



VIBRA SCREW INC.

The most trusted name in dry solids processing.

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C-275

CASE HISTORY



Washington State Irrigation District Solves Copper Sulfate Dosing Problems with Vibra Screw's Accu Feed

The State of Washington has led the U.S. in the production of apples since 1920 and currently accounts for 70 percent of our nation's output. In addition, the state is No. 1 in the production of cherries, grapes and pears with these four fruits representing a total production value of over \$3 billion. Washington owes its agricultural success to a combination of a diverse climate, rich soils and large-scale irrigation that enables farmers to produce more than 300 crops each year.

The Challenge:

In the farming area of Washington, water is money. Farmers must have clean water when they need it because it affects everything – crop quality, production income, property values and more. A common problem in irrigation canals is the presence of aquatic weeds and algae. These can wreak havoc by clogging water filtration and micro drip irrigation equipment resulting in costly man hours to clean and repair these systems. It is essential that irrigation water is treated to kill this vegetation and typically copper sulfate is the agent of choice.

The use of copper sulfate in agriculture is very widespread, but it requires meticulous attention. This substance can be toxic if it accumulates in bodies of water. In the past a "slug" method was used for dosing. Burlap bags were filled with large copper sulfate crystals and introduced into the feed water. Controlling the concentration was very difficult. If too much copper entered the water it would impart a rusty appearance to the fruit and reduce the value farmers would receive for their crops.



The Solution:

Tony Jantzer is the manager of the Icicle & Peshastin Irrigation Districts and responsible for the irrigation water quality for the 40 mile network of canals. Jantzer set out to find a more precise way of introducing copper sulfate into the system. After researching a variety of metering devices and approaches on the Internet, Jantzer found Vibra Screw Incorporated.

Vibra Screw is a 60 year-old family business that manufactures a wide range of dry solids processing equipment. Jantzer was especially impressed by the Vibra Screw "no conditions guarantee", the best in the industry...if it doesn't work as promised they'll take it back and refund the cost.

According to Jantzer, "As soon as I read about Vibra Screw's AccuFeed volumetric screw feeder I knew I found what I was looking for. I contacted their regional sales manager who connected me with Director of Engineering Howard Frischman. He worked out the size requirements for the hopper and other specifications."

The AccuFeed is constructed from molded polyethylene and stainless steel contact parts for excellent chemical resistance. Most importantly, the AccuFeed provided the +/-1 to 2 percent feed accuracies for the low feed rates needed to treat the irrigation water.

Exact dosing is important because the Irrigation District has to meet the permitting requirements of the NPDES (National Pollutant Discharge Elimination System) mandated by the Environmental Protection Agency.



The Results:

In June of 2011 Jantzer purchased a Vibra Screw AccuFeed. He mounted it in a pickup truck and was able to drive it to the separate canals that he needed to treat. The initial AccuFeed worked so well that two more have been purchased with three now set up at separate locations.

Jantzer has been delighted with the outcome, "We've reduced the cost of our copper sulfate usage by 50 percent and we've also reduced the man hours required in operating our irrigation system. The accuracy is outstanding. We're able to dose to environmentally friendly levels as low as 5-15 parts per billion...the problem of a rusty appearance to apples, cherries or pears is a thing of the past and the growers are receiving sparkling clear irrigation water."

The Impact:

Tony Jantzer's success with the Vibra Screw AccuFeed system at the Icicle and Peshastin Irrigation Districts is believed to be the first installation of its type in the State of Washington. It has captured the interest of the Washington State Department of Ecology at Washington State University and Jantzer has made presentations to other districts highlighting the results achieved from this precision approach to copper sulfate dosing.



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