

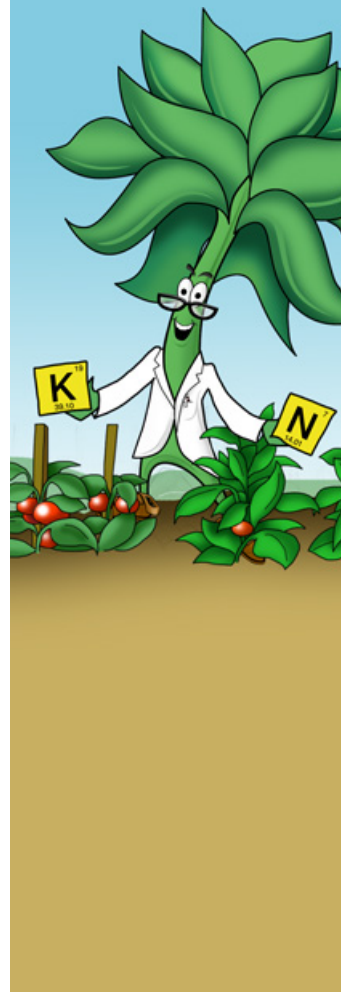
### Critical Nutrient Problems Can Limit Yields.

Proper nutrient management is key to healthy plant growth, especially with high-value vegetable crops that have a short growing season. Maintaining the right amounts of nitrogen and potassium is essential for achieving crop yield and size requirements. However, too little or too much can cause problems. In fact, over-application can be just as detrimental as a deficiency. That's because excessive fertilizer impairs yield production, increases input costs and contributes to surface water runoff. The goal is to feed plants according to their physiological requirements. These can vary widely from field to field and throughout the growing season.

### In-field Nutrient Measurement Allows Immediate Management Decisions.

While vegetable growers have used traditional petiole sap testing for years as a means for monitoring the nutrient concentrations in their crops, that old-school method has drawbacks. Petiole samples must be collected, dried and sent to a commercial laboratory for analysis. The process requires a lot of time, typically a week or more. A quicker approach is to use in-field measurement tools on a regular basis, every seven to 10 days, because nutrient levels can change rapidly. Nitrogen, in particular, is a very mobile and reactive element. These quick-test tools determine how much nitrogen or potassium is present and provide *immediate* readings so there is no delay in waiting for a laboratory analysis. Growers can compare this instant information with general guidelines, such as the ones shown below, to make on-the-spot decisions concerning fertigation adjustments. This offers significant economic and environmental benefits. By applying the right amount of nutrients, you can save money, optimize yields and help safeguard the environment.

*"Nitrogen (N) and Potassium (K) are vital building blocks for plant health. Ask your plants if they have the right amounts by performing in-the-field petiole sap testing."*



### SAMPLE GUIDELINES – (UC Davis)

Crop: Tomato		
Stage	Dry Wt. Nitrate-N	Sap Nitrate-N
First bloom	10,000 to 14,000 ppm	700 to 900 ppm
1-inch fruits	8,000 to 9,000	500 to 600
First harvest	5,000 to 6,000	400 to 500
Final harvest	3,000 to 4,000	300 to 400

University guidelines available for your vegetable crop at [www.specmeters.com](http://www.specmeters.com).

## Put the Power of a Laboratory Right in Your Hands with Cardy Meters.

Perform fast, direct nutrient testing to analyze fertigation effectiveness! Cardy Meters bring microprocessor technology to the field for on-site nutrient measurement. The Cardy's unique, flat sensor allows you to conveniently and accurately measure small samples. Measurement readouts are shown on the LCD display. These meters are ideal for drip- and pivot-irrigated vegetable crops, including tomatoes, bell peppers, broccoli, celery, sweet corn, lettuce, watermelons and potatoes.

### 2305G Cardy Twin Nitrate Meter



Use this self-contained, waterproof, pocket-sized meter to measure samples as small as 0.3 mL.

- Sensor stores dry and is field replaceable
- Measures from 14 to 1,400 ppm
- Accuracy correlates well with laboratory analysis
- Includes batteries, case and calibration standards



### 2400G Cardy Potassium Meter



### Meet our Expert!

Rob Knapp joins Spectrum Technologies, Inc. as our new Horticulture Specialist. He offers this advice:

*"Vegetable crops require proper nutrient levels to maintain top quality and achieve maximum economic yield. Here's the good news: Measuring nitrogen and potassium doesn't have to be difficult or time-intensive! With our handheld meters, you can take measurements quickly, accurately and easily. And I can offer tips to help you get started."*

**Rob welcomes your questions. Call him toll free at (800) 248-8873 or send an email to [rknapp@specmeters.com](mailto:rknapp@specmeters.com).**

[Click here to read more about Rob.](#)

### Collect Samples Quickly, Easily with a Spectrum Sap Press



### Handheld Plant Sap Press

Made of high quality, non-corrosive metal

Includes cleaning device



This exceptionally small and portable digital meter delivers quick answers to potassium-level questions.

- Sensor stores dry and is field replaceable
- Automatic range switching from 0 to 9,900 ppm
- Accuracy correlates well with laboratory analysis
- Includes a carrying case, standards and accessories



**Have questions?**  
**Call Rob Knapp toll free: (800) 248-8873**  
**or send an email to [rknapp@specmeters.com](mailto:rknapp@specmeters.com).**

**Spectrum<sup>®</sup>**  
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***“To Measure Is To Know”***

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