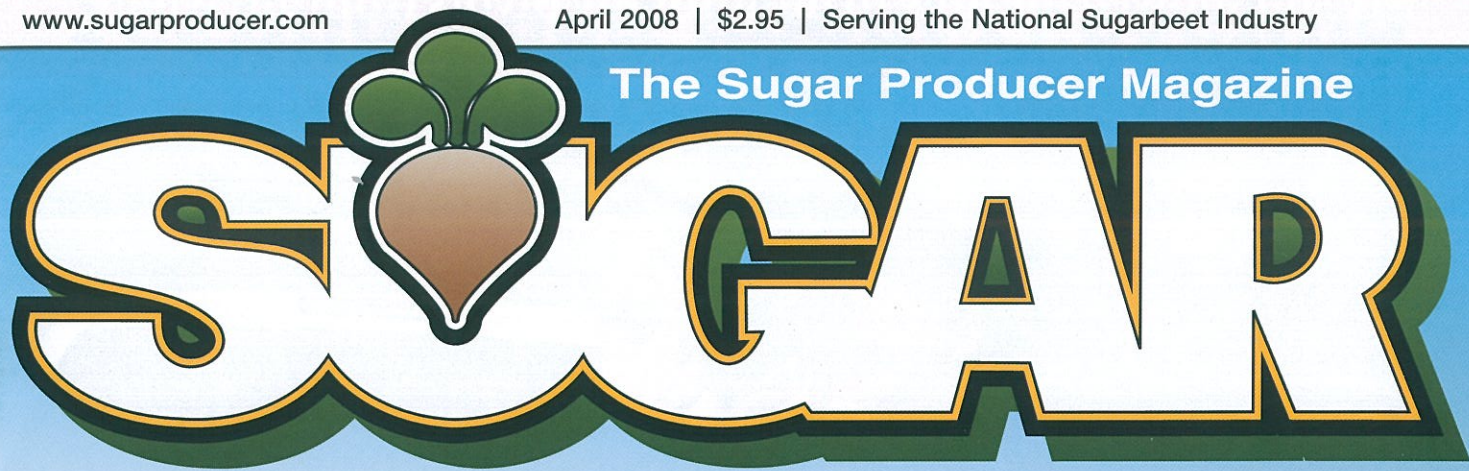


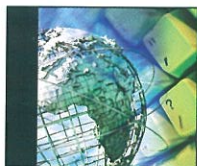
The Sugar Producer Magazine



# The Road to Biotechnology

- Where are we?
- Where are we going?
- What can we look forward to?





## Precision Irrigation

by David Porter

# Take Out Guess Work

Gro-Point stands up to specific circumstances

If there is one thing that is impossible to argue in the world of agriculture, it is the need for water during the growing season. But there is some disagreement about how much water is optimal, when to apply it and how to monitor water application efforts.

While there are many different ways to model water use and innovative ways to look at conservation, there is a method that allows efficient watering for high yield and quality. That's high-quality soil-moisture based precision irrigation, as offered through systems like Gro-Point by Environment Sensors Inc. (ESI).

### THE TECHNOLOGY

Having cut its teeth for the past two decades serving soil scientists, researchers and academics, ESI has along the way refined soil moisture sensors. ESI has more recently designed an entire system that enables precision irrigation with frost protection alarms that is easy to install and easy to use. The technology is similar to radar and offers reliability and accuracy not available in traditional soil sensors.

The system sensors themselves are small—about the size of a butter knife—so that soil disruption is minimized on installation. In addition, the sensors can stand up to variable field conditions.

### ASSESSMENTS

Gro-Point can be used with a simple handheld reader, data-logger or connected to a wireless delivery system that provides information directly to the user's desktop.

The information enables the user to make decisions like when to irrigate and how much water to apply. There is also an option to add an override to time-set irrigation based on prevailing

soil moisture levels, ensuring water is only applied when needed.

The entire system is configurable, allowing users to set thresholds for watering and override, based on their specific soil conditions and crop's requirements.

### TWO MODELS

The sensors come in two different models: Lite and Pro.

The Gro-Point Lite provides a single reading for the percentage of moisture in the soil. This can be used to set lower and upper limits for soil moisture and provide irrigation information to optimize crop health and for efficient water use.

The Pro model combines a soil moisture reading with three additional readings from one sensor, including bulk conductivity (salinity), temperature and wetting front. It is the only sensor of its kind to offer four powerful readings from one sensor.

This sensor not only indicates when to start irrigation (low soil moisture levels), but also precisely when to stop (when the wetting front reaches the wetting front sensor).

The Gro-Point Pro compensates automatically for salinity and temperature, allowing for increased accuracy in challenging conditions. A built-in temperature-based alarm mode will alert users when their frost protection system is needed or if heat stress is likely to occur.

The entire system operates with little to no maintenance and requires no technical capability for installation outside of basic desktop computer skills. ■

**Editor's note:** Porter is vice president of Sales and Marketing, ESI-Environmental Sensors Inc. Call 800-799-6324 or visit [www.esica.com](http://www.esica.com).

MANA  
MAKES  
SENSE.



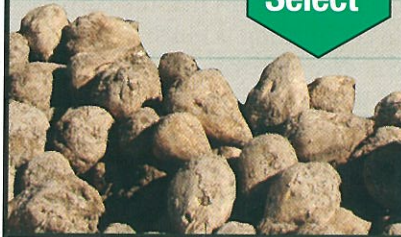
IMPROVE YIELDS  
IN SUGARBEETS  
WITH PROVEN  
CONTROL  
AT THE RIGHT PRICE.

A postemergence application of Arrow™ herbicide effectively controls a wide range of the toughest annual and perennial grasses in sugarbeets. Arrow™ contains clethodim, the number one post applied grass active ingredient. It provides outstanding performance and excellent crop safety. All at the right price. Make the most of sugarbeets with Arrow from MANA.

**Arrow™**  
HERBICIDE

ALWAYS READ AND  
FOLLOW LABEL DIRECTIONS.  
©2008 Arrow of MANA (Makhteshim  
Agan of North America, Inc.)  
Select® of Valent.

Contains the  
same active as  
**Select®**



**MANA**  
Crop Protection  
MAKES SENSE.  
[www.manainc.com](http://www.manainc.com)