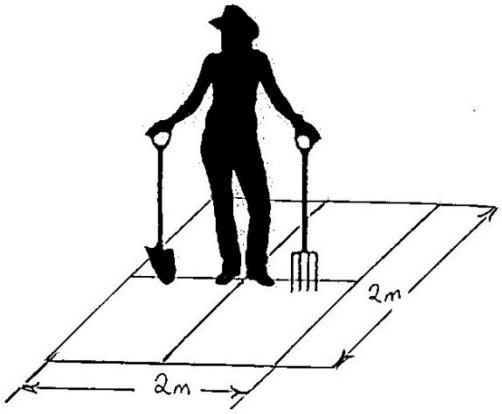
Volume 2 Issue 7, July 2021

July Birthday Celebrations

Penny Raven	4 July
Jane Roberts	7 July
John Hoskin	10 July
Daniel Kennedy	11 July
Christopher Wilmot	19 July

Wishing Penny, Jane, John, Daniel and Christopher a very happy birthday.

The COVID – 19 Virus and social distancing



If we keep in the centre of a 4-metre square this should give about a 1.5 metre distance between gardeners.

Do the three:

1. **Wash your hands.**
2. **Maintain a 1.5 metre distance.**
3. **If sick stay home.**

Hedge and Roses

The roses and new hedge plants have been delayed and should be here by next week. So we will need some able people to help plant them. The roses will be bare root stock plants.

Weeding of paths

The new rule for weeding the pathways is working well. Keep up the great work.

The Trellis flooring

The trellis area has been cleaned out with the ground being excavated to make way for paving. Once this is done a garden bench will be fitted with the old mosaic coffee table being repaired and moved in with the chair.

Honey for sale

We still have honey for sale at the garden $8:00 per jar for members and $10:00 for non-members.

Please note the honey is candied and makes a great spread.

Christmas in July

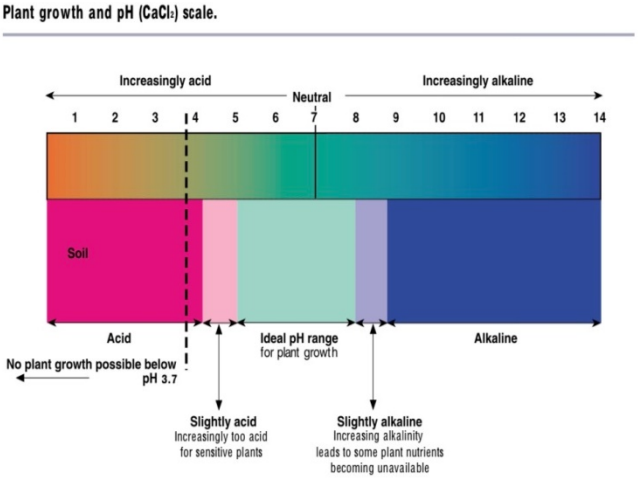
It's time again for our Annual Christmas in July Lunch. Like last year, it will be held at the Gates Hotel, 660 Glebe Road Adamstown.

Friday 23rd July at 12.00 noon

RSVP to Rose Erye at nova2@tpg.com.au

How important is pH to soil health?

Soil pH or soil reaction is an indication of the acidity or alkalinity of soil and is measured in pH units. Soil pH is defined as the negative logarithm of the hydrogen ion concentration. The pH scale goes from 0 to 14 with pH 7 as the neutral point. As the amount of hydrogen ions increase in the soil the soil pH decreases, thus becoming more acidic. From pH 7 to 0 the soil becomes more acidic and from pH 7 to 14 the soil is increasingly more alkaline or basic.



Measuring Soil pH

Soil pH provides various clues about soil properties and is easily determined. There are various methods of determining the soil pH. The simplest way is a cheap pH meter purchased from the hardware store for around $10:00, or to obtain a benchmark of soil condition a NPK Soil Chemical Test Kit H13895 from Hanna instruments which costs around $60.00. The use of the cheap pH meter is a valuable tool for an indication only and if further investigation is needed use the NPH test kit. For the best overall pH result take meter measurements from different parts of your bed as there may be considerable variation in the soils pH from one spot to the other.

pH affects Nutrients, Minerals and Growth

Soil pH greatly affects the solubility of minerals or nutrients. Fourteen of the seventeen essential plant nutrients are obtained from the soil. Before nutrients can be used by plants they must be dissolved into the soil solution. Most minerals and nutrients are more soluble or available in slightly acid soils than in neutral or slightly alkaline soils.

Phosphorus works best when the soil pH ranges between 6.5 to 6.0. When the pH is alkaline at 7, 8 or 9 phosphorus is not soluble to the soil. Extremely or strongly acid soils (pH 4.0-5.0) can have high concentrations of soluble aluminium, iron and manganese which may be toxic to the growth of some plants and if the soil reaches a pH 3.7 and lower there will be no plant growth possible. The soil pH can also influence plant growth by its effect on the activity of beneficial microorganisms Bacteria that decomposes soil organic matter are hindered in strong acid soils. This prevents organic matter from breaking down, resulting in an accumulation of organic matter and the tie up of nutrients, particularly nitrogen, that are held in the organic matter. A pH range of approximately 5 to 8 promotes the most readily available plant nutrients.

Changes in soil pH

Soils tend to become acidic as a result of

1. Rainfall leaching away basic ions (Calcium, Magnesium, Potassium and sodium);
2. Carbon dioxide from decomposing organic matter and root respiration dissolving in soil water to form a weak organic acid; and
3. Formation of strong organic and inorganic acids, such as nitric and sulfuric acid, from decaying organic matter and oxidation of ammonium and sulphur fertilizers.

Strongly acid soils are usually the result of the action of these strong organic and inorganic acids.

Lime is usually added to acid soils to increase soil pH. The addition of lime not only replaces hydrogen ions and raises soil pH, thereby eliminating most major problems associated with acid soils but it also provides two nutrients, calcium and magnesium to the soil.

Lime also helps phosphorus to become soluble in the soil and more available to the plant and aids plant growth. Lime also increases the availability of nitrogen by hastening the decomposition of organic matter.

Liming materials are relatively inexpensive, comparatively mild to handle and leave no objectionable residues in the soil.

Some common liming materials are

1. Calcic limestone which is ground limestone;
2. Dolomitic limestone from ground limestone high in magnesium; and
3. Miscellaneous sources such as wood ashes.

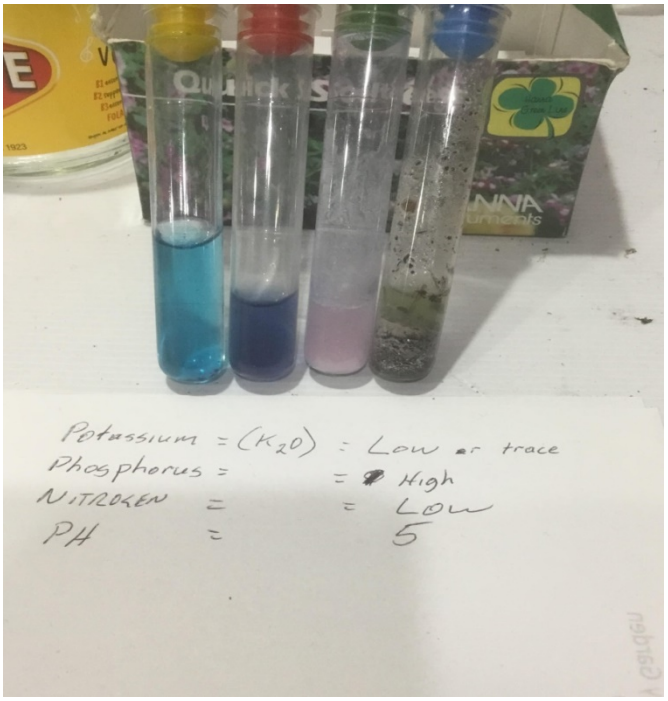
The amount of lime to apply to correct a soil acidity problem is affected by a number of factors, including soil pH, texture (amount of sand, silt and clay), structure, and amount of organic matter. In addition to soil variables the crops or plants to be grown influence the amount of lime needed.

The typical March Street garden bed

For this article I picked a garden bed where veggies have been successfully harvested to present a picture of what happens to the soil after veggies have been grown.

A soil sample was taken which decanted into a large jar and filled with a measure of demineralised water. The water and soil were shaken and left to sit for 24 hours. The end result is all the sediment falls to the bottom and you are left with a brown tea. A sample of the tea is placed into 4 test tubes. Then the relevant reagent powder is added to the tea in each test tube then shaken.

The teas change colour to reveal a shade of blue, light blue, pink and green. Each of these coloured test tubes is matched to the respective colour chart.



Potassium is on the left.

The analysis is: the soil is approaching an acid state with a pH of 5, which is the upper end of ideal. The phosphorus has started to not be absorbed into the soil due to the soil acid or low pH (the phosphorus has been bound). The organic material is starting to be dormant and the bacteria are suffering due to the higher acid.

Bringing the soil into stability

Garden lime, dolomite or urea can be used to stabilise the pH and in this garden I would use two measured cups per square metre coverage. Then retest in two weeks with meter. The achievable pH would 5.5 to 6.0 which would put the soil in a better position for plant growth and for mineral absorption to the plants. I would also recommend one bag of the cheap cow manure broken up over the top of the soil. This will replace the damaged bacteria due to the higher acid pH 4.5

What are the pH values for what I want to grow?

Examples of pH for some vegetables are as per the list below.

Vegetable Name	Ideal pH for Soil
Artichoke	6.5 – 7.5
Artichoke (globe)	5.6 – 6.6
Arugula (Rocket)	6.0 – 6.8
Asparagus	6.5 – 7.5
Avocado	6.0 – 7.0
Bean, French	7.5
Bean, pole	6.0 – 7.5
Beans	6.0 – 7.5
Beet Root	6.0 – 7.5
Broccoli	6.0 – 7.0
Brussel Sprouts	6.0 – 7.5
Brussels Sprouts	6.0 – 7.0
Cabbage	6.0 – 7.5
Carrot	5.5 – 7.0
Catnip	5.0 – 6.0
Cauliflower	5.5 – 7.5
Celery	6.0 – 7.0
Chard (Silverbeet)	6.0 – 7.0
Chickpeas	5.3 – 7.0
Chicory	5.0 – 6.5
Chili pepper	5.0 – 6.0
Chinese Cabbage	6.0 – 7.5
Chives	5.0 – 6.0
Corn	5.5 – 7.0
Cress	6.0 – 7.0
Cucumber	5.5 – 6.5
Dill	5.0 – 6.0
Eggplant	6.0 – 7.0
Garlic	5.5 – 7.0
Gourds	5.0 – 6.0
Horseradish	6.0 – 7.0
Kale	6.0 – 7.5
Kiwi	5.0 – 7.0
Leek	6.0 – 8.0
Lentil	5.5 – 7.0
Lettuce	6.0 – 6.5
Mint	6.0 – 7.0
Mustard	6.0 – 7.5
Okra	6.0 – 8.0

Vegetable of the month

Cabbage

Brassica Oleracea

The cabbage is one of the oldest vegetable we have used as humans. The vegetable from the brassica family has been in Europe before 1000 BC. During the Middle Ages the cabbage had become a prominent part of European cuisine. Cabbage was served up raw, pickled, steamed, stewed, sautéed, braised and fermented (such as sauerkraut).

As time marched on different varieties were starting to evolve with the Savoy cabbage being developed around the 16th century AD. Cabbage has high levels of vitamins K and C and a good source of dietary fibre.

Cultivation

Cabbages are grown for their leafy heads produced during the first year of its biennial cycle. The plants grow best in well-drained soil and in full sun. Not all cabbages like the same pH soil, but pH should be 6.0 to 6.8. For the best growth the soil needs to be nitrogen rich with medium levels of potassium and phosphorus. Small seedlings are better grown in a protected environment and when to a height of 150mm transplant out into the garden bed. The lack of nutrients is a problem when growing cabbage as these plants are sensitive to nutrient deficiencies. Ensure you stay on top of the elements boron, calcium, phosphorus and potassium.

Vitamins

Thiamine B1
Riboflavin B2
Niacin B3
Pantothenic acid B5
Vitamin B6
Folate B9
Vitamin C
Vitamin K

Minerals

Calcium
Iron
Magnesium
Manganese
Phosphorus
Potassium
Sodium
Zinc

Growing: This easy to grow vegetable takes up to 6 months to mature from planting. The soil needs to be loose and well drained.

Cabbage seedlings should be planted in March to be ready for eating around October.

<u>What to plant now in our temperate zone</u>

- Endive
- garlic
- Kohlrabi
- Parsnips
- Shallots
- Peas (snow/sugar snap and shelling varieties)

Check out this month's Seed Collection on their website.
theseedcollection.com.au

Recipe of the Month

Cabbage Rolls with Rice and Mince Filling (Golabki)

Ingredients

8 large green cabbage leaves
500g pork and veal mince
2 garlic cloves, finely chopped
2 spring onions, chopped
2 tablespoons chopped fresh dill leaves
2 tablespoons chopped fresh parsley
1 teaspoon paprika
1/2 teaspoon chilli flakes (optional)
1/2 cup **cooked** white rice
400g tomato passata/puree
1/3 cup chicken stock or water
2 tablespoons chopped fresh basil
2 tablespoons extra virgin olive oil
Extra fresh basil leaves, to serve
Salt and pepper to season

Directions

Bring a large saucepan of water to the boil over high heat. Cook cabbage leaves, in batches, for 2 to 3 minutes or until bright green. Drain on a tray lined with paper towel. Set aside to cool completely.

Mix mince with onions, garlic, herbs/spices and cooked rice in a bowl. Season well with salt and pepper.

Cut about 4cm of the thick vein from each cabbage leaf. Place 1 leaf on a flat surface. Spoon 2 heaped tablespoons of mince mixture along the base of leaf. Roll up cabbage leaf, folding in sides, to enclose filling. Repeat with remaining leaves and filling.

Heat oil in a large, deep frying pan or saute pan over medium-high heat. Place cabbage rolls in pan, in a single layer. Cook for 2 minutes. Pour over combined tomato puree, water (or chicken stock) and basil. Bring to a simmer. Reduce heat to low. Cover. Simmer for 45 minutes or until mince is cooked through. Serve sprinkled with extra basil.

Notes

You could also make this dish vegetarian or vegan by using diet-appropriate “mince” alternatives.

If you don’t like basil or don’t have any, you can use extra parsley in the dish and to garnish.

Nice served with roasted potatoes and/or a green salad