

## IMPORTANT INFORMATION REGARDING YOUR NEW 4-WAY ANALYZER

### HOW TO USE YOUR ANALYZER TO MEASURE FERTILITY

1. Remove the top 2" of the soil. Break up and crumble the soil underneath to a total depth of 5".
2. Thoroughly wet the soil with water (ideally rain or distilled water) to a mud consistency.
3. Wipe the meter probes clean with a tissue or paper towel.
4. Move the switch to the first (top) position.
5. Insert the probes into the soil to within 1" of the casing Allow approximately 10 seconds for the reading to stabilize.
6. Record the reading. Remove the probes from the soil and clean thoroughly.

The standards by which the instrument is calibrated are as follows:

	Too Little	IDEAL Range	Too Much
Nitrogen	50 PPM	50 to 200 ppm	200 PPM
Phosphorous	4 PPM	4 to 14 ppm	14 PPM
Potash	50 PPM	50 to 200 ppm	200 PPM

• ppm is defined as parts-per-million

### IF THE TESTER READS "Too Little":

1. Liquid feed with a brand of soluble fertilizer that is recommended for the plants you intend to grow.
2. Liquid feed within 3 weeks after planting or potting and do this every month whenever you water your plants.

### IF THE TESTER READS "IDEAL":

1. Water once a month with a soluble fertilizer that is recommended for the plants you are growing.

### IF THE TESTER READS "Too Much":

1. Water thoroughly to leach out the excess fertilizer from the soil.
2. For potted plants, repot with new soil.
3. For greenhouse plants water thoroughly to leach excess fertilizer from the soil.
4. Do not add any fertilizer. You can add manure, compost, clippings, plant wastes, residues, leaves and any other organic matter to the soil.

### HOW TO USE YOUR METER TO MEASURE LIGHT

1. Move the switch to the 2nd position.
2. Point the photocell on the top of the analyzer directly at the light source while holding the Analyzer at leaf level. Avoid positioning your hand or body between the light source and the plant or position you are measuring.
3. Record the reading (x 1000) and the time of day.
4. Take readings in the mid-morning, mid afternoon and early evening to determine the average light intensity.

Example:

9 AM reading	X	4 hours	=	Foot-candle hours
(Average between 7AM and 11AM)				
1 PM reading	X	4 hours	=	Foot-candle hours
(Average between 11AM and 3PM)				
5 PM reading	X	4 hours	=	Foot candle hours
(Average between 3PM and 7PM)				
Total Daily Foot Candle Hours				Total From Above

**Maximum Foot-candle hours: 50,000**

**Minimum Foot-candle hours: 25,000**

*This category of plants will thrive in full sunlight for medium short periods.*

*East and South exposures are preferred.*

<b>Bulbs:</b>	Agapanthus	Amaryllis	Anemone
	Calla Lily	Hoemanthus	Ixia
	Montbretia	Ranunculus	Tulbaghia
<b>Flowering Plants:</b>	Bird of Paradise	Chrysanthemum	Geranium
	Gerbera	King's Crown	Lilies
	Miniature Rose	Poinsettia	Shrimp Plant
<b>Foliage Plants:</b>	Agave	Aloe	Aporocactus
	Astorphytum	Caphalocereus	Echeveria
	Enchinocactus	Echinopsis	Eucalyptus
	Gymnocalycium	Herbs	Iresine
	Jerusalem Cherry	Lobivia	Mamillaria
	Nofocactus	Pereskia	Polyscias
	Rebutia	Stapelia	
<b>Shrubs:</b>	Acalypha	Allamanda	Azalea
	Bouganvillea	Coccoloba	Croton
	Flowering Maple	Hydrangea	Ixora
	Myrtle	Privet	Pyracantha
	Rhododendron	Stephanotis	

**Maximum Foot-candle hours: 37,500**

**Minimum Foot-candle hours: 20,000**

*This category requires bright light with little direct sunlight.*

*East and West exposures are preferred.*

<b>Bulbs:</b>	Clivia	Daffodil	Hyacinth
	Narcissus	Tulip	
<b>Flowering Plants:</b>		Cineraria	Crossandra
	Cyclamen	Gloxinia	King's Crown
	Lipstick Vine		
<b>Foliage Plants:</b>	Beaucarnea	Coleus	Columnnea
	Crassula	Euphorbia	Fatsia
	Filtonia	Haworthia	Hypoestes
	Joseph's Coat	Rhipsalis	Rhoeo
	Saxifraga	Swedish Ivy	Tomiea
	Tradescantia	Wax Plant	Zebra Plant

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**LIMITED WARRANTY**

The tester is warranted free from defects for one year from date of purchase. During this period the unit may be returned to Luster Leaf Products, Inc. with proof of purchase and \$5.00 to cover postage and handling. It will be repaired or replaced during the initial 90 days of this warranty period. The selling dealer is also authorized to replace a defective meter.

This warranty does not cover abuse, accidental damage, repair by anyone other than Luster Leaf Products, Inc., or consequential loss or inconvenience resulting from use of the meter.

This warranty gives you certain specific legal rights and you may also have other rights which vary from state to state.

**SERVICE**

If adjustment or repair becomes necessary after the warranty expires, return the meter to Luster Leaf Products, Inc. with \$7.50 to cover postage, handling and service. Service includes labor and parts as required, except for replacement of externally damaged or lost components.

For service, or information regarding other Luster Leaf Products, Inc. products, please address:

Luster Leaf Products, Inc.

2220 Techcourt, Woodstock, IL 60098

**CLEANING PAD REORDER FORM**

To obtain replacement cleaning pads for your meter, please complete:

QTY \_\_\_\_\_ Pkg(s) of 3 Cleaning Pads @ \$2.00 \_\_\_\_\_  
 Add \$1.00 for Postage & Handling \_\_\_\_\_  
**TOTAL \$** \_\_\_\_\_

Send check or money order payable to Luster Leaf Products, Inc.  
 (no COD please) to: Luster Leaf Products, Inc.  
 2220 Techcourt, Woodstock, IL 60098

SHIP TO: Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

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continued...

**Maximum Foot-candle hours: 37,500**

**Minimum Foot-candle hours: 20,000**

*This category requires bright light with little direct sunlight.*

*East and West exposures are preferred.*

<b>Shrubs:</b>	Ardisia	Aucuba	Camellia
Clerodendrum	Coffea	Dipladenia	Eleagnus
Eunonymus	Fuchsia	Gardenia	Nandina
Silk Oak			

**Maximum Foot-candle hours: 27,500**

**Minimum Foot-candle hours: 15,000**

*Plants in this category thrive on bright indirect light with no direct sun light. North exposures are preferred. Subdued light by screening or a lightweight curtain will*

*be adequate at East, South, or West exposures.*

<b>Bulbs:</b>	Caladium		
Flowering Plants:	Achimenes	African Violet	Begonia
Christmas Cactus	Flowering Tobacco	Impatiens	Orchids
<b>Foliage Plants:</b>	Acorus	Anthurium	Brassia
Bromeliads	Cissus	Helxine	Hypoestes
Norfolk Island Pine	Pandanus	Pellionia	Peperomia
Pilea	Prayer Plant		

**Maximum Foot-candle hours: 15,500**

**Minimum Foot-candle hours: 7,500**

*The plants in this category are best suited to dim light. Light intensities within the interior of a room away from windows are preferred.*

<b>Foliage Plants:</b>	Asparagus	Aspidistra	Chlorophytum
Chineae Evergreen	Cyperus	Dieffenbachia	Dracena
English Ivy	Ferns	Ficus	Liriope
Palms	Philodendron	Pothos	Selaginella
Snake Plant	Spathiphyllum	Syngonium	
<b>Shrubs:</b>	Pittsoporum	Podocarpus	

## HOW TO USE YOUR METER TO MEASURE SOIL MOISTURE

1. Move the switch to the 3rd position.
2. Insert probes into soil up to plastic base, about half way between the edge of the container and the stem of the plant. Do not push the probe too near the stem.
3. Note the reading.
4. Remove the probes from the soil. Wipe thoroughly with a soft cloth or tissue before taking another reading or putting away.
5. Do not leave the probe in soil for long periods of time. Do not use in liquids!

## General Watering Advise

Each plant in the Watering Chart has been given a "watering number". For each plant, water only when the needle registers on or below the watering number. Plants with higher watering numbers (3 or 4) like to be kept moist. Plants with lower numbers prefer drier conditions. Check small pots more often than larger ones, they dry out more quickly. Over-watering rots plant roots so don't water too frequently.

## General Watering Guide (Containerized Growing)

Vegetables	2-3
Annuals/Biennials	1-2
Perennials	2-3
Shrubs (flowering)	2-3
Shrubs (foliage)	1-2

**Watering No. 1**

Aloe  
 Calceolaria  
 Cape Ivy  
 Cardinal Flower  
 Century Plant  
 Ceropegia  
 Dipladenia  
 Dumb Cane  
 Evonymus  
 Figs  
 Flaming Katy  
 Geranium

Gold-Dust Plant  
 Hens and Chicks  
 Inch Plant  
 Jade Plant  
 Jelly Bean Plant  
 Kalanchoe  
 Kaffir Lily  
 Lantana  
 Lucky Clover  
 Myrtle  
 Orchid  
 Panda Plant

Peperomia  
 Poinsettia  
 Pony Tail  
 Shrimp Plant  
 Snake Plant  
 Sugar Almond  
 Umbrella Tree  
 Verbena  
 Vriesia  
 Wandering Jew

**Watering No. 2**

African Violet  
 Amaryllis  
 Aralia  
 Arrowhead Vine  
 Bamboo Palm  
 Bird of Paradise  
 Black-Eyed Susan  
 Browalia  
 Burro's tail  
 Buxus  
 Cacti and Succulents  
 Cast iron Plant

Castor Oil Plant  
 Chinese Evergreen  
 Cineraria  
 Crown of Thorns  
 Devil's Ivy  
 Easter Lily  
 Fat-headed Lizzie  
 Figs, Weeping  
 Glory Lily  
 Grape Ivy  
 Hibiscus  
 Jerusalem Cherry

Monstera  
 Nicotemia  
 Norfolk Island Pine  
 Parasol Plant  
 Philodendron  
 Rubber Plant  
 Silk Oak  
 Snakeskin Plant  
 Swedish Ivy  
 Wax Plant

**Watering No. 3**

Baby's Tears  
 Bay Tree  
 Begonia Rex  
 Begonia  
 Bloodleaf  
 Bottlebrush Plant  
 Buddhist Pine  
 Busy Lizzie  
 Caladium  
 Calla Lily  
 Camelia  
 Chenille Plant  
 Christmas Cactus  
 Christmas Pepper  
 Chrysanthemum  
 Clerodendrum  
 Coleus

Columnnea  
 Copperleaf  
 Coral Berry  
 Creeping Moss  
 Cupid's Bower  
 Cyclamen  
 Dracena  
 Figs, Creeping  
 Finger Aralia  
 Flowering Maple  
 Friendship Plant  
 Fushia Plant  
 Gloxinia  
 Hedera Ivy  
 Heliotrope  
 Jacaranda  
 Jacobinia

Kangaroo Thorn  
 Mosaic Plant  
 Nasturtium  
 Oleander  
 Parlor Palm  
 Passion Flower  
 Pilea  
 Plume Flower  
 Prayer Plant  
 Primula  
 Sensitive Plant  
 Spider Plant  
 Vase Plant  
 Velvet Plant  
 Violet Flame  
 Zebra Plant  
 Peppers

**Watering No. 4**

Anthurium  
 Azalea  
 Bougainvillea  
 Butterfly Flower  
 Ferns  
 Gardenia

Hyacinth  
 Hydrangea  
 Jasmine  
 Lady Palm  
 Painters Palette  
 Peace Lily

Pigmy Date Palm  
 Umbrella Plant  
 Venus Flytrap  
 Tomatoes  
 Melons

### HOW TO USE YOUR METER TO MEASURE pH

1. Remove the top 2" of the surface soil. Break up and crumble the soil underneath to a total depth of 5". Remove any stones or organic debris such as leaves and twigs because they can affect the final result.
2. Thoroughly wet the soil with water (ideally rain or distilled water) to a mud consistency.
3. Move the switch to the last (bottom) position.
4. Wet probes. Polish probe on the FAR RIGHT ONLY, with the enclosed special cleaning pad.
5. Insert probes into soil up to plastic base.
6. Wait one minute and take reading.
7. Wipe the probes clean and dry.

### TO RAISE OR LOWER pH OF YOUR SOIL

Raising and lowering pH is not an exact science and most plants have a reasonably wide tolerance, certainly to within 1 pH point. Altering pH takes time so do not expect rapid changes; rather, work steadily towards giving a plant its ideal conditions.

### HOW MUCH TO APPLY

How much to apply depends on the particle size of your soil – a sandy soil needs less lime for an equivalent pH change than a heavy clay but will not hold its pH as long.

### SOIL TYPES

#### Sandy Soils

A light, coarse soil comprised of crumbling and alluvial debris .

#### Loam Soils

A medium friable soil, consisting of a blend of coarse (sand) alluvium and fine (clay) particles mixed within fairly broad limits with a little lime and humus.

#### Clay Soils

A heavy, clinging, impermeable soil, comprised of very fine particles with little lime and humus and tending to be waterlogged in winter and very dry in summer.

Material	pH Change	Soil Type		
		Sandy	Loamy	Clay
Ground Limestone (Dolomitic or calcic)	+1/2 unit (.5 pH)	2.5	5	5.5
	+1 unit (1.0 pH)	58.5	11	
Hydrated Lime	+1/2 unit (.5 pH)	1.5 - 2	3 - 4	4 - 4.5
	+1 unit (1.0 pH)	3.5 - 4	6 - 6.5	8 - 8.5
Iron Sulfate	-1/2 unit (.5 pH)	0.75	1.5	2
	-1 unit (1.0 pH)	1.5	3	4
Aluminum Sulfate	-1/2 unit (.5 pH)	.5 - .75	1 - 1.25	1.5
	-1 unit (1.0 pH)	1 - 1.25	2.25	3

Amounts listed are pounds/100 sq.ft.

Do not add more than 5# of lime or 1/2# of sulfur/application.  
To use Sphagnum Peat Moss to increase acidity, mix in up to 1/3 of the total soil volume when planting acid loving plants.

