

# SOIL TEST INSTRUCTIONS

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Soil testing of mineral soil requires the Soil Test Kit. A starter kit is included with the LAQUA K<sup>+</sup> meter #2400GL. Additional supplies can be ordered through a distributor or by calling Spectrum Technologies directly.

## Measurement Procedure:

1. Measure 1 level measuring spoon (11cc) full of dry soil into the soil sample cup. The soil should be pulverized and sifted through a flour sifter.
2. Add “2” (50cc) measuring spoons of aluminum sulfate extractant to the soil.
3. Mix the soil and the solution by stirring with the spoon for at least 2 minutes, making sure the soil sample is thoroughly mixed with the distilled water. Let stand for 5 minutes
4. Fold a circular filter in half ‘twice’ and open it up to form a cone. Place it in the soil suspension as far as possible. The filtration will take place from the outside of the filter to the inside.
5. As soon as sufficient filtrate accumulates in the filter, use the small pipette to transfer the soil extract onto the sensor of the LAQUA Meter.
6. After the value has stabilized (30 - 45 sec.), read the value from the digital display. Multiply the display value by 10 to correct for the dilution. For lbs/acre, multiply by 2.
7. Rinse sensor and blot dry. Display should read “0” with distilled water on it. If it doesn’t, rinse again.

# MEASUREMENT OF TISSUE SAP

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## **Sample Collection:**

When conducting a test on plant materials, the biggest source of error is due to sampling. This error results when a sample is not representative of the source. Follow these steps to gather and care for your sample:

- 1.) Do not sample plants which show obvious signs of nutrient deficiency or damage from disease, insects, or chemicals unless these plants are the subject of a study. Plants which have been under stress for a period of time may not give a true picture of the nutrient status of the field.
- 2.) The leaves or parts of leaves selected should be of the same age and relative position on the plant. The most recently matured leaves should be used. These are the leaves that have stopped expanding in size. The petiole or leaf stem of the leaf or appropriated plant material should be used for the test.
- 3.) A minimum of 25 petioles or leaves should be collected. This is enough to represent a five to ten acre field if the field is judged to be uniform. Chop up the petioles and mix and sub-sample these pieces for testing. Crops with small, dry petioles, such as strawberries require much larger samples to get enough sap compared to fleshy crops such as tomatoes. Store whole petioles, not leaves, at room temperature for up to 1½ hours or on ice for up to eight hours. Cold petioles should be warmed to room temperature before taking a measurement.

**PETIOLE POTASSIUM  
SUFFICIENCY LEVELS  
(SOURCE: UNIVERSITY OF FLORIDA)**

<b>Crop</b>	<b>Growth Stage</b>	<b>K (ppm)</b>
Tomato (field)	First Buds	3500-4000
	First Open Flowers	3500-4000
	First 1-inch Diameter	3000-3500
	First 2-inch Diameter	3000-3500
	First Harvest	2500-3000
	Second Harvest	2000-2500
Tomato (Greenhouse)	Transplant to second fruit cluster	4500-5000
	Second cluster to fifth fruit cluster	4000-5000
	Harvest Season (Dec. -June)	3500-4000
Bell Pepper	First Flower Buds	3200-3500
	First Open Flowers	3000-3200
	Fruits Half-Growth	3000-3200
	First Harvest	2400-3000
	Second Harvest	2000-2400
Eggplant	First Fruit (2-inches long)	4500-5000
	First Harvest	4000-4500
	Mid Harvest	3500-4000
Potatoes	Plants 8-inches Tall	4500-5000
	First Open Flowers	4500-5000
	50% of Flowers Open	4000-4500
	100% of Flowers Open	3500-4000
	Tops Falling Over	2500-3000

## SUFFICIENCY LEVELS CONTINUED:

<b>Crop</b>	<b>Growth Stage</b>	<b>K (ppm)</b>
Annual Hill Strawberries	November	3000-3500
	December	3000-3500
	January	2500-3000
	February	2000-2500
	March	1800-2000
	April	1500-2000
Watermelon	Vines 6-inches Long	4000-5000
	Fruit 2-inches Long	4000-5000
	Fruit One-Half Mature	3500-4000
	At First Harvest	3000-3500