

Oxidation Reduction Potential (ORP)

A Tool for Evaluating Your Water Sanitation Program



What?

ORP is a tool used to measure the effectiveness of a water sanitation program when a strong oxidizer, such as chlorine, is being used. ORP measures the sanitizing power left in water. The value, measured in millivolts (mV), reflects the ability to kill unwanted living organisms in the water.

Why?

Clean sanitized water is one of the most critical, yet often overlooked, elements of flock management considering turkeys consume twice as much water, as they do feed. Water quality can affect the amount of water consumed as well as the bird's ability to utilize the consumed water thus impacting the birds performance.

Bacteria, such as *E.coli* and *salmonella*, grow in water. Determining the presence of these organisms is important and cannot be found by measuring the concentration of sanitizer or the pH level in the water. Since these organisms consume oxygen from the water, testing the oxidation levels in water will indicate if a foreign organism is present.



For example, if the oxygen levels are low (generally resulting in low ORP readings) it likely means there are unwanted organics present and that adjustments to your sanitation program are required.

Benefits

ORP is a dependable, accurate and repeatable measurement of water quality. ORP offers a common unit of measurement to evaluate the cleanliness of water, regardless of the type of sanitizer being used. ORP readings take into account the balance between pH and free chlorine levels rather than focusing on the concentration levels of a product. Therefore you can better assess the effectiveness of the sanitation methods you are using.

How?

ORP is generally measured in one of two ways: Process meters/controllers (automated) or hand-held meters. Measurement is made by placing or dipping the meter probe into the water and then observing the display.

Hybrid Recommendation: ORP reading of > 700mV

Studies have shown that an ORP of 650mV result in instantaneous kill of *E.coli*; however some organisms such as *salmonella* fungi and mildew require higher levels to ensure instantaneous kill rates. Therefore Hybrid recommends ORP of at least 700mV to ensure clean water for your birds.