



# Bio-Based Treatment of Water and Irrigation Infrastructure

## OVERVIEW

It is no secret that water is the lifeblood of our agricultural communities. According to most estimates, agriculture irrigation accounts for 70% of water use worldwide. By properly allocating this scarce resource, farmers can increase the productivity of their crops and the profitability of their business.

Solugen has a full portfolio of innovative corrosion, scale, and microbiological control products designed to treat water sources and maintain the reliability of associated infrastructure.

## CUSTOMER CHALLENGES AND PAIN POINTS

In recent years, agricultural regions across the globe have been hit with far-reaching water constraints. Now more than ever, farmers must learn to navigate through some of the following challenges:

- + Declining supply of water coupled with rising population
- + Increase in scale build up and corrosion throughout water distribution systems
- + Decrease in the quality of water due to a rise in polluting activities

These are monumental challenges that require creative solutions. Solutions that Solugen is uniquely qualified to address.





**SOLUGEN SOLUTIONS**

**BIOPEROXIDE™**

Solugen’s bio-based hydrogen peroxide product line provides general oxidation clarification solutions to the water treatment space. BioPeroxide™ is available in a range of concentrations from 3% to 50%. It is an excellent non-toxic, environmentally-friendly oxidizer that can be used in a variety of applications.

**PRODUCT COMPARISON**

A relative trend and oxidative rate of hydrogen peroxide and other oxidizers are outlined below:

**Bioperoxide™ · H<sub>2</sub>O<sub>2</sub> · HOCl · ClO<sub>2</sub> · KMnO<sub>4</sub> · Cl<sub>2</sub> · O<sub>3</sub>**

**BIOCHELATE™**

Solugen’s bio-based, readily biodegradable, non-toxic chelant targets and complexes common problematic metals that interfere with traditional scale control chemistries. Biochelat™ is available as a standalone concentrate or can be formulated with conventional scale and corrosion chemistries to boost their performance.

**Table 1** compares the metal stability coefficients of Biochelat™, Citric Acid, and EDTA.

**Table 1 - Metal Stability Coefficients, Log(10) Values**

CATION	BIOCHELATE™	CITRIC ACID	EDTA
Copper	40	7	20
Iron	37	11	27

Based on the Log(10) values in **Table 1**, it can clearly be seen that Biochelat™ has a significantly higher affinity for Iron and Copper than both Citric Acid and EDTA.

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**SCALESOL™**

Solugen’s flagship scale control products, available in concentrates or ready to use formulations, target calcium, magnesium, and iron-induced scale buildup and formation in irrigation networks.



**CORRSOL™**

Solugen’s flagship corrosion control products, available in concentrates or ready to use concentrations, are designed to minimize corrosion and maximize asset integrity.



**SPECIFIC APPLICATIONS**

Solugen products can be used to treat water and associated infrastructure in the following application areas:

- + Irrigation Treatment
- + Vertical Farming
- + Hydroponics
- + Horticulture

