




# TRANSPIRA™

POWERED BY  
 treetoscope

2023   
NEW PRODUCT  
CONTEST Winner  
Irrigation Association  
Agriculture Irrigation Category | TIER 1



- Make precise irrigation decisions
- Manage water stress
- Enhance yield and profitability

## DIRECT PLANT SENSING

Toro Transpira™ empowers growers to measure what matters: plant water consumption. Our solution gathers data directly from the plant using a device that is simple to install and manage. It's not just about monitoring water; it's about providing growers with actionable insights for superior crop management.

## Key Features & Benefits:

### Crop-Specific, Actionable Information

Our direct plant sensing technology accurately measures water usage tailored to your specific crop. We combine this and local weather forecasts to estimate irrigation requirements for the week. With Transpira, you can view water consumption and future irrigation requirements in inches, gallons, or system run time – making it easier to build a schedule based on actual crop water needs.

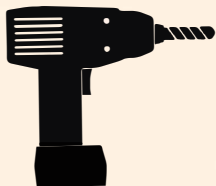


### Stress Management

By measuring your crop's actual water usage and comparing it with potential water usage (ETc), you can identify stress events related to water availability, nutrition, or other limiting factors. It also validates the impact of reduced water applications during deficit irrigation.

### User-friendly Dashboard

The dashboard simplifies crop water management by displaying only the most important information. This allows users to interpret and act on the data, regardless of technical expertise.



### Quick Installation Process

Transpira is designed for quick setup. It can be installed in under 10 minutes using basic tools, which means low installation effort and no need for expert teams. Simple hardware also makes it easy to maintain, making it a user-friendly choice for growers of any size.



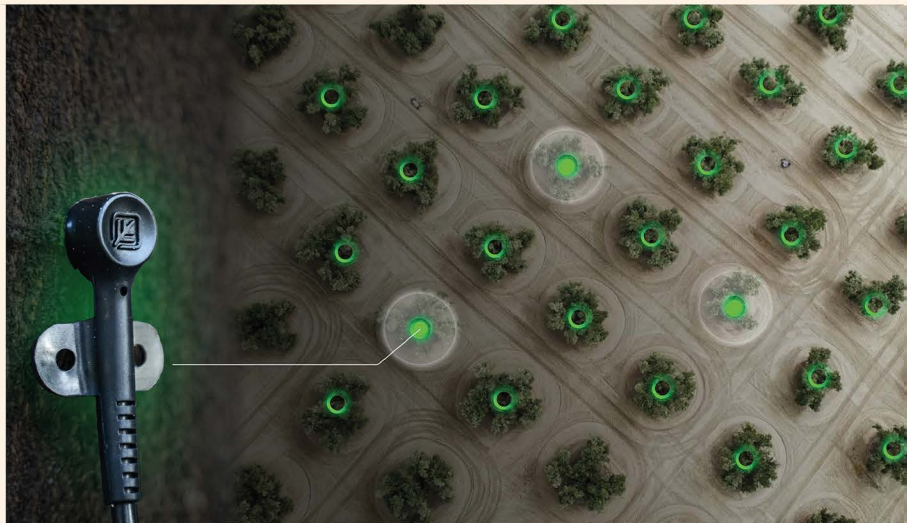
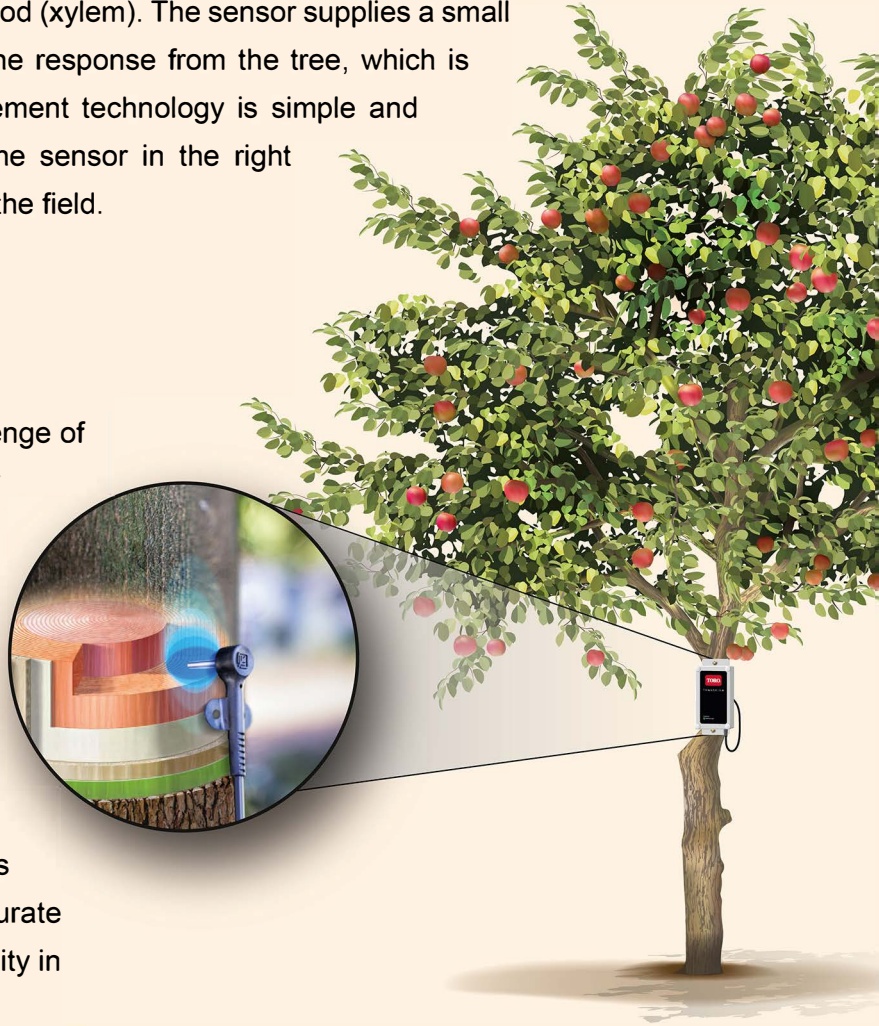
## How It Works

The process for measuring water consumption in your field begins inside the plant. Our solution is based on monitoring sap flow (the movement of water and nutrients) using a simple, low-profile sensor installed in the tree's sapwood (xylem). The sensor supplies a small amount of heat to the area and measures the response from the tree, which is directly correlated to sap flow. The measurement technology is simple and proven – the challenge has been placing the sensor in the right location on the tree and the right trees within the field.

## The Water Balance Algorithm

With Transpira, we have addressed the challenge of field variability through our cutting-edge water balance algorithm. This algorithm considers various environmental conditions and biological factors to normalize the sensor output, offering a comprehensive solution for sensor placement.

Our advanced algorithm empowers us to confidently place the sensor in various locations on the tree while ensuring accurate readings. The result? Consistency and reliability in a wide range of field conditions.



## Getting Started with Transpira

### Step 1: Find a Toro Transpira Dealer

Begin your journey with Transpira by connecting with your local Toro Transpira dealer. If you need assistance locating a dealer, please reach out to us at [transpira@toro.com](mailto:transpira@toro.com), and we'll help you find one.

### Step 2: Share Your Block Details

Work with your dealer to build a map of your block within the Transpira dashboard and gather vital site-specific information such as soil type, crop variety, age, and plant spacing.

### STEP 3: Receive Tailored Sensor Placement Recommendations

Our experts will create a site analysis map, offering a recommendation for sensor quantity and placement while allowing you to adjust if necessary.

### STEP 4: Experience Hassle-Free Installation

Your trusted Toro dealer will come out to your farm to install your sensors! This quick and easy process only takes about 10 minutes to install each sensor.

### STEP 5: Access Your Dashboard

Approximately 2 weeks after installation, you'll receive full access to your data on the Transpira Dashboard. Additionally, you will receive comprehensive dashboard training and round-the-clock support from the dedicated Toro Transpira Team.



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