

CanalSentry™

Reduces Seepage, Conserves Water



CanalSentry™ is a biodegradable and patented polysaccharide-based water additive that helps reduce seepage. When properly applied, this product represents a significant tool to manage water seepage losses, improving water conveyance so that more water is delivered to the field where it can be efficiently used.

In many semi-arid areas, irrigation is a must for viable farmland. Getting water to the field through earthen canals often results in significant water loss due to canal seepage. Millions of acre feet of water are lost providing no benefit to the farmer and little or no benefit to the land surrounding the canal.

Efficiently moving water from rivers through canals to the field often means the difference between harvesting a viable crop or losing it due to insufficient water.



Simple

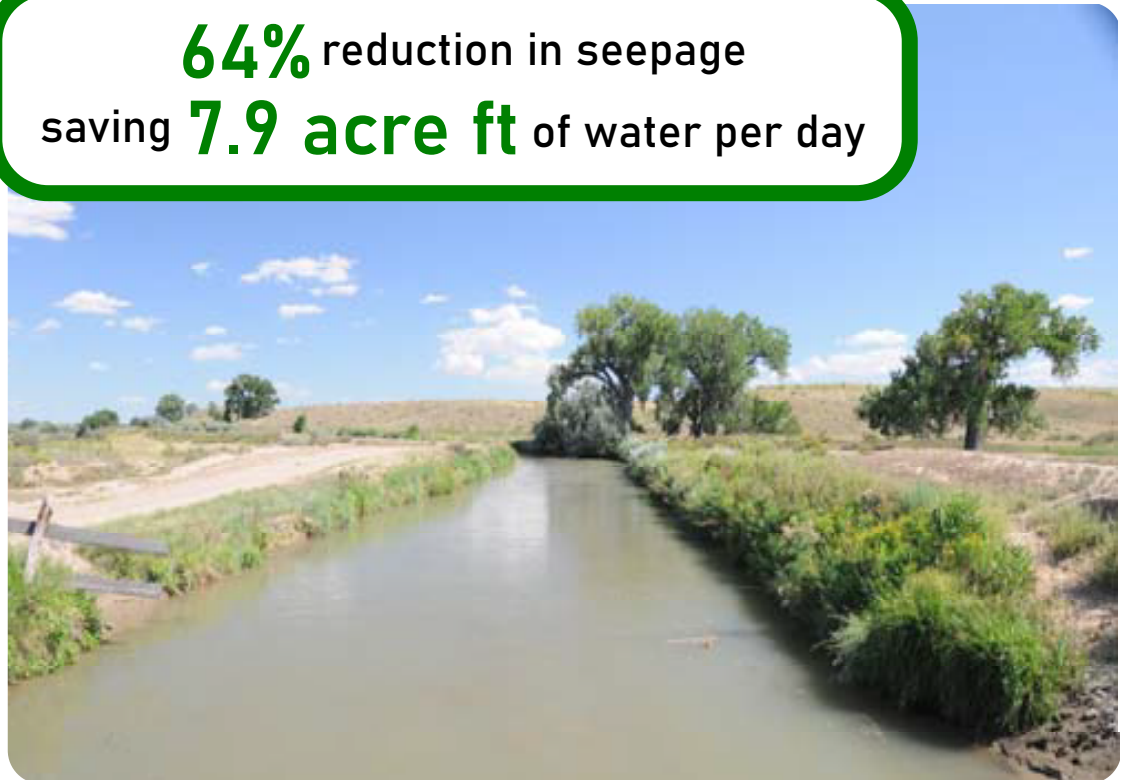


Biodegradable



Effective

64% reduction in seepage
saving **7.9 acre ft** of water per day



How CanalSentry™ Works

CanalSentry™ acts as a strong flocculating agent, causing small suspended soil particles in water to bind together and form water stable aggregates. These stable aggregates sink to the bottom of the canal forming a lining which plugs off the cracks and crevices in the canal that are allowing water to seep from the canal.

CanalSentry™ is made from an activated carbohydrate and a high molecular weight food grade anionic acrylic acrylamide copolymer. The product is considered to be readily biodegradable which means it is safe for the environment when applied according to label directions.



The application of CanalSentry™ through a small funnel into the Rocky Ford Highline Canal in the State of Colorado.

Application

There is no need to treat the entire length of the canal with CanalSentry™. The application of CanalSentry™ can be targeted where there is evidence of canal seepage. The area where seepage is high are usually marshy and lush with vegetation along the canal banks. Treating the water several hundred meters above and below these areas will sufficiently seal these areas resulting in reduced water loss. Within days of treatment these marshy areas will begin to dry out

Case Study

Application of CanalSentry™ to the Billings Bench Canal in Montana

A 3.1 mile reach of the Billings Bench Canal was treated with CanalSentry™, a bio-friendly carbohydrate based canal sealant developed by Innovium LLC. Prior to the application, flow measurements were taken by the Bureau of Reclamation using a Teledyne RDI StreamPro ADCP (Acoustic Doppler Current Profiler). The measurements were to confirm losses in the reach that were measured two weeks prior to the application. During those measurements, the reach was losing 10 cubic feet per second (cfs). On the day of application the top of the reach had a flow rate of 324 cfs and the bottom of the reach had a flow rate of 304 cfs. There was one gate open in the reach that was flowing at 10cfs, therefore the loss in the reach was calculated at 10cfs.

The amount per canal mile was calculated using the flow rate and the velocity of the water with a target of 3 ppm for the concentration of the product in the water, and it was determined that 140 pounds per lineal mile was required.

The total reach of application was **3.1 miles** and **440 lbs** of CanalSentry™ was evenly applied by motor boat using a simple funnel for metering.

Results

To validate the results of the application, a complete set of measurement were made the next morning by personnel from the US Bureau of Reclamation (the US Government agency in charge of all water conveyance structures in the United States). The flow rate at the upper reach was measured at 325 cfs and the flow rate on the lower reach was measured at 311cfs. One gate was still open on the reach flowing at 10 cfs. The loss over the reach was $325 - 10 - 311 = 4$ cfs. Before the application this reach was losing 10cfs.

The application reduced the seepage by **6cfs**, or a **60 percent** reduction in seepage.