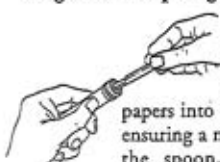



Stage One - Preparing the filtering device;




Unscrew the cap on the filtering device and remove the plunger. Place one of the filter papers into the bottom of the plunger ensuring a neat fit by using the end of the spoon. (Note: If the soil is particularly clay based or the solution that comes through is too cloudy, use two filter disks together).

Stage Two - Filtering the nutrients;


Fill the barrel to the 0.5/1ml mark as directed, with the dry soil and add test solution in relation to the test you are taking. Now insert plunger just inside barrel of device and gently shake the mixture for 30 seconds. Press the plunger down slowly until it touches the mixture, now place on the cap and screw down slowly until you



see the solution filter into the plunger inside.




NITROGEN (N) TEST

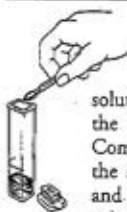


Follow stage one and then in stage two fill the barrel with 1ml of dry soil then add N1 test solution to the 2.5ml mark and complete the rest of stage two's instructions. Compress out enough solution to fill the square test tube to the 1ml mark and add one level spoon of

N2 powder. Cap the test tube and gently shake for 10 seconds and stand for 5 minutes. Now take a reading by holding the test tube against the Nitrogen reading chart.



PHOSPHORUS (P) TEST




Follow stage one and then in stage two fill the barrel with 0.5ml of dry soil then add P1 test solution to the 2ml mark and complete the rest of stage two's instructions. Compress out enough solution to fill the square test tube to the 1ml mark and add 1/2 level spoon of P2 powder using the narrow end of the spoon. Cap

the test tube and shake gently for 5 seconds and take the colour reading immediately by putting the test tube onto the white part of the leaflet and look down the tube to assess the colour against the Phosphorus Reading Chart.



POTASSIUM (K) TEST

Follow stage one and then in stage two fill the barrel with 0.5ml of dry soil then add K1 test solution to the 2ml mark and complete the rest of stage two's instructions. Compress out enough solution to fill the square test tube to the 1ml mark and add 0.5ml of K2 solution. Let the solution stand for 5 minutes before taking a reading. The solution will have degrees of cloudiness according to how much potassium is present. Place the test tube on the square printed over the black and shaded rectangles in the Potash Reading Chart. Place on the high reading first and move it down the chart until one of the boxes is just visible and that is your reading.



SOIL TYPES

- Sandy Soils** - A light, coarse soil comprised of sand and silt
- Loam Soils** - A medium 'crumbly' soil which consists of a blend of sand and fine clay mixed with a little lime and humus.
- Clay Soils** - A heavy, 'lumpy' soil comprised with small amounts of lime and humus which tends to be waterlogged in the winter months and very dry in the summer months.

ALTERING THE pH

Compare your test results for each area of soil in relation to the pH of the plants that you are going to plant (see Plant pH Preference list). Most plants have a reasonably wide tolerance of at least 1 pH point, and will be comfortable with a pH of around 6.5 but certain plants require an alkaline soil or a particularly acid soil. The type of soil in your garden will influence the amount of admixture needed to make a change to your soil's pH level.

To increase soil alkalinity -
Ground Limestone (g/m^2)

Soil Type	pH Change 6.0-6.5	pH Change 5.5-6.5	pH Change 5.0-6.5	pH Change 4.5-6.5
Sandy Soil	146	238	434	621
Loam Soil	187	383	621	961
Clay Soil	238	476	816	1200

To increase soil acidity; add Sulphate of Ammonia or Flowers of Sulphur in the quantities recommended by the manufacturers. The addition of Garden Compost or manure will often increase a soil's acidity level.

↳ LAWNS

Preparing a new lawn - Ideally you need a loam soil with a pH of between 6 and 7. Grass seeds do not germinate easily with a pH below 6 and the majority of grasses are not lime lovers. The addition of lime may be required if pH levels are below 6. Clay soils will often be found to have a low pH level.

An established lawn - Do not add lime unless your soil pH is low but remember that the annual addition of Sulphate of Ammonia, Garden Compost and/or manure will tend to reduce the pH level over time making the addition of lime necessary.

ALTERING THE NUTRIENT LEVELS

The easiest way to increase your soil's nutrient level is to add a fertiliser. There are many on the market and in all cases you should follow the manufacturers recommendations for best results. Nitrogen is best applied in Spring as this will encourage the growth of grass and leafy plants. Fast acting phosphorus and potash fertilisers may also be applied in Spring. Slow release phosphorus and potash should be applied in the Autumn.

SAFETY & HYGIENE

All the liquids and powders are safe if used correctly. Keep out of the reach of children and animals and ensure that you wash your hands thoroughly after each test. In the event the liquid or powder is swallowed, drink plenty of water and seek medical advice. Keep away from all food and drink.

pH

When buying new plants for an established or a new garden, it is important to test the pH of your soil to ensure the acidity levels are correct. Your soil's pH may be quite different in various parts of your garden, and therefore each area that you intend to plant should be tested.

NITROGEN (N)

This is essential for the growth of vegetation, especially grass and leafy plants. The right amount of nitrogen allows for healthy growth but too much is equally damaging and will affect the plants structure.

PHOSPHORUS (P)

This nutrient is necessary for strong root growth and root vegetables. It helps in the formation of buds and healthy stems. A lack of phosphorus will stunt the growth of a plant.

POTASSIUM (POTASH) (K)

This nutrient is important in the development of flowers and shrubs, the correct potassium levels ensure that flowers become more fragrant and have improved colour. In vegetables it ensures a better quality crop and also makes plants more resistant to disease.

pH AND YOUR SOIL

pH describes how acid or alkaline a soil is. A reading of pH7 is neutral, above means a chalky, alkaline soil. Whilst readings below pH7 down to pH4, indicate an acidic soil.

Plants vary in their preferences towards a high, neutral or low pH and you can see at a glance what your plants prefer in our Plant pH Preference list. By using our soil pH tester you can now decide either to alter your soil or whether to buy plants which are suitable for the type of soil you already have.

TAKING THE TESTS

General Preparation (obtaining the soil sample is the same procedure for all tests)

Remove the top 5cm (2") of soil and break up the soil underneath to a depth of approximately 12cm (5"). Place some of the soil into a container and remove all stones and debris such as leaves and twigs. Break the soil up and leave to dry naturally.

TESTING FOR pH

Put the dry soil into a test tube up to the 1ml mark. Add one spoon of barium sulphate then add the pH test solution to the 2.5ml mark. Cap the test tube and shake - leave to settle for 10 minutes (this may vary depending on your soil type). If the solution is taking too long to settle, add another scoop of barium sulphate and reshake. Compare the colour against the pH reading chart.

TESTING FOR N, P, K

Note: the filtering device and filter disks are used for nitrogen, phosphorus and potash tests to extract nutrients from the soil.

CLEANING & STORAGE

It is important to wash out all test tubes and filtering device in warm soapy water immediately after each test - rinse well and leave to dry. The kit should be stored in a clean and dry environment, preferably in a sealed container. Make sure all the bottles are properly sealed and that storage conditions are not subject to extremes of heat or cold.

Once opened the liquids and powders should be used within a twelve month period. The filter papers must remain dry to ensure results are not affected.

pH PREFERENCE LIST FLOWERS, ORNAMENTAL TREES & SHRUBS

NAME	pH RANGE	NAME	pH RANGE
Abelia	6.0-8.0	Cerastium	6.0-7.0
Acacia	6.0-8.0	Chrysanthemum	6.0-7.0
Acanthus	6.0-7.0	Cissus	6.0-7.5
Aconitum	5.0-6.0	Cistus	6.0-7.5
Adonis	6.0-8.0	Clarkia	6.0-6.5
Ageratum	6.0-7.5	Cleanthus	6.0-7.5
Allianthus	6.0-7.5	Clematis	5.5-7.0
Ajuga	4.0-6.0	Colchicum	5.5-6.5
Althea	6.0-7.5	Columbine	6.0-7.0
Alyssum	6.0-7.5	Convolvulus	6.0-8.0
Amaranthus	6.0-6.5	Coreopsis	5.0-6.0
Anchusa	6.0-7.5	Coronilla	6.5-7.5
Androsace	5.0-6.0	Corydalis	6.0-8.0
Anemone	6.0-7.5	Cosmos	5.0-8.0
Anthyllis	5.0-6.0	Cotonneaster	6.0-8.0
Arbutus	4.0-6.0	Crab Apple	6.0-7.5
Ardisia	6.0-8.0	Crocus	6.0-8.0
Arenaria	6.0-8.0	Cynoglossum	6.0-7.5
Arista	6.0-7.5	Daffodil	6.0-6.5
Armeris	6.0-7.5	Dahlia	6.0-7.5
Arnice	5.0-6.5	Day Lily	6.0-8.0
Asperula	6.0-8.0	Delphinium	6.0-7.5
Asphodeline	6.0-8.0	Deutzia	6.0-7.5
Aster	5.5-7.5	Dianthus	6.0-7.5
Astilbe	6.0-8.0	Dogwood	5.0-7.0
Aubretia	6.0-7.5	Edelweiss	6.5-7.5
Avens	6.0-7.5	Elaeagnus	5.0-7.5
Azalea	4.5-6.0	Enkianthus	5.0-6.0
Beauty Bush	6.0-7.5	Erica	4.5-6.0
Bergenia	6.0-7.5	Euphorbia	6.0-7.0
Bleeding Heart	6.0-7.5	Everlasting	5.0-6.0

pH PREFERENCE LIST FLOWERS, ORNAMENTAL TREES & SHRUBS

NAME	pH RANGE	NAME	pH RANGE
Bluebell	6.0-7.5	Firethorn	6.0-8.0
Broom	5.0-6.0	Forget-me-not	6.0-8.0
Buddleia	6.0-7.0	Forsythia	6.0-8.0
Buphtalum	6.0-8.0	Foxglove	6.0-7.5
Calendula	5.5-7.0	Fritillaria	6.0-7.5
Camassia	6.0-8.0	Fuchsia	5.5-6.5
Candytuft	6.0-7.5	Gaillardia	6.0-7.5
Canna	6.0-8.0	Gazania	5.5-7.0
Canterbury Bells	6.0-7.5	Gentiana	5.0-7.5
Carnation	6.0-7.5	Geum	6.0-7.5
Catalpa	6.0-8.0	Gladioli	6.0-7.0
Celosia	6.0-7.0	Globularia	5.5-7.0
Centaurea	5.0-6.5	Godetia	6.0-7.5
Goldenrod	5.0-7.0	Pansy	5.5-7.0
Gourd	6.0-7.0	Passion Flower	6.0-8.0
Grass Bent	5.5-6.5	Passque Flower	5.0-6.0
Clover	6.0-7.0	Paulownia	6.0-8.0
Fesau	6.0-7.5	Pea—Sweet	6.0-7.5
Meadow	6.0-7.5	Penstemon	5.5-7.0
Pampas	6.0-8.0	Peony	6.0-7.5
Rye	6.0-7.0	Periwinkle	6.0-7.5
Gypsophila	6.0-7.5	Petunia	6.0-7.5
Hawthorn	6.0-7.0	Pinks	6.0-7.5
Helianthus	5.0-7.0	Pittosporum	5.5-6.5
Helleborus	6.0-7.5	Plantain	6.0-7.5
Holly	5.0-6.5	Polygonum	6.0-7.5
Hollyhock	6.0-8.0	Polyanthus	6.0-7.5
Honeysuckle	6.0-7.5	Poppy	6.0-7.5
Hydrangea (Blue)	4.0-5.0	Portulaca	5.5-7.5
Hydrangea (Pink)	6.0-7.0	Primrose	5.5-6.5
Hydrangea (White)	6.5-8.0	Primula	6.0-7.5
Hypericum	5.5-7.0	Privet	6.0-7.0
Iris	5.0-6.5	Prunella	6.0-7.5
Ivy	6.0-8.0	Prunus	6.5-7.5
Juniper	5.0-6.5	Pyracantha	5.0-6.0
Kalmia	4.5-5.0	Pyrethrum	6.0-7.5
Kerria	6.0-7.0	Red Hot Poker	6.0-7.5
Laburnum	6.0-7.0	Rhododendron	4.5-6.0
Laurel	4.5-6.0	Rose: Hybrid Tea	5.5-7.0
Lavender	6.5-7.5	Climbing	6.0-7.0
Listris	5.5-7.5	Rambling	5.5-7.0
Ligustrum	5.0-7.5	Salvia	6.0-7.5
Lilac	6.0-7.5	Santpaulia	6.0-7.0
Lily of the Valley	4.5-6.0	Scabiosa	5.0-7.5
Lithospermum	5.0-6.5	Sea Grape	5.0-6.5
Lobelia	6.0-7.5	Sedum	6.0-8.0
Lupinus	5.5-7.0	Snapdragon	5.5-7.0
Magnolia	5.0-6.0	Snowdrop	6.0-8.0
Mahonia	6.0-7.0	Soapwort	6.0-7.5
Marguerite	6.0-7.5	Speedwell	5.5-6.5
Marigold	5.5-7.0	Spiraea	6.0-7.5
Mollinia	4.0-5.0	Spruce	4.0-5.0

**pH PREFERENCE LIST
FLOWERS, ORNAMENTAL TREES & SHRUBS**

NAME	pH RANGE	NAME	pH RANGE
Moraea	5.5-6.5	Stock	6.0-7.5
Morning Glory	6.0-7.5	Stonecrop	6.5-7.5
Moss	6.0-8.0	Sumach	5.0-6.5
Moss, sphagnum	3.5-5.0	Sunflower	6.0-7.5
Myosotis	6.0-7.0	Sweet William	6.0-7.5
Narcissus	6.0-7.5	Syringa	6.0-8.0
Nasturtium	5.5-7.5	Tamarix	6.5-8.0
Nicotiana	5.5-6.5	Tobacco	5.5-7.5
Pachysandra	5.0-8.0	Trillium	5.0-6.5
Paeonia	6.0-7.5	Tulip	6.0-7.0
Viburnum	5.0-7.5	Water Lily	5.5-6.5
Viola	5.5-6.5	Weyela	6.0-7.0
Violet	5.0-7.5	Wistaria	6.0-8.0
Virginia Creeper	5.0-7.5	Zinna	5.5-7.5
Wallflower	5.5-7.5		

VEGETABLES AND HERBS

Artichoke	6.5-7.5	Millet	6.0-6.5
Asparagus	6.0-8.0	Mint	7.0-8.0
Basil	5.5-6.5	Mushroom	6.5-7.5
Bean	6.0-7.5	Mustard	6.0-7.5
(Runner, Broad, French)		Olive	5.5-6.5
Beetroot	6.0-7.5	Onion	6.0-7.0
Broccoli	6.0-7.0	Paprika	7.0-8.5
Brussels Sprouts	6.0-7.5	Parsley	5.0-7.0
Cabbage	6.0-7.5	Parsnip	5.5-7.5
Calabrese	6.5-7.5	Pea	6.0-7.5
Carrot	5.5-7.0	Peanut	5.0-6.5
Cauliflower	5.5-7.5	Pepper	5.5-7.0
Celery	6.0-7.0	Peppermint	6.0-7.5
Chicory	5.0-6.5	Pistacio	5.0-6.0
Chinese Cabbage	6.0-7.5	Potato	4.5-6.0
Chives	6.0-7.0	Potato - Sweet	5.5-6.0
Corn - Sweet	5.5-7.5	Pumpkin	5.5-7.5
Cress	6.0-7.0	Radish	6.0-7.0
Courgettes	5.5-7.0	Rice	5.0-6.5
Cucumber	5.5-7.0	Rosemary	5.0-6.0
Fennel	5.0-6.0	Sage	5.5-6.5
Garlic	5.5-7.5	Shallot	5.5-7.0
Ginger	6.0-8.0	Sorghum	5.5-7.5
Horseradish	6.0-7.0	Soybean	5.5-6.5
Kale	6.0-7.5	Spearmint	5.5-7.5
Kohlrabi	6.0-7.5	Spinach	6.0-7.5
Leek	6.0-8.0	Swede	5.5-7.0
Lentil	5.5-7.0	Thyme	5.5-7.0
Lettuce	6.0-7.0	Tomato	5.5-7.5
Marjoram	6.0-8.0	Turnip	5.5-7.0
Marrow	6.0-7.5	Water Cress	6.0-8.0

FRUIT

NAME	pH RANGE	NAME	pH RANGE
Apple	5.0-6.5	Lychee	6.0-7.0
Apricot	6.0-7.0	Mango	5.0-6.0
Avocado	6.0-7.5	Melon	5.5-6.5
Banana	5.0-7.0	Mulberry	6.0-7.5
Blackberry	5.0-6.0	Nectarine	6.0-7.5
Cherry	6.0-7.5	Papaw	6.0-7.5
Cranberry	5.5-6.5	Peach	6.0-7.5
Currant: Black	6.0-8.0	Pear	6.0-7.5
Red	5.5-7.0	Pineapple	5.0-6.0
White	6.0-8.0	Plum	6.0-7.5
Damson	6.0-7.5	Pomegranate	5.5-6.5
Gooseberry	5.0-6.5	Quince	6.0-7.5
Grapevine	6.0-7.0	Raspberry	5.0-6.5
Grapefruit	6.0-7.5	Rhubarb	5.5-7.0
Hazelnut	6.0-7.0	Strawberry	5.0-7.5
Hop	6.0-7.5	Watermelon	5.5-6.5
Lemon	6.0-7.0		

HOUSE AND GREENHOUSE PLANTS

Abutilon	5.5-6.5	Creeping Fig	5.0-6.0
Acorus	5.0-6.5	Croton	5.0-6.0
Aechmea	5.0-5.5	Crown of Thorns	6.0-7.5
African Violet	6.0-7.0	Cuphea	6.0-7.5
Amaryllis	5.5-6.5	Cyclamen	6.0-7.0
Anthurium	5.0-6.0	Cyperus	5.0-7.5
Apostle Plant	5.5-6.5	Daphne	6.5-7.5
Aralia	6.0-7.5	Devil's Ivy	5.0-6.0
Arrowhead	5.0-6.0	Dieffenbachia	5.0-6.0
Asparagus Fern	6.0-8.0	Dipladenia	6.0-7.5
Azalea	4.5-6.0	Dizygotheca	6.0-7.5
Baby's Breath	6.0-7.5	Dracaena	5.0-6.0
Baby's Tears	5.0-6.0	Dragon Tree	5.0-7.5
Begonia	5.5-7.0	Dutchman's Pipe	6.0-8.0
Bird of Paradise	6.0-6.5	Easter Lily	6.0-7.0
Bishop's Cap	5.0-6.0	Blephant's Ear	6.0-7.5
Black-eyed Susan	5.5-7.5	English Ivy	6.0-7.5
Blood Leaf	5.5-6.5	Episcia	6.0-7.0
Bottle Brush	6.0-7.5	Eucalyptus	6.0-8.0
Bougainvillea	5.5-7.5	Fan Iris	6.0-8.0
Boxwood	6.0-7.5	Feijoa	5.0-7.5
Bromeliads	5.0-6.0	Fern: Bird's Nest	5.0-5.5
Butterfly Flower	6.0-7.5	Boston	5.5-6.5
Cactus	4.5-6.0	Button	6.0-8.0
Calceolaria	6.0-7.0	Christmas	6.0-7.5
Caladium	6.0-7.5	Cloak	6.0-7.5
Calla Lily	6.0-7.0	Feather	5.5-7.5
Camellia	4.5-5.5	Hart's Tongue	7.0-8.0
Capsicum Pepper	5.0-6.5	Holly	4.5-6.0
Cardinal Flower	5.0-6.0	Maldenhalr	6.0-8.0
Cast Iron Plant	4.0-5.5	Rabbit's Foot	6.0-7.5
Castor Oil Plant	5.5-6.5	Spleenwort	6.0-7.5
Century Plant	5.0-6.5	Fig (Ficus)	5.0-6.0

HOUSE AND GREENHOUSE PLANTS

NAME	pH RANGE	NAME	pH RANGE
Chinese Evergreen	5.0-6.0	Fictonia	5.5-6.5
Chinese Lantern	6.0-7.5	Freesia	6.0-7.5
Chinese Primrose	6.0-7.5	French Marigold	5.0-7.5
Christmas Cactus	5.0-6.5	Gardenia	5.0-6.0
Cineraria	5.5-7.0	Genista	6.5-7.5
Clerodendrum	5.0-6.0	Geranium	6.0-8.0
Clivia	5.5-6.5	Gloxinia	5.5-6.5
Cockscomb	6.0-7.5	Grape Hyacinth	6.0-7.5
Coffee Plant	5.0-6.0	Grape Ivy	5.0-6.5
Coleus	6.0-7.0	Grevillea	5.5-6.5
Columnia	4.5-5.5	Hedera (Ivy)	6.0-7.5
Coral Berry	5.5-7.5	Heliotropium	6.0-8.0
Crassula	5.0-6.0	Hens & Chickens	6.0-7.0
Herringbone Plant	5.0-6.0	Pelargonium	6.0-7.5
Hibiscus	6.0-8.0	Pellionia	5.0-6.0
Hyacinth	6.5-7.5	Peperomia	5.0-6.0
Hoya	5.0-6.5	Philodendron	5.0-6.0
Ice Plant	6.0-8.0	Phlox	5.0-6.5
Inch Plant	5.0-6.0	Pitcherplant	4.0-5.5
Impatiens		Pilea	6.0-8.0
(Busy Lizzie)	5.5-6.5	Plumbago	5.5-6.5
Indigofera	6.0-7.5	Podocarpus	5.0-6.5
Iresine	5.0-6.5	Poinsettia	6.0-7.5
Ivy Tree	6.0-7.0	Polyscias	6.0-7.5
Jacaranda	6.0-7.5	Pothos	5.0-6.0
Japanese Sedge	6.0-8.0	Prayer Plant	5.0-6.0
Jasminum	5.5-7.0	Punica	5.5-6.5
Jerusalem Cherry	5.5-6.5	Rubber Plant	5.0-6.0
Jessamine	5.0-6.0	Sansevieria	4.5-7.0
Kaffir	6.0-7.5	Saxifraga	6.0-8.0
Kalanchoe	6.0-7.5	Schizanthus	6.0-7.0
Kangaroo Thorn	6.0-8.0	Scilla	6.0-8.0
Kangaroo Vine	5.0-6.5	Selaginella	6.0-7.0
Lace Flower	6.0-7.5	Senecio	6.0-7.0
Lantana	5.5-7.0	Shrimp Plant	5.5-6.5
Laurus (Bay Tree)	5.0-6.0	Spanish Bayonet	5.5-7.0
Lemon Plant	6.0-7.5	SpiderPlant	6.0-7.5
Mimosa	5.0-7.0	Star of Bethlehem	6.0-8.0
Mind Your Own Business	5.0-5.5	Succulents	5.0-6.5
Monstera (Swiss Cheese Plant)	5.0-6.0	Thunbergia	5.5-7.5
Mother-of-Thousands	5.0-6.0	Turk's Cap	6.0-7.0
Myrtle	6.0-8.0	Umbrella Tree	5.0-7.5
Nephtytis	4.5-5.5	Velvet Plant	5.5-6.5
Never Never Plant	5.0-6.0	Venus Flytrap	4.0-5.0
Nicodernia		Verbena	6.0-8.0
(Indoor Oak)	6.0-8.0	Vinca	6.0-7.5
Nicotiana	5.5-6.5	Violet Flame	6.0-7.0
Norfolk Island Pine	5.0-6.0	Wandering Jew	5.0-6.0
Oleander	6.0-7.5	Weeping Fig	5.0-6.0
Opilsemenus	5.0-6.0	Winter Creeper	5.5-7.0
Orchid	4.5-5.5	Yucca P	6.0-8.0
Painted Lady	6.0-7.5	Zebra Plant	5.0-6.0
Pandanus	5.0-6.0	Orange Plant	6.0-7.5
Peacock Plant	5.0-6.0	Oxalis	6.0-8.0
		Palms	6.0-7.5
		Patient Lucy	5.5-6.5

pH READING CHART

pH 7.5



Alkaline

pH 7.0



Neutral

pH 6.5



Slightly Acid

pH 6.0



Acid

pH 5.5



Acid

pH 5.0



Very Acid

pH 4.5



Very Acid

NITRATE READING CHART

HIGH



HIGH TO MEDIUM



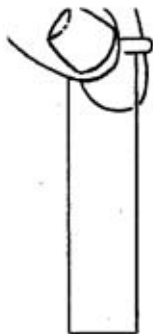
MEDIUM



MEDIUM TO LOW



LOW



PHOSPHORUS READING CHART

HIGH



HIGH TO MEDIUM



MEDIUM



MEDIUM TO LOW



LOW

