

# **Spectrum<sup>®</sup>** **Technologies, Inc.**

## Soil Test Kit Instructions for Cardy Potassium Meter

The soil test kit (item #2434) contains the following:

<u>Quantity</u>	<u>Item</u>
1	Packet soil extractant (item 2428)
1	2000 ppm calibration standard (item 2415)
1	20 ppm calibration standard (item 2417)
3	Sample cups
1	11 ml measuring spoon
1	50 ml measuring spoon
30	Filter papers
1	Pipet
1	Mixing spoon

### SAMPLE COLLECTION

Collect at least 15 to 20 core samples from an area not exceeding ten acres by using a Z pattern. Areas having different soil types or management histories should be sampled separately. Sample the top 12 inches of soil. Some universities recommend sampling the top 24 inches in 12-inch increments. Contact your county extension agent for recommendations. Care should be taken to ensure that the soil samples are not biased by the presence of rows or bands of fertilizer.

### SOIL PREPARATION

Before drying, crumble the soil to avoid large clods that will be difficult to crush when dry. The samples should then be dried by spreading on a thin layer of newspaper at least 3 pages thick and placing over night in a warm spot ideally with air movement. Soil will dry in a few hours if placed in a sunny location exposed to the wind. If dried indoors, 24 to 48 hours may be required. Indoor drying time can be reduced if a fan is used. For oven drying spread a thin layer of soil on a cookie sheet or pie plate. Place it in an oven set to no more the 250° F with the door slightly ajar. Soil samples can be dried rapidly in a microwave by spreading soil thinly on a dish and microwaving at full power for 5 to 8 minutes. Consider the soil dry when it crumbles rather than compacts under pressure. After drying, crush the soil by using a block of wood or other suitable device. Crush until the soil particles are the size of BB's or smaller. If possible, sift with a flour sifter or other 10 mesh-screening device. Mix the soil thoroughly.

## METER CALIBRATION

The calibration procedure is the same as outlined in the meter's User's Manual. When doing soil testing, calibration should be done with the solutions included in the soil test kit (items 2415 and 2417) because they both include aluminum sulfate. Do not use the same solutions that are used for water and tissue sap.

## PREPARING SOIL EXTRACTANT

Prepare the soil extractant by mixing the granules into a gallon of distilled water.

## MEASUREMENT PROCEDURE

1. Measure one level 11ml measuring spoon of dry soil into the soil sample cup. The soil should be pulverized and sifted.
2. Add two 50ml measuring spoons of the aluminum sulfate extractant solution to the soil.
3. Mix the soil and the extractant solution by stirring with the spoon for at least 2 minutes, making sure the soil sample is thoroughly mixed with the extractant. Let stand for 5 minutes.
4. Fold a circular filter in half twice and open it up to form a cone. Place the cone 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 pipet to transfer the soil extract onto the sensor of the Cardy meter.
6. After the value has stabilized (30-45 seconds), read the value from the digital display. Multiply the display value by 10 to correct for the dilution. To convert to lbs./acre, multiply by "2".
7. Rinse the sensor pad clean with distilled water and blot dry. The display should read close to "0" with distilled water on it. If not repeat the rinse.

***Spectrum Technologies, Inc.***  
12360 S. Industrial Dr. E.  
Plainfield, IL 60585  
800-248-8873 / 815-436-4440  
815-436-4460  
[www.specmeters.com](http://www.specmeters.com)