



# Broilers in the mist

The Weeden sprinkler system will help keep the birds cool while promoting more activity



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**B**rodhagen - When broilers get hot, they respond in three ways: sit down, pant, and slow down their eating.

It's the natural response for birds, which can't sweat. They sit down because the litter is initially cool, relative to the birds' body heat. Panting allows for gas exchange, removing hot wet air from the bird's lungs, and ideally replacing it with cooler drier air. Finally, reducing feed intake slows digestion so the bird itself is creating less heat.

A shower will can cool them off, and Weeden Environments has been working with sprinklers for 20 years. In fact, it began as Weeden Sprinkler Systems, said Kevin Weeden, who took over the company from his father in 2003.

Weeden's sprinkler technology was patented in 2015, when they added a controller to the system.

Weeden describes it as a micro-sprinkler that creates droplets categorized as light rain, but it uses a very small amount of water. One cycle

will spread the equivalent of one gallon of water (4 litres) over an area of 20,000 square feet.

The sprinklers will only minimally raise the humidity. Because the droplets are larger, they don't hang in the air; they fall on the birds or drop to the ground.

The Weeden sprinkler system works in two ways, said sales rep Kevin Thompson. The first way is that it promotes activity. When the sprinkler comes on, the birds get up, and that motion frees the heat they've captured under their bodies so it can be ventilated out of the barn. This actually cools the litter as much as 5°C.

Secondly, droplets left on the birds' heads and feathers create 'artificial sweat' and remove heat as they evaporate. It works well in combination with a circulating fan directed towards the bird, or with tunnel ventilation.

Temperature probes in the barn signal the controller to turn the sprinkler on and off as needed. It can operate independently, either as a cooling system, or for activity promotion, or in combination. The cooling will override the activity.

There are three levels of cooling, based on temperature. An age/temp curve programmed into the controller sets the sprinklers to come on more often as the birds get older and larger. The controller can operate up to four zones of cooling.

The birds rise when the sprinkler comes on, and there's a spike in water consumption, Thompson said. "I don't think there's data to show an overall increase in consumption," he said, "but it changes the drinking pattern."

Comparative feed consumption is very difficult to measure. However, "if the birds are eating more often, nutritionists tell us this should improve feed efficiency," said Weeden.

A 10-year study with 17 summer flocks, raised in four barns at the University of Arkansas, showed a three point feed conversion advantage in



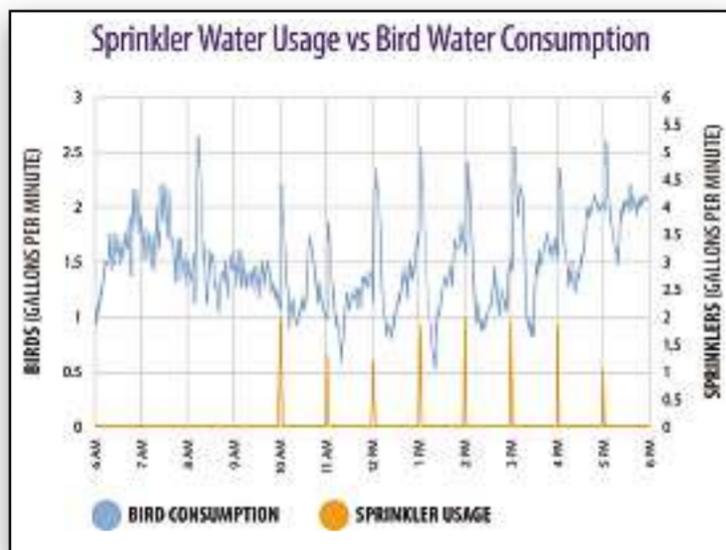
**One sprinkler can cover an area with a diameter of 24 feet.**

the two barns with sprinklers, said Weeden.

The sprinkler runs just 10 to 20 seconds, but it initiates bird activity, including drinking and migration to the feed pans. Because of this natural response, growers use the sprinkler to get birds up and moving, even when there's no heat stress.

For activity promotion, the sprinklers are set to operate every two hours, for 10 seconds. The birds continue to react to the sprinkler, by rising, even after 50 days of operation, Thompson said.

Because the sprinkler was developed in Israel where water is scarce, it uses minimal water. The spinner operates at the base of a 30 inch drop pipe suspended from the ceiling, and covers a 24 ft. diameter.



**Based on data courtesy of the University of Georgia.**

"There's very little overlap, so we can get full coverage without having any wet spots," said Thompson.

PAUL DIETRICH of Shakespear installed his first sprinkler system in 2004, after two

summers in a row when he lost birds to heat stress. When he renovated a hog barn in 2008, he installed a sprinkler system for the finishing pigs.

In 2016, when Dietrich built



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