.

A good provider will also conduct proper bacterial analysis, using an independant UKAS registered laboratory to assess for TVCs (total viable count of all microorganisms) and specific bacteria where required, to ensure acceptable levels of water quality, particularly in response to any significant instances of disease.

7 Use remote support/monitoring to maintain vigilance

A 24/7 remote support/monitoring service provides enormous peace of mind. A manual checking system can be fallible, but a remote system quickly detects an issue with pump settings and helps to ensure that sanitisation is continually taking place.

Remote monitoring can detect low levels of chemical in the drum so that it can be changed over quickly with minimum disruption to water treatment and create a reminder to order more product when required. It also helps to ensure that issues don't go undetected until the next site visit. Historic data can also be used to identify why particular issues may have occurred.

Water is a basic requirement of poultry farming, but getting it right and ensuring a constantly clean supply requires a methodical and consistent approach. Clean water is vital to the success of any flock, protecting it from disease and setting it up for success. It is not an area to cut costs, make false economies or save time.

At Interhatch we work closely with our clients to ensure that what they get at the end of the day is clean water, not just drums of chemicals. Detailed set-up, monitoring, analysis and support come as standard with our supply of water treatment solutions, without additional charge. If you'd like to find out more about how our water treatment service works, take a look at our brochure here or contact us for an informal chat.

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