

Water driven pumps: maintaining bird health with less antibiotic use

The growing trend for antibiotic-free poultry production has challenged the agriculture industry to take drastic steps towards change. The Food and Drug Association (FDA) revealed that about 80% of all antibiotics sold in the US are given to animals raised for food, equalling more than 32 million pounds of antibiotics in a single year. The same research found that at least two million Americans fall victim to antibiotic-resistant infections each year, killing nearly 23,000.

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Reducing antibiotic use is not only a growing consumer demand, but a mandatory change for farmers. As of January 1, 2017, the Veterinary Feed Directive (VFD) went into effect, requiring a more judicious use of antibiotics in animals and veterinary oversight for when antibiotic use in animals is considered important to human health.

In order to obtain tighter bio-security and reduce antibiotic use on the farm, farmers should know and understand the best steps to take for an easy and successful transition.

Adapting to a new market

According to a recent study done by Consumers Union, 86% of consumers think meat raised without antibiotics should be provided at their local supermarket, and 61% of consumers are willing to pay an extra cost for antibiotic-free meat. In order to appease consumers, grow profits, maintain a healthy reputation and abide by the new VFD standards, farmers must switch gears when it comes to antibiotic use.

While necessary antibiotic administration, such as treatment for clinically sick flocks, is still allowed, the movement towards antibiotic-free poultry is resulting in new strategies

with new vaccination protocols and improved sanitation on farms. One of the most common ways to replace antibiotic use is to increase the use of direct-fed microbial or probiotics. Other changes involve enzymes, prebiotics, oligosaccharides, organic acids and phytogenics.

Regardless of which antibiotic replacement strategy is best suited for individual farms, there is one piece of equipment that helps support the ongoing health of animals on farms and consumers at home: Water Driven Pumps (WDPs).

The role of a WDP

Water Driven Pumps enable farms to efficiently complete a variety of tasks, including issuing vaccinations, medications and nutrients and supplements through the water supply. WDPs also help farms clean and sanitise everything from drinking lines to cooling pads in pig and chicken pens to eggs and trucks entering or leaving the farm.

Many farms already use WDPs to provide extra nutrients, issue regulated vaccinations or administer antibiotics. However, due to the new restrictions on antibiotic use, WDPs may need to be replaced or updated to keep up with alternative chemicals to use in place of antibiotics.

One major use for WDPs on farms is to help provide clean water, and since many US farms pull drinking water from local ponds and wells, sanitation is needed to keep animals healthy.

Chlorine and organic acids can be used for this purpose but traditional WDPs are eaten alive by these chemicals. New WDPs are designed to work with chlorine, organic acids and many more chemicals that previous WDPs could not handle.

With a properly functioning WDP, a farm can reap numerous benefits. By providing clean water and properly dosed nutrients and vaccinations, fewer animals get sick or die, resulting in reduced farm costs. Healthier animals also produce cleaner meat and eggs, which helps prevent the risk of foodborne illnesses such as E. coli. Additionally, the higher the quality meat, the more easily a farm can grow and maintain a trusted reputation, ultimately achieving higher profits.

Choosing the right WDP

There are many different factors to consider when choosing a WDP. If the wrong WDP is used in the wrong application, it can lead to pump issues, reduced productivity, flock sickness or dissatisfaction with the purchase.

To maximise productivity and profitability, farms should consider several factors when choosing a WDP, including:

- **Application**
What is the WDP supposed to do? It is necessary to know which area (livestock, teat dip mixing, etc) the WDP is meant to aid, and what its main purpose will be (injecting drugs, cleaning pipe lines, injecting chlorine).

- **Water flow rate:**
Determine the water flow to understand whether a WDP with alternative flow rates is needed in order to properly dilute chemicals.

- **Water line pressure:**
Find a WDP that is specifically designed to operate at a wide range of pressure ratings.

- **Chemical injection ratio/percentage:**
WDPs should support the correct ratio or percentage of chemical needed in order to obtain the desired outcome, and not deteriorate when certain chemicals are used.

● Type of chemical dosed:

If a wide range of chemicals are being used (liquid, powders, aggressive, high viscosity, etc), it is important to find a WDP that can handle it all.

WDPs are constructed from a wide variety of different materials, exhibiting different chemical compatibility abilities, and farms need to be certain that the dosed chemical is compatible with the WDP.

This detail makes choosing the correct WDP for individual farms with specific chemical needs a crucial component in achieving a successful outcome.

Adjustability of the WDP is a key factor as well, since poultry life cycles require different amounts of drinking water and percentages of dosed chemical, and farms may also want to use the same WDP for dosing different chemicals over time.

WDPs do not need an electrical source to function, which is a traditional downfall of other technologies.

The devices must be installed near water and farms should find a WDP that can be self-installed in order to save time and money.

Large farms should consider installing multiple WDPs so that chemical dosing is always easily accessible. Regular maintenance is also key to ensure WDPs do not become brittle, malfunction, get backed up or perform poorly.

Maintenance may include cleaning the filter or strainer so chemical particles do not get into the water valve and replacing metering tips for proper dilution at all times.

Success without antibiotics

It is possible to achieve antibiotic-free poultry and still maintain a healthy and thriving farming business. With the help of a WDP, the VFD no longer presents an ongoing challenge, but a new opportunity to make farming and consumer products healthier.

Through innovation and a new set of tools, the future of farming can continue to grow in a more profitable, safer direction without antibiotics.

