FOOD PLANT SOLUTIONS

Tasmanian Guide to Nutritious Edible Plants

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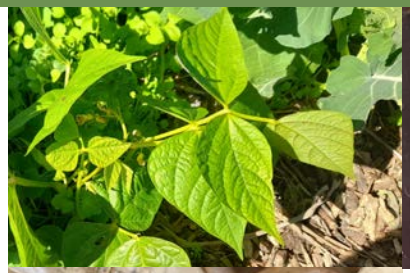
Rotary | FOOD PLANT SOLUTIONS ROTARY ACTION GROUP
Solutions to Malnutrition and Food Security

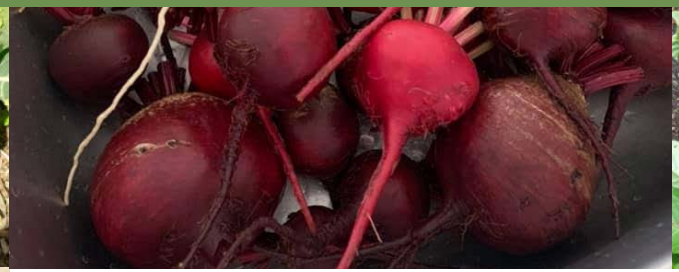
Rotary Club of Sandy Bay

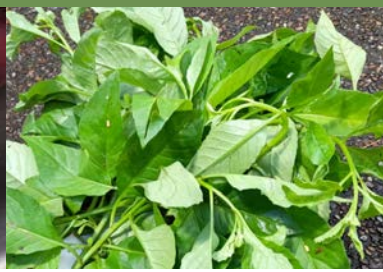
BRISBANE EDIBLE GARDENING

Nutrition

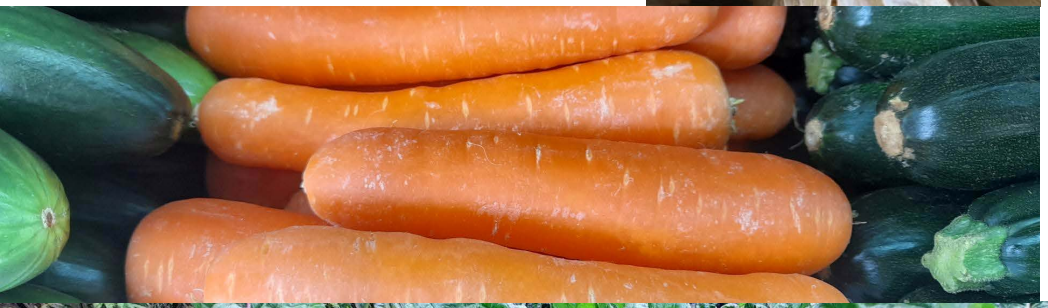
Our bodies need a variety of food plants to enable us to grow, stay healthy and have enough energy to enjoy life. Different foods are needed to provide energy, protein, vitamins and minerals. Starchy foods provide energy to go about our daily lives. Starchy foods may also have useful quantities of vitamins and minerals.

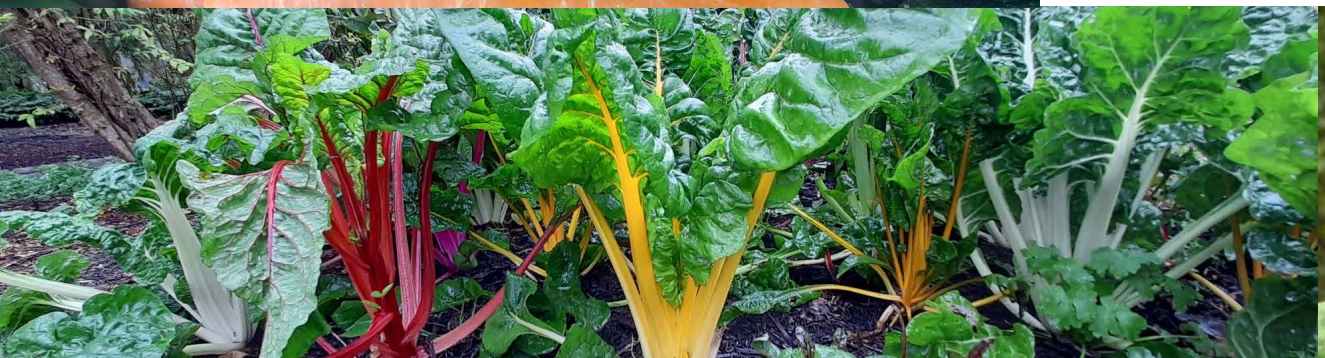






- Legumes are important sources of protein which helps the body grow and repair.
- Vitamin A is very important for eyesight and fighting disease, particularly in infants, young children and pregnant women.
- Vitamin C is important for helping us avoid sickness.
- Iron is what makes our blood red and helps oxygen get to our lungs. This helps us have energy to work.
- Zinc is particularly important for young children and teenagers to help recover from illness and be healthy.





Adzuki Bean *(Vigna angularis)*

Description:

- An erect, bushy bean plant that grows up to 60 cm tall and re-grows from seed each year.
- The fruit are pods 6 - 12 cm long and contain up to 12 small oblong seeds 0.5 cm long.

Edible parts:

- The young pods and seeds are eaten cooked, added to soups, stews and salads, and can be boiled, mashed and sweetened.
- The seeds are germinated for sprouts and can also be popped liked corn.

Growing:

- Planting time - October to November. Plants are grown from seed which can be pregerminated on wet paper to get it growing more quickly.
- The soil temperature needs to be above 15°C for germination. A spacing of 15 cm is suitable.
- Plants should be picked regularly for green pods. For dry beans, plants can grown to maturity, then pulled up and dried.

Nutrition:

- Good source of iron, vitamin A and protein.

Amaranths *(Amaranthus tricolor, Amaranth* species*)*

Description:

- A small, leafy green annual herb up to 1 m tall and 45 cm wide.
- The flower spike at the top can be 30 cm long with fine (1 - 1.2 mm) black seeds.

Edible parts:

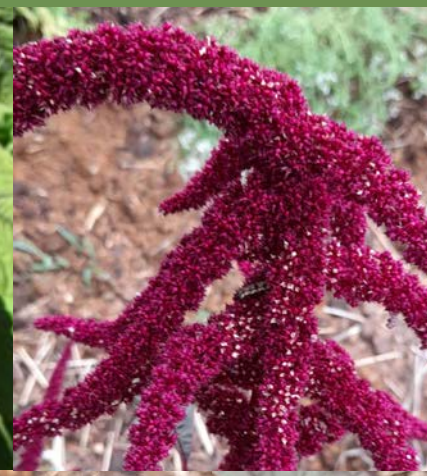
- The young leaves and stems are cooked and eaten as a vegetable. The seeds can also be eaten.

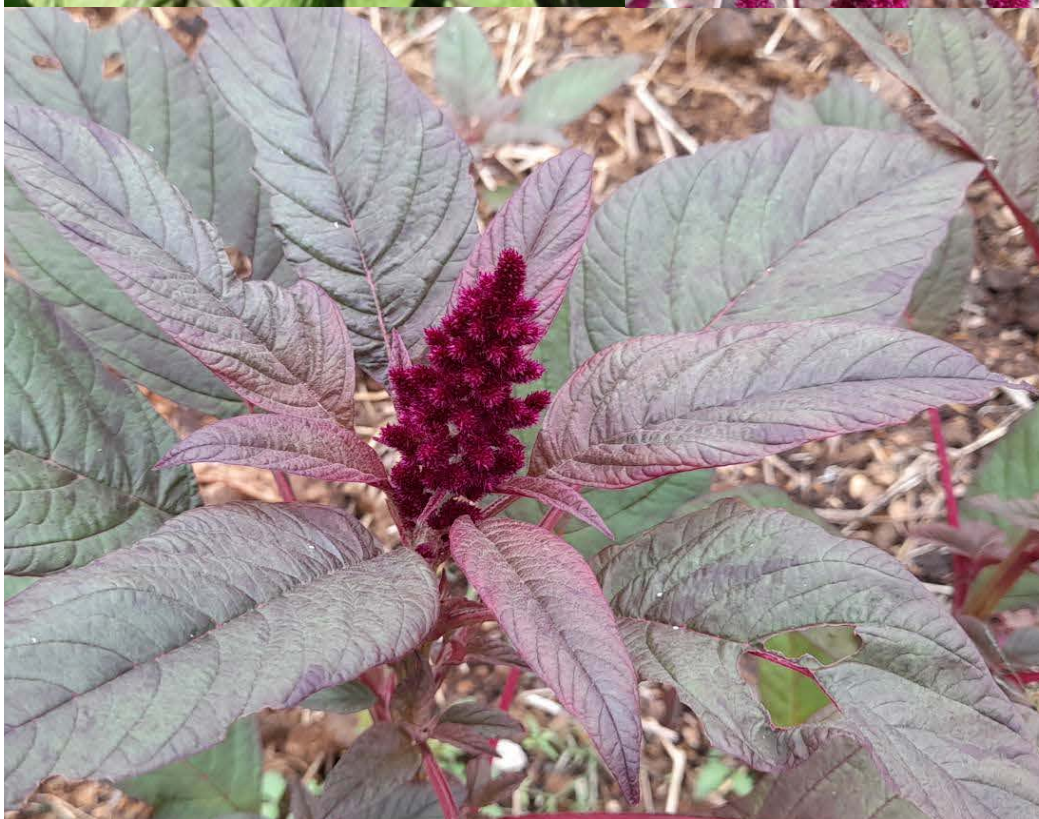
Growing:

- Best grown in full sun with regular watering.
- Planting time - October to December. Seeds need a soil temperature above 15 - 17°C to germinate.
- Harvesting begins after 4 - 7 weeks and can continue over the next 2 months.
- Amaranths need high amounts of nitrogen and potash to grow well.

Nutrition:

- Amaranths are a highly nutritious leafy green, high in vitamins A and C.





Beetroot *(Beta vulgaris)*

Description:

- Beetroot has a swollen red (or white) root and dark green, distinctively veined leaves that grow up to 20 cm tall.

Edible parts:

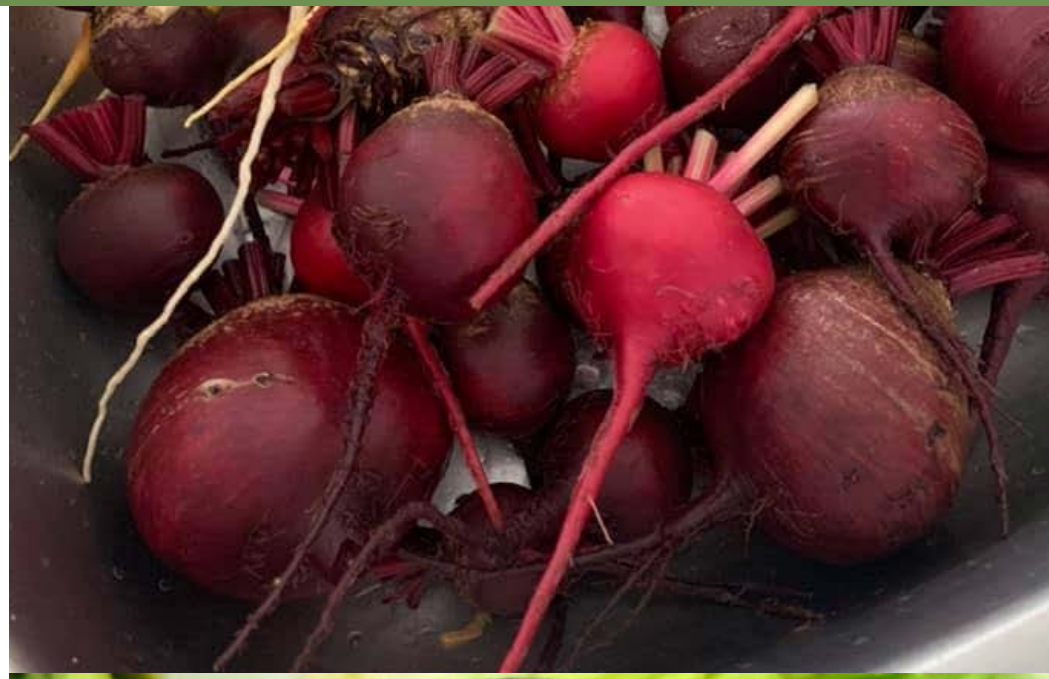
- The red roots are edible raw or cooked.
- They can be pickled or fermented as beetroot juice.
- They are often boiled, sliced and served with vinegar.
- The leaves are edible and can be cooked in soups and stews or used raw in salads.

Growing:

- Planting time - September to February. Plants are grown from seed that are normally sown in the final growing place because transplanting is difficult.

Nutrition:

- Good source of energy, vitamin A and C, iron and zinc.



Broadbean *(Vicia faba)*

Description:

- An erect herb 90 - 120 cm tall.
- Pods are 5 - 10 cm long and up to 1 cm in diameter.

Edible parts:

- The pods can be harvested while young and tender and can be eaten raw or cooked in stir-fries.
- The pods can be eaten at all sizes but will toughen as they mature.

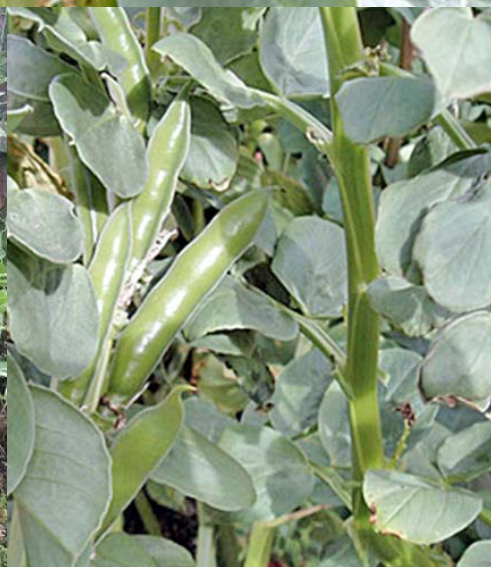
Growing:

- Planting time - March to May and August to September.
- Plants are grown from seed.
- Harvest 12 - 22 weeks after sowing.
- Plants thrive in cool conditions and require a moist soil to flourish.
- Plants are nitrogen fixers and can be dug back into the garden to enrich the soil after harvest.
- Requires support with either a trellis or stakes.

Nutrition:

- A good source of dietary fibre and protein.

Photo credit: Arno King



Cape Gooseberry *(Physalis peruviana)*

Description:

- A perennial herb that grows 45 - 90 cm tall.
- The fruit is an orange-yellow or pale brown berry, 1 - 1.5 cm across. It occurs inside an inflated husk.
- There are several cultivated varieties.

Edible parts:

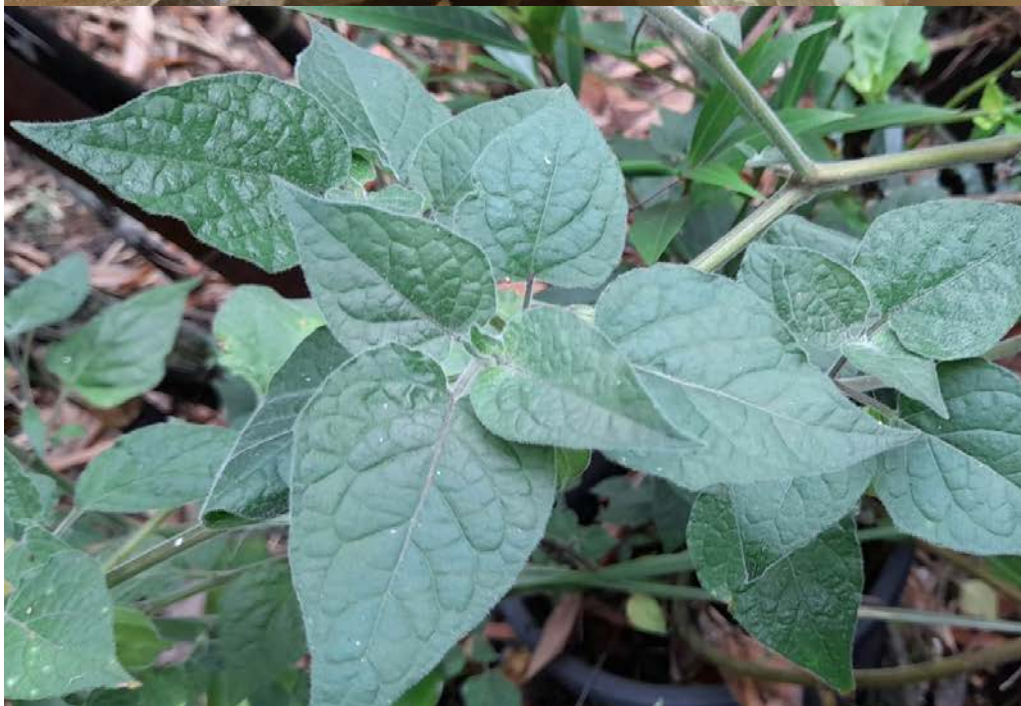
- The ripe fruit are eaten fresh or cooked.
- The leaves are also used as a potherb.

Growing:

- Plants produce fruit in one year.
- They grow well in part shade or full sun.
- They are ripe when the cover around the gooseberry dries and the gooseberry falls from the bush. The fruit should be a beautiful yellow at this stage and are delicious.
- It needs a well-drained soil.
- It grows best free from severe frosts and strong winds.

Nutrition:

- Relatively high in iron.
- **Caution:** Don't eat the green unripe gooseberries.



Carrot *(Daucus carota* subsp. *sativus)*

Description:

- A root crop grown from seed.
- It can grow to 60 cm high and spread to 50 cm wide.
- It normally grows a fattened root one year then forms a flower the next year.

Edible parts:

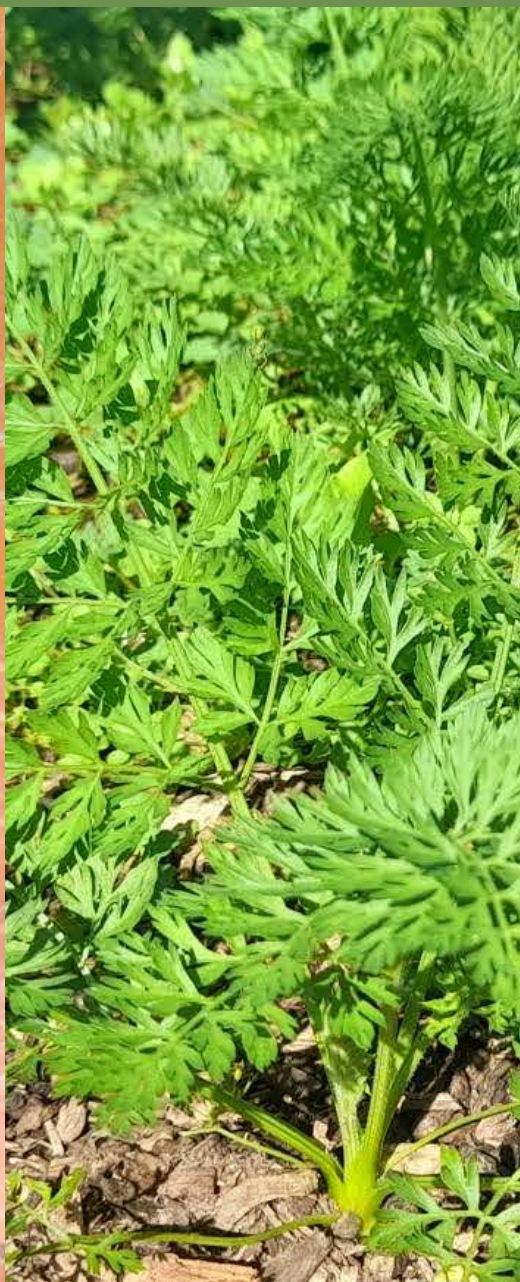
- Roots and leaves are both edible.
- The young leaves are used in soups while the roots can be eaten raw or cooked.
- The juice is used raw and fermented.
- The roots can be dried and the flour used to flavour and thicken soups.

Growing:

- Planting time - August to February. They are grown from seeds sown directly where they will grow.
- Space 5 cm apart in rows 15 - 20 cm apart.
- There are varieties that mature in 90 - 110 days.

Nutrition:

- Good source of vitamin A.



Common bean *(Phaseolus vulgaris)*

Description:

- There are many bush and climbing varieties of this bean.
- Climbing forms can grow 2 - 3 m tall, while bush types grow 20 - 60 cm tall.
- Flowers are white to purple.
- Pods are smooth, slender and 8 - 20 cm long by 1 - 1.5 cm wide.

Edible parts:

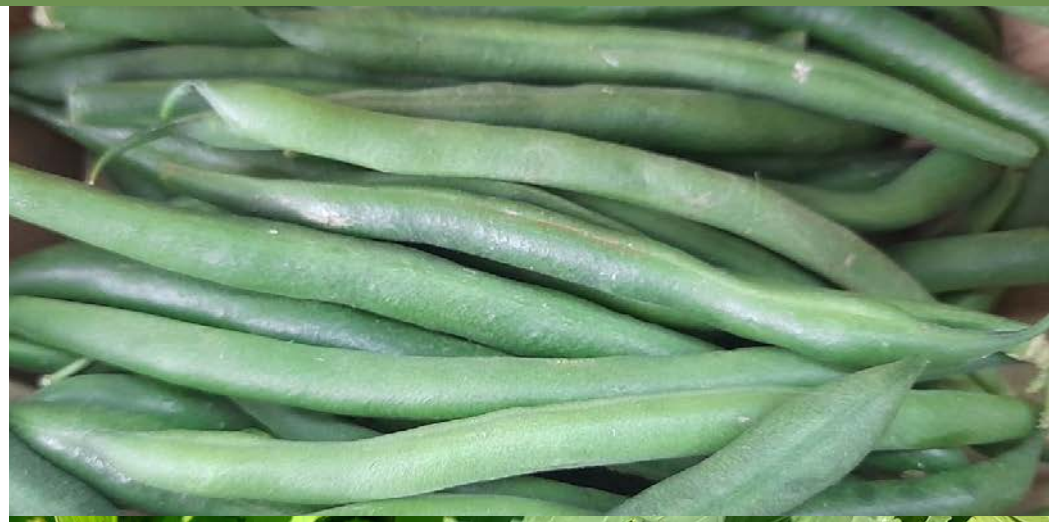
- The young pods, leaves and mature seeds are edible.
- Dry seeds are soaked in water and boiled until soft.

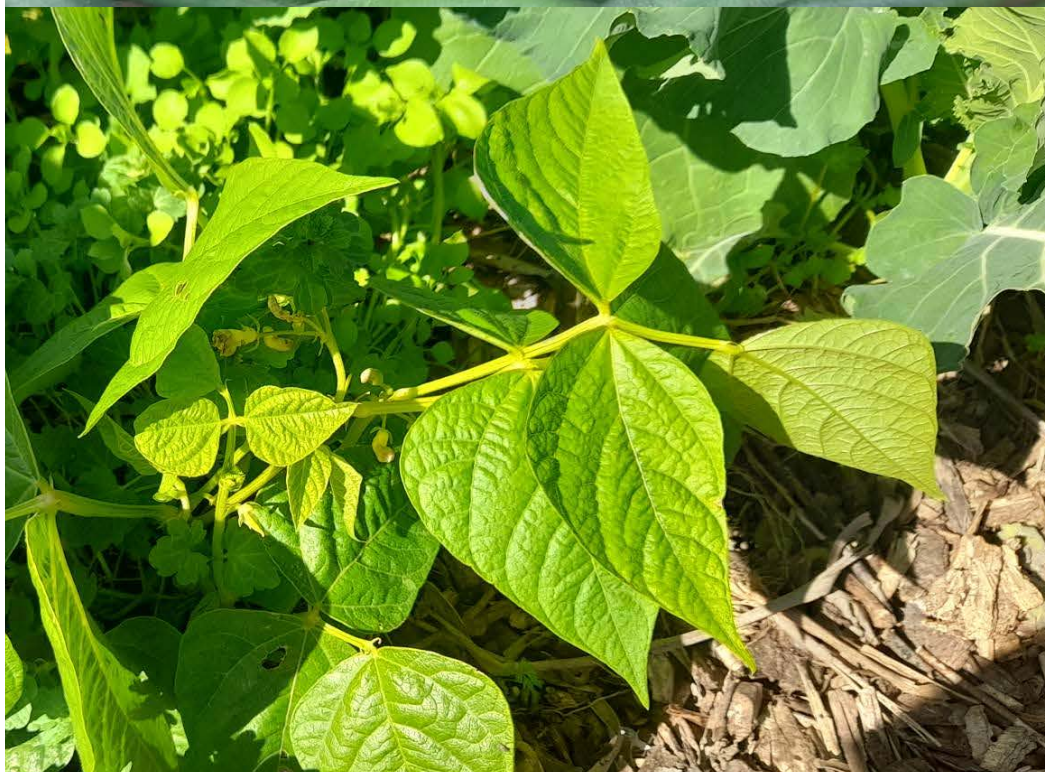
Growing:

- Planting time - October to December. Plants are grown from seed, preferably sown in raised beds.
- Plants are self-fertilised.
- These beans are intercropped with other plants in many places. If grown on their own, bush types can be spaced at 25 cm x 25 cm.

Nutrition:

- Good source of iron, protein and energy.





Dandelion *(Taraxacum officinale)*

Description:

- A herb that grows from year to year.
- It grows to 10 cm high and the leaves are at the base.
- It grows in lawns, on roadsides and in damp cool sites.

Edible parts:

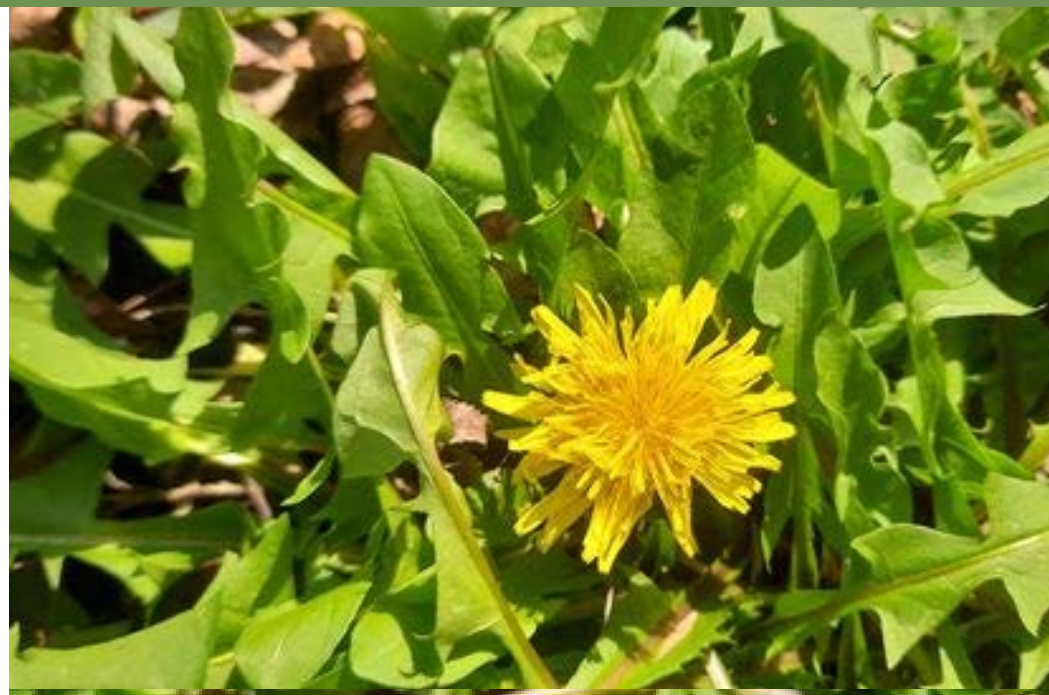
- The tender leaves are used as a potherb.
- They can be eaten raw in salads or cooked.
- The roots can be baked in a slow oven until brown and brittle.
- They can also be boiled and eaten. They are used in soups and to flavour drinks.
- Sprouted seeds can be eaten.

Growing:

- Planting time - September to November. Plants are grown from seed or by root division.

Nutrition:

- Excellent source of vitamin A (leaf).
- **Caution:** contains taraxacum which is a mild laxative.



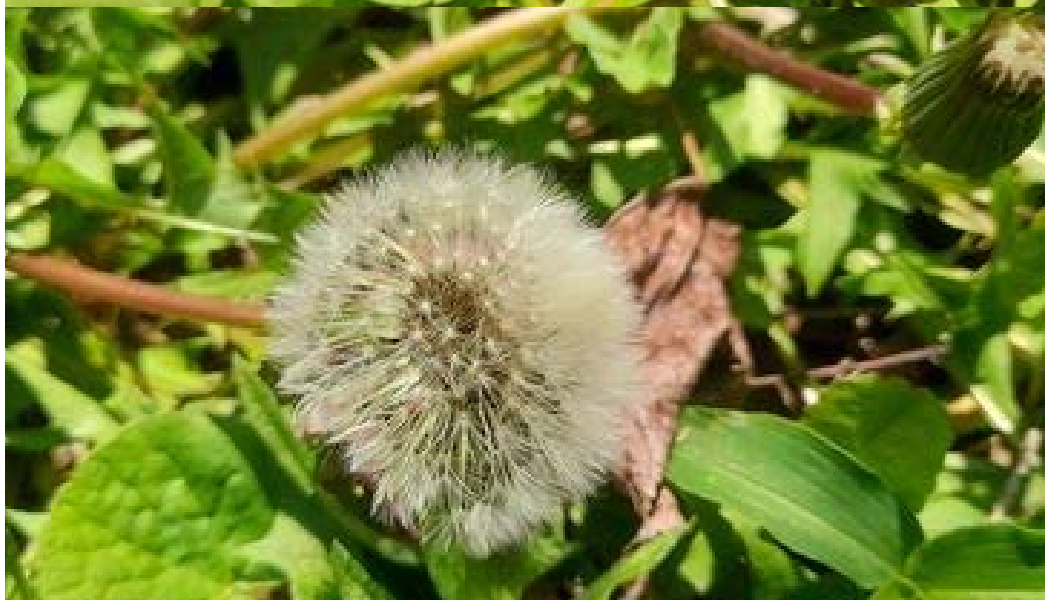


Fig *(Ficus* species*)*

Description:

- A low, spreading, perennial deciduous tree to 10 m tall.

Edible parts:

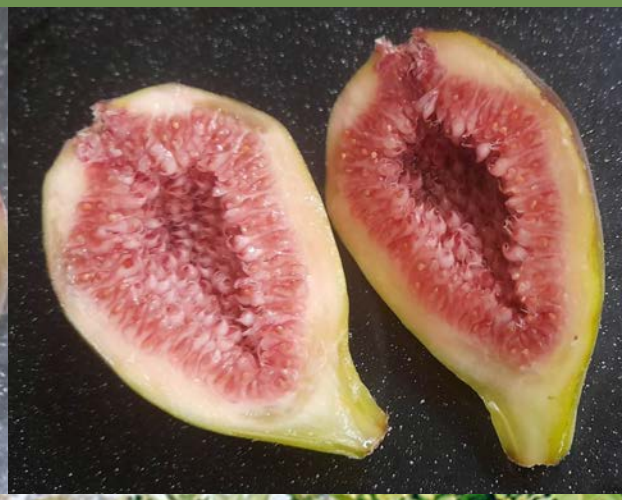
- Fruit are eaten raw or cooked.
- Food can be wrapped in fig leaves while cooking to impart flavour.

Growing:

- Tolerates light frosts once hardened.
- Good summer heat is necessary for sugar-rich fruit.
- Plants do best in well prepared sites of heavy soil with a neutral pH.
- It has some salt tolerance.
- Planting time - November to December.
- Figs start to bear after about 5 - 7 years and can continue for decades.
- Normally figs have two harvests per year. The first crop is from old wood and the second from newer wood.

Nutrition:

- High in vitamin A.



Leeks (*Allium ampeloprasum* var. *porrum*)

Description:

- An onion-like plant with flat leaves and no bulb that grows one year, then flowers the next.
- The leaves are flattened and vary from 40 - 100 cm long by 1.2 - 2.5 cm wide.

Edible parts:

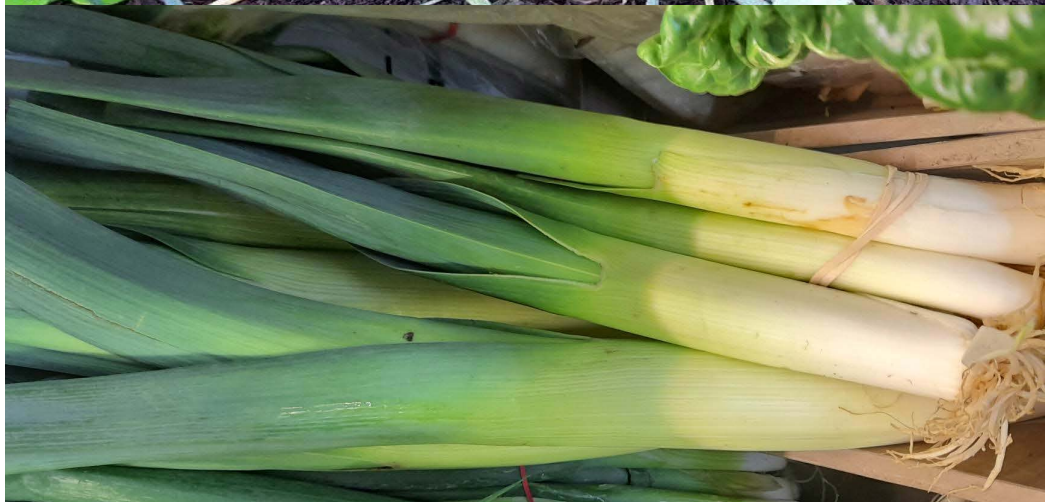
- The whole plant can be eaten raw or cooked. Seeds can also be sprouted for eating.

Growing:

- Planting time - September to March. They can be grown from seed, and seedlings can be transplanted when 15 - 20 cm tall.
- A spacing of 15 - 20 cm between plants and 30 - 36 cm between rows is suitable.
- Plants are ready for harvest after 16 - 20 weeks.

Nutrition:

- Source of energy, protein, vitamin A and C and iron.



Oca (*Oxalis tuberosa*)

Description:

- A small annual herb that grows up to 30 cm tall.
- The tubers are wrinkled and vary in colour from red to orange, yellow or white.

Edible parts:

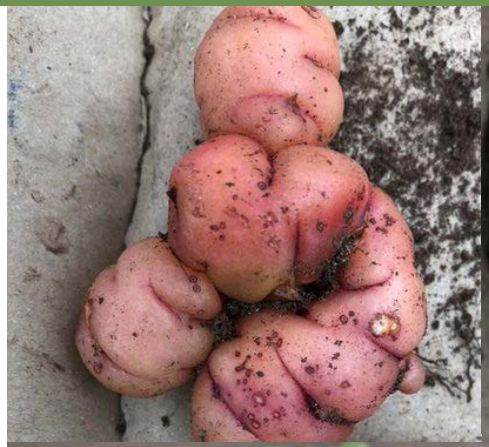
- The tubers are acidic when fresh but are dried slightly then cooked and eaten.
- The young leaves and shoots can be eaten.

Growing:

- The plant is frost hardy.
- A day length of 9 hours is best for tuber formation.
- Planting time - October to December. Plants are grown from tubers or cut pieces of tubers which contain 1 - 3 eyes.
- A spacing of 20 - 40 cm x 20 - 36 cm is recommended.

Nutrition:

- Source of protein and energy.
- **Caution:** Fresh tubers contain calcium oxalate.



Parsley (*Petroselinum crispum*)

Description:

- A short-lived perennial plant to 50 cm that often grows and flowers over two years.

Edible parts:

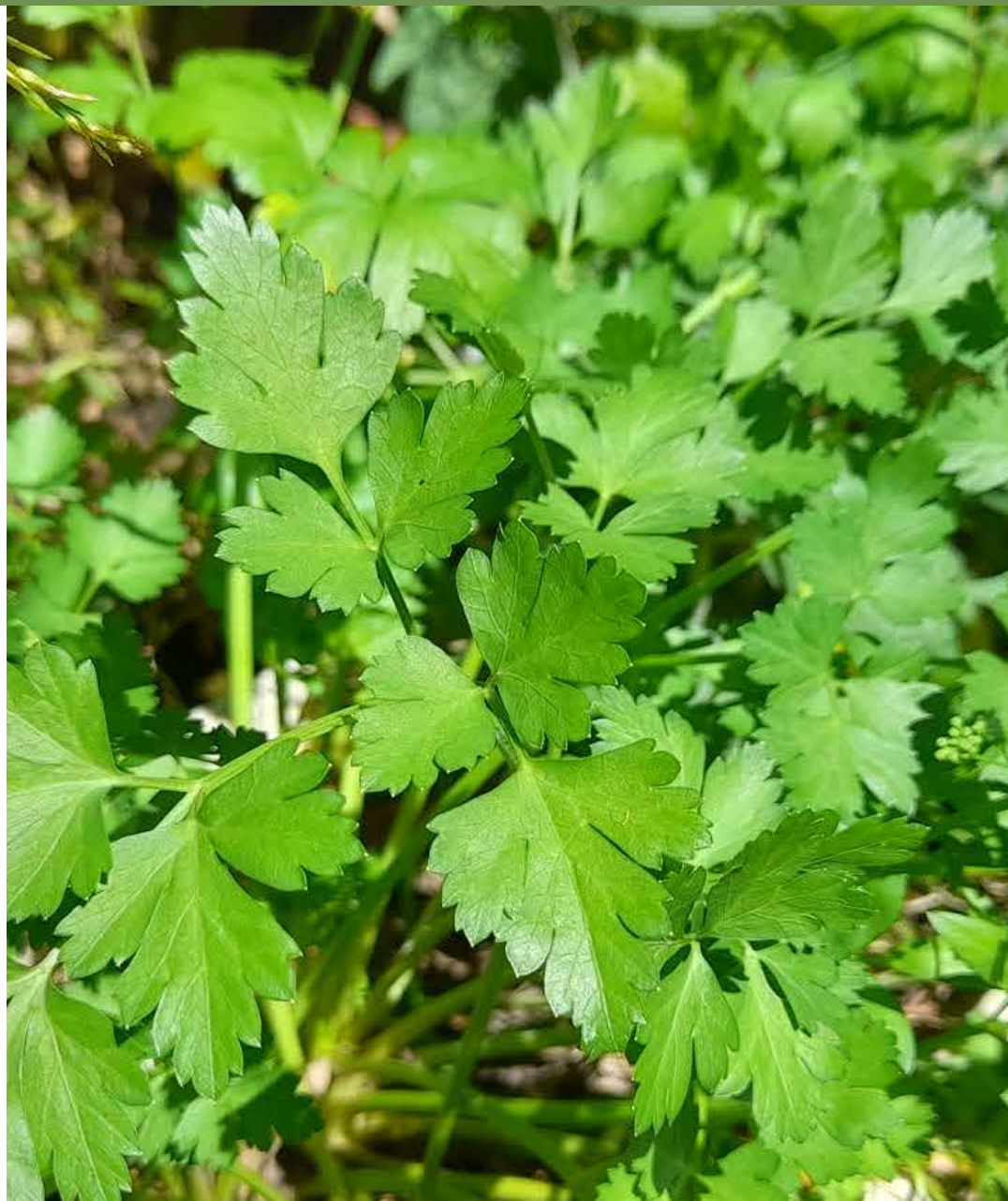
- The leaves are used for flavouring in salads, sauces, stews, stuffing and other cooked dishes.
- The leaves can be dried or used fresh for tea.
- Parsley oil from the leaves or seeds is used in foods.

Growing:

- Planting time - September to April.
- It can grow well in full sunlight but also in slight shade. Young plants can be damaged by frost.
- It is grown from seed and can be transplanted.
- Leaves are picked throughout the first growing season. The plant becomes bitter after flowering. The outer and larger leaves are harvested first.

Nutrition:

- High in iron and vitamin C.



Parsnip (*Pastinaca sativa*)

Description:

- A plant with a long thickened tap root.
- The stems are angular and have grooves along them.
- The thickened root is yellowish white.

Edible parts:

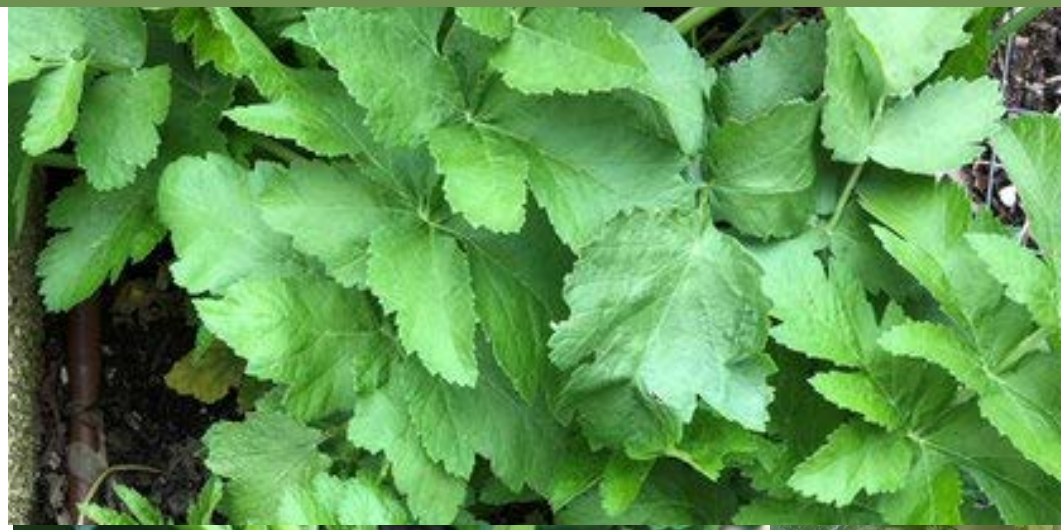
- It is a temperate plant that is frost resistant.
- The root is cooked before eating.
- It can be boiled, baked or fried, used in stews and made into marmalade or syrup.
- The young shoots and leaves are added to soups or cooked and eaten as a vegetable.
- The seeds can be used as a spice.

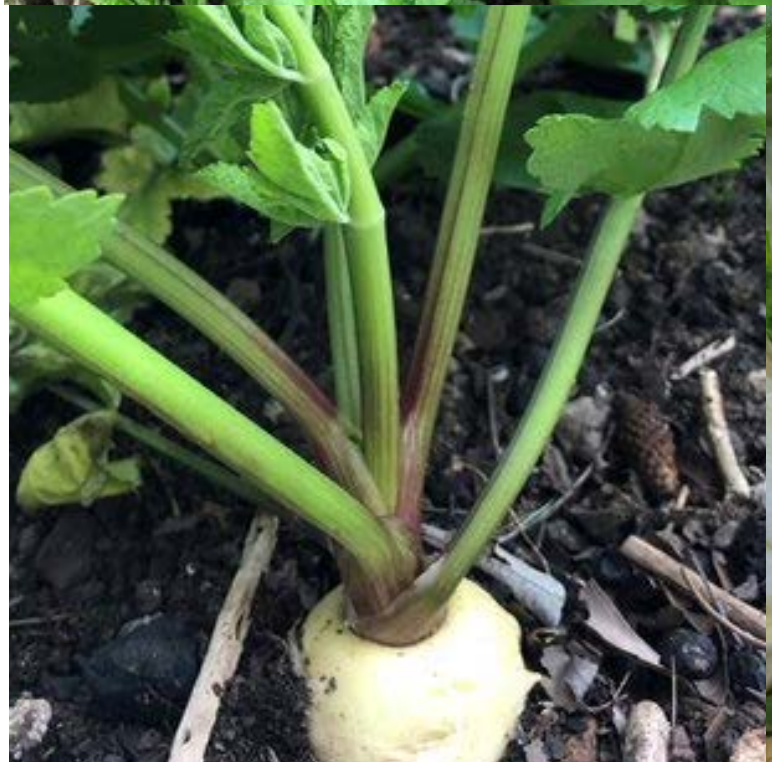
Growing:

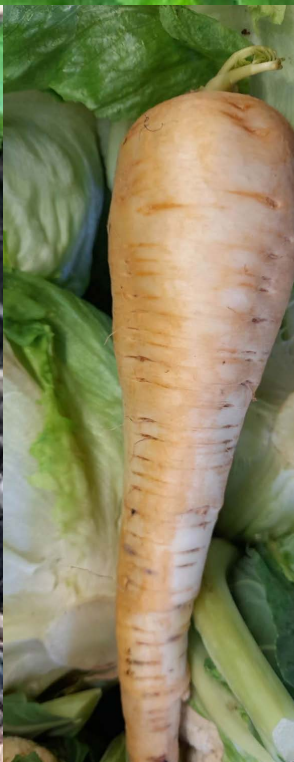
- Planting time - August to February.
- Plants grow from seeds.
- Plants are slow growing.
- They taste best after the first frosts.
- Time to maturity is 17 - 24 weeks.

Nutrition

- Souce of vitamin C, iron, zinc and energy.







Peas (*Pisum sativum*)

Description:

- A short-lived creeping plant with white or pink flowers. Plants can grow 30 - 150 cm tall.

Edible parts:

- The young seeds are eaten either raw or cooked.
- Sometimes the young pods and leaves are eaten.
- The sprouted and dry seeds are eaten and are used in soups and stews, and ground into flour.
- The young leaves and buds are cooked as a vegetable.

Growing:

- Planting time - July to October. Plants are grown from seed. A spacing about 5 cm apart in rows 25 cm apart is suitable.
- For dried peas, plants are cut when mature then dried and threshed.

Nutrition:

- Source of protein, iron, vitamin C and zinc.

Potato (*Solanum tuberosum*)

Description:

- A branched annual plant that grows up to 50 cm tall.

Edible parts:

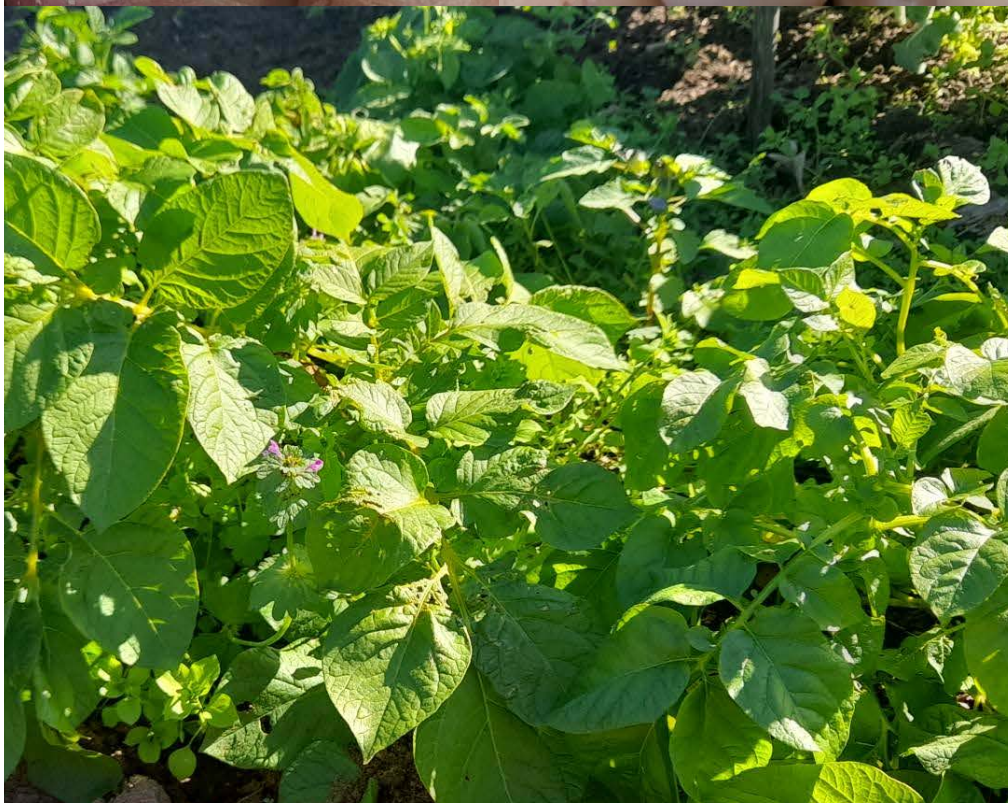
- The tubers are cooked before eating. They can be boiled, baked, roasted, mashed and used in soups, stews, dumplings, pancakes and potato salads.
- **Caution:** The green tubers and leaves contain solanine, a poisonous alkaloid.

Growing:

- Planting time - August to December. Plants grow from tubers.
- The time to maturity is 17 - 24 weeks.
- They can be damaged by frost but are more frost tolerant than sweet potato.

Nutrition:

- Good source of energy and iron.



Pumpkin (*Cucurbita maxima*)

Description:

- It is an annual creeping vine with tendrils.

Edible parts:

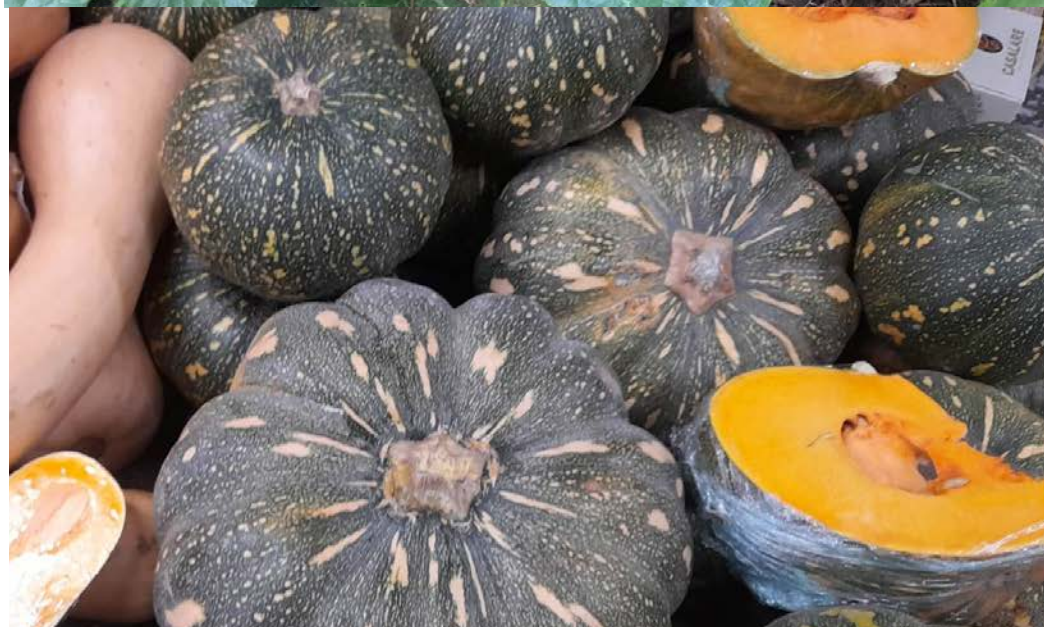
- The flesh is delicious steamed, boiled or roasted.
- The seeds are edible. They can be round, oval or flattened, with yellow, orange or green skin.
- Some varieties are better for edible leaf tips.

Growing:

- Planting time - October to December. They are grown from seed.
- Usually, 2 or 3 seeds are planted together in a mound. The distance apart depends on the cultivar.
- Needs a fertile soil.
- Fruit are ready for harvest after about 3 - 4 months.

Nutrition:

- Pumpkin seed is a good source of zinc, iron, protein and energy.



Quinoa (*Chenopodium quinoa*)

Description:

- A small herb that grows 20 cm - 3 m tall.
- The seeds are 1 - 2.6 mm across. They can be white, yellow, red, purple, brown or black.

Edible parts:

- The seed is used for soups and stews, puffed or eaten as a side dish like rice or ground into flour.
- Sprouted seeds can be used in salads.
- Young leaves can be cooked and eaten as a vegetable.
- The flower clusters can be steamed like broccoli.

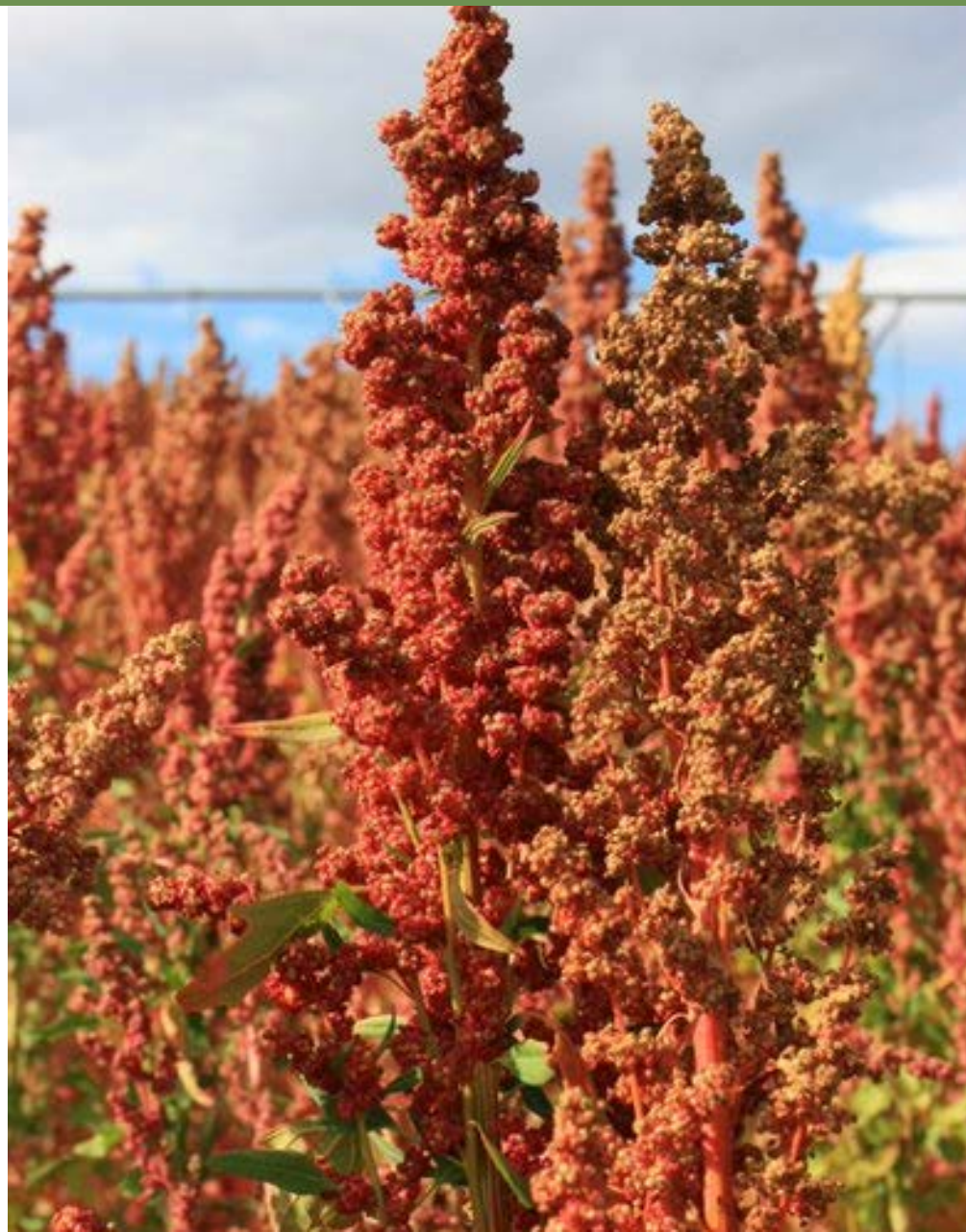
Growing:

- The plant can adapt to cold and drought.
- Planting time - October to December. Plants are grown from seed.

Nutrition:

- Good plant source of protein and energy.
- Many varieties contain saponins which give them a bitter taste. The outside skin is removed to get rid of these saponins.

Photo credit: Kindred Organics.



Silver beet (*Beta vulgaris* subsp. *cicla*)

Description:

- A broad-leaf, annual plant with smooth stalks that are often white with a dark green leaf. Stalks and leaves are produced from the base to form a clump. Plants can also be blue. The leaves can be 12 - 25 cm long.

Edible parts:

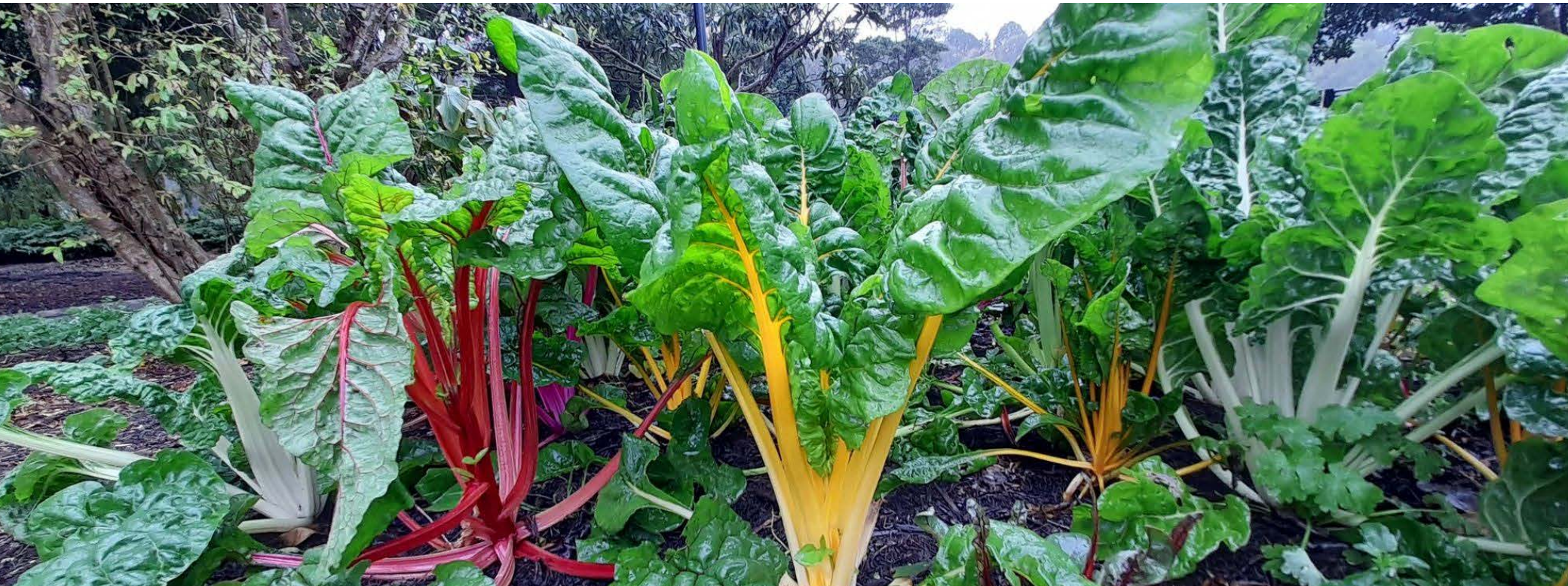
- The leaves and stalks are cooked and eaten.

Growing:

- Planting time - September to February.
- A spacing of 30 cm between plants is suitable.
- The first leaves are ready after 8 - 10 weeks and plants can produce for 2 years.

Nutrition:

- Relatively high in iron and vitamin A.



Spinach (*Spinacia oleracea*)

Description:

- An annual, leafy vegetable that grows 60 - 90 cm high and spreads 30 - 45 cm wide.

Edible parts:

- Leaves are cooked in a small amount of water. They are also used in soups and salads.
- Young leaves are eaten raw and older leaves are cooked.
- The sprouted seeds can be used in salads.

Growing:

- Planting time - October to December.
- It is normally grown directly from seeds.
- Plants need to be 25 cm apart.
- The older leaves are picked off. They can be harvested 8 weeks after sowing.

Nutrition:

- High in zinc and vitamin A.
- **Caution:** Spinach can contain oxalates which affects calcium absorption. Cooking is recommended before eating.

Sunflower (*Helianthus annuus*)

Description:

- An upright annual plant 1 - 4 m tall.

Edible parts:

- An edible oil is extracted from the seeds.
- Seeds can be eaten raw or roasted or ground into a meal for use in bread and cakes.
- The seeds can be boiled with water and honey to make a drink.
- The germinated seeds can be fermented into a yogurt or cheese.

Growing:

- It needs a well-drained, rich soil.
- Drought and frost resistant.
- Cannot tolerate very acid soils.
- Planting time - September to December.
- Seeds are sown at a depth of 2 - 4 cm and a spacing of 1 m by 0.5 m.
- Time to maturity is usually 4 - 5 months.
- Seeds are ready to eat when the flower starts to wither.

Nutrition:

- Good source of energy and zinc.

Tomato (*Lycopersicon esculentum*)

Description:

- A short-lived, upright, perennial plant with weak stems.
- It can grow to 2 m tall with support for the stems.
- Fruits come in a range of colours including black, yellow, orange and red.

Edible parts:

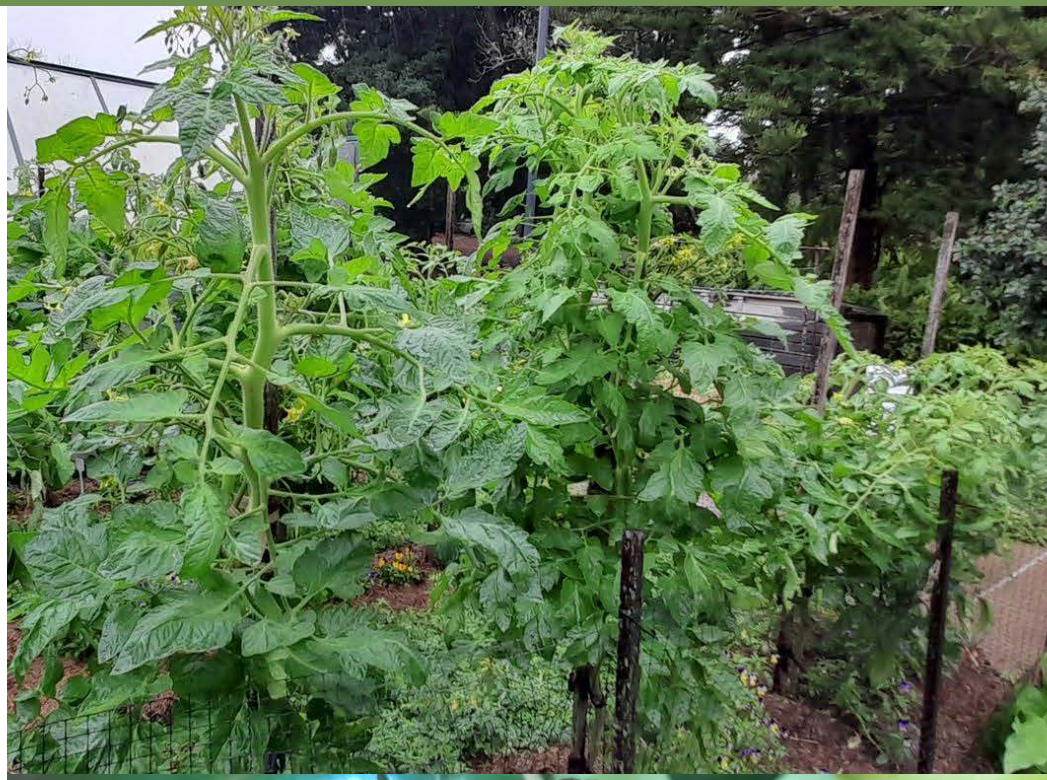
- The ripe fruit are eaten raw or cooked.

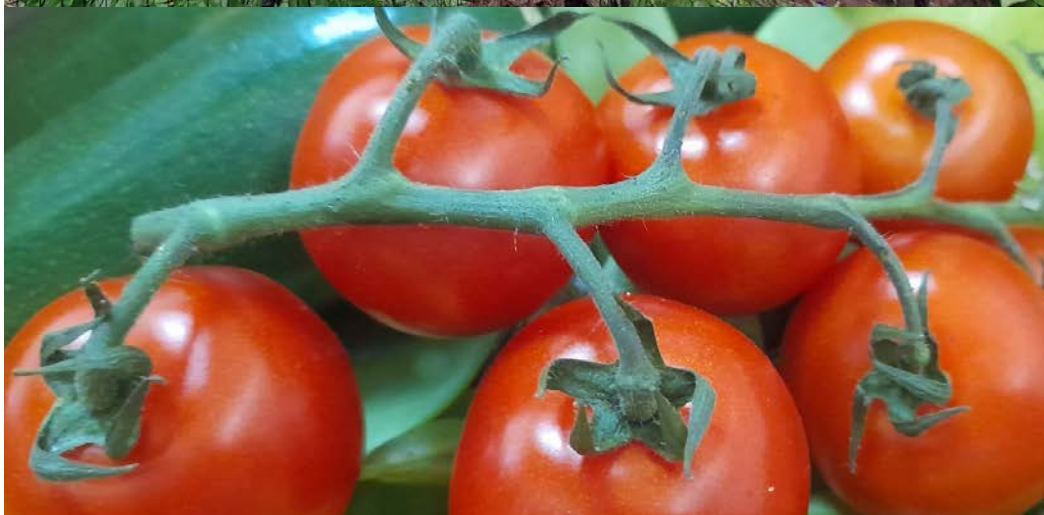
Growing:

- Planting time - October to November.
- Plants are grown from seeds spaced about 60 - 90 cm apart.
- They can also be grown from cuttings.
- The side branches of upright types are removed to give fewer and larger fruit.
- Upright plant types need to be tied to stakes.
- Plants are often grafted onto stronger rootstocks.

Nutrition:

- Good source of vitamin C
- **Caution:** Leaves and green fruit are poisonous.





Warrigal Greens (*Tetragonia tetragonioides*)

Description:

- Perennial, sprawling herb.

Edible parts:

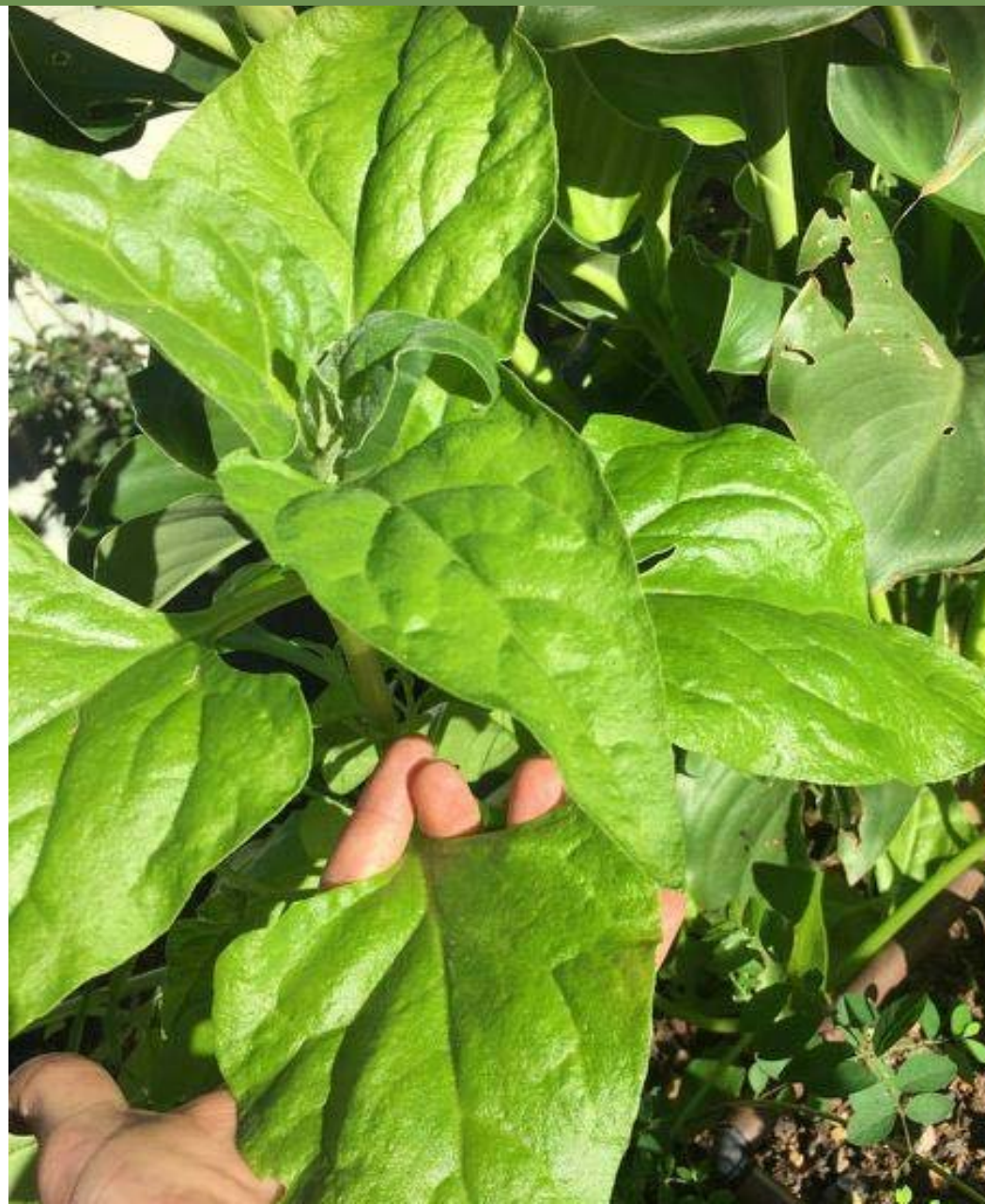
- All parts of the plant are edible after cooking.

Growing:

- Grows in full sun to part shade but requires full sun to ensure good growth during winter.
- Tolerates a wide range of soil types and coastal conditions.

Nutrition:

- High in vitamins K, C and B6 as well as manganese.
- It is worth sourcing a domesticated version from a nursery (likely to be lower in oxalic acid) rather that a wild plant.
- **Caution:** Cook before eating due to the presence of oxalic acid.



Watercress (*Nasturtium officinale*)

Description:

- A small, leafy, perennial cabbage family plant that grows in water and lasts for several years.
- It grows 30 cm high and has runners 2.5 m long.

Edible parts:

- The leaves and stems are eaten raw or cooked and have a spicy flavour.

Growing:

- This is a temperate climate crop that needs to be in water. Typically grows attached to the banks of streams. It will not tolerate drying out.
- Harvesting can occur 4 - 6 weeks after planting.
- Tips 5 - 10 cm long are harvested.
- Regular picking encourages branching and increases production.
- Watercress has a high phosphate requirement.

Nutrition:

- Good source of vitamin A.

Yellow wood sorrel *(Oxalis species)*

Description:

- A very common, creeping, perennial plant with clover-like leaves and small yellow flowers found in a wide range of habitats.
- There are about 30 species of Oxalis worldwide, seven of which are native to Australia. They all tend to be considered weeds of gardens and farms.

Edible parts:

- The stalks, flowers and leaves are edible.
- They have a wonderful tangy flavour when tasted raw.

Growing:

- Grows in a variety of moist soils in part shade or filtered sun.

Nutrition:

- Good source of potassium and vitamin A.
- **Caution:** should be cooked prior to eating due to the presence of oxalic acid.

Notes:

Who are we?

Food Plant Solutions (FPS) is a project of international significance born in Tasmania by the Rotary Club of Devonport North (2007). FPS works with aid providers around the world to help people gain an informed understanding of the nutritional value of local food plants.

The focus is on self-sustainable solutions that empower people in need, not just for now, but into the future.

The work of Food Plant Solutions is underpinned by the Food Plants International database of Edible Plants, developed by Tasmanian agricultural scientist and Officer of the Order of Australia recipient, Bruce French.

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This booklet is based on information from the Food Plants International database "Edible Plants of the World" developed by Tasmanian agricultural scientist Bruce French. Most images used in this publication are drawn from the Food Plants International database and www.BrisbaneEdibleGardening.org. Special thanks to Ellysse Horniblow Olga, Tino Babao, Arno King and Tiffany Russo.

Rotary FOOD PLANT SOLUTIONS ROTARY ACTION GROUP Solutions to Malnutrition and Food Security

BRISBANE EDIBLE GARDENING