

PH MATTERS

by JONES-HAMILTON CO

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WATER ACIDIFICATION PROMOTES GUT HEALTH AND PERFORMANCE

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ater is at the core of bird health and performance. A well-functioning gut depends on sufficient water to maintain structural integrity and the ideal mix of microbes, enzymes and other elements that make up a healthy microbiome.

Water and feed are closely linked with birds drinking nearly two times the amount of feed consumed, on average. If water intake declines, so will feed intake, resulting in performance declines for which even the highest quality feed can't compensate.

Working to maintain ideal consumption of quality water is one of the most impactful things a grower can do to support bird health and performance.

START EARLY WITH ACIDIFICATION

It is common for chicks to be somewhat dehydrated at placement. Given the importance in the first seven days and how rapidly the digestive tract develops during this time, any intervention that works to promote gut health is likely to pay off in lower early mortality and improved feed efficiency.


Water acidification is used to promote water consumption, aid in the development of normal gut flora and to create an environment unfavorable for pathogenic bacteria. Chicks will drink sooner and at greater consumption levels when provided with clean water at the right temperature, flow rate, and taste profile.

Understanding pKA and Palatability

Birds prefer water at a low pH. The taste or palatability of water is affected by the type of acid used. Acids that contain multiple hydrogen ions such as citric, lactic, malic and phosphoric will impart a sour taste to the water.

If water becomes too sour from acidification, birds will reduce the amount they drink—making palatability the most critical component of a water acidification program. To acidify the crop, water pH should be reduced below 4.0 without reducing water consumption.

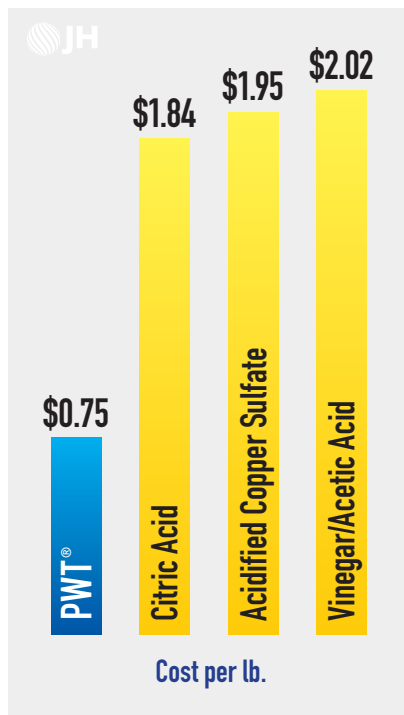




Acid	pKa Value
Sodium Bisulfate	1.99
Phosphoric Acid	2.16
Citric Acid	3.14
Acetic Acid	4.75
Propionic Acid	4.87

Figure 1. Strengths of common acids

Acid strength is denoted by pKa value (**Figure 1**). The lower the pKa value the stronger the acid. Due to its pKa value, PWT[®] - pH Water Treatment is able to lower water pH at a low addition rate so water is acidified without imparting a bitter taste. Beyond consumption, acidifying drinking water ultimately impacts the bird's crop. By lowering the pH and creating an environment unfavorable for bacteria growth in the crop, it works to lower populations before they reach the lower digestive system.



FINISH STRONG AT A LOW PRICE

Many producers acidify water over the last 72 hours before catch to acidify the bird's crop. With its low addition rate, PWT can lower water pH to biologically effective levels for less than \$10 per house. That's less than half the cost of citric acid.

For effective water acidification at a great price that won't cause chickens to reduce water consumption, choose PWT.



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