

Food Plant Solutions Brief Guide to Food Plant Gardens in the Newport Beach and Costa Mesa region

Our bodies need nutrients to be healthy and strong - nutritious food provides these:

- Starch:** Starch provides sustained energy for the body.
- Protein:** Protein helps the body repair cells and make new ones. Protein is also important for growth and development in children, teens, and pregnant women. Symptoms of protein deficiency include wasting and shrinkage of muscle tissue, and slow growth (in children).
- Vitamin A:** Vitamin A is very important for eyesight and fighting disease, particularly in infants, young children and pregnant women. People who are short of Vitamin A have trouble seeing at night.
- Vitamin C:** Vitamin C helps us avoid sickness, heal wounds, prevent infections and absorb iron from food. Severe vitamin C deficiency increases the risk of scurvy with symptoms such as inflammation of the gums, scaly skin, nosebleed and painful joints.
- Iron:** Iron is important because it helps red blood cells carry oxygen from the lungs to the rest of the body. Low levels of iron cause anaemia, which makes us feel fatigued. Iron is also important to maintain healthy cells, skin, hair and nails. Iron is more available when Vitamin C is also present.
- Zinc:** Zinc is particularly important for the health of young children and teenagers, and to help recovery from illness. It is needed for the body's immune system to work properly. It plays a role in cell division, cell growth, wound healing, and the breakdown of carbohydrates. Zinc is also needed for the senses of smell and taste. Zinc deficiency is characterized by stunted growth, loss of appetite, and impaired immune function.



Starting a garden

PLAN:

Identify a suitable location for the garden. Factors to consider include:

A site that receives 6-8 hours a day of sunlight and is not shaded by buildings or trees.

Easy access – a garden that is difficult to get to will not be maintained.

Protection from predators like native animals. If this is an issue, consider what can be used as a barrier and install it before planting.

Adequate and easily accessed water, whether it be a garden hose or a watering can.

TOOLS AND EQUIPMENT:

What do you need to turn over the soil, to plant seeds and seedlings (e.g. spade, hand trowel, hoe) and how will soil be moved to cover seeds (e.g. rake). Can you borrow tools to reduce your start-up costs?

SIZE:

Gardens can be all different sizes. Plan the size of your garden – what space is available and how much time do you have? Start small and increase the area as you become more confident. If space is limited, remember plants can be successfully grown in containers or pots.

BUILD:

Clear the area, removing any existing plants and large weeds (turn the soil – dig, lift and turn it over onto itself). Once the soil has been loosened,

spread compost and work it into the soil. Avoid stepping on freshly turned soil, as this will compact the soil and undo your hard work. Once the digging is complete, smooth the surface with a rake and water thoroughly. Allow the bed to rest for several days before planting. Use a good quality potting medium if using pots and containers.

PLANT:

Seeds and seedlings can be purchased from nurseries, garden centres and most hardware stores. A packet of seeds will grow a lot of seedlings but take longer to mature than transplanted seedlings. Plant seeds and seedlings in accordance with their specific directions and apply sufficient water to ensure the soil around the seeds and/or seedling roots is moist. Consider how tall and wide each plant will grow when planning the space between plants. Information on seed packets or seedling labels will indicate the appropriate distance between neighbouring plants. Add a thick layer of mulch around seedlings to help keep the soil moist. Make small signs to stick in the ground to show what you have planted.

MAINTAIN:

Plants need regular watering, which ideally should occur in the morning, never in the heat of the day. Weeds will compete with the plants for nutrients and water, so it is important to keep them to a minimum. Hand weeding and adding mulch around seedlings will help keep weeds under control.

Starchy Staples provide energy and dietary fibre

Common name: Beetroot

Scientific name: *Beta vulgaris*

Cultivation: Plants are grown from seed. Normally the plants are planted in the final site because transplanting is difficult. Plants may get a soft heart due to boron deficiency. This is treated with borax.

Use: The red tubers are eaten after cooking. The root can be dried and powdered and mixed with barley or wheat flour. They can be pickled or fermented as beetroot juice. They are often boiled, sliced and served with vinegar. The leaves are edible. They are cooked in soups and stews.

Nutrients: root: energy; leaf: vit A, vit C, iron

Common name: Oca

Scientific name: *Oxalis tuberosa*

Cultivation: Plants are grown from tubers or cut pieces of tubers which contain 1-3 eyes. Planting is normally done at the beginning of the rainy season or Spring as soil temperatures increase. Plants are weeded and soil mounded around them. A spacing of 20-40 cm x 20-36 cm is recommended.

Use: The tubers are acid when fresh but are dried slightly then cooked and eaten. The bitter kinds are freeze dried and stored for later use. They can be used in soups and stews. The young leaves and shoots can be eaten. **Caution:** Fresh tubers contain oxalates, which affects calcium absorption.

Nutrients: tuber (cooked): energy

Common name: Potato

Scientific name: *Solanum tuberosum*

Cultivation: Plants are grown from tubers. Large tubers can be cut to include a bud or "eye". A seed piece of 40-50 g is suitable. It is best to inter-crop as this stops bacterial wilt spreading. The plant is surrounded by dirt when 20-25 cm tall. Later the tubers need to be kept covered with dirt.

Use: The tubers are cooked and eaten. They are also fried, canned, and made into starch. The tubers are boiled, baked, roasted, mashed, and used in soups, stews, dumplings, pancakes and potato salads.

Nutrients: energy, iron, zinc



Legumes provide protein for growth

Common name: Common bean

Scientific name: *Phaseolus vulgaris*

Cultivation: Plants are grown from seed, preferably sown in raised beds. Seeds remain viable for 2 years. Germination is normally good if seed has been well stored. Climbing types need stakes. Plants are self-fertilised. Beans can be intercropped with other plants. If grown on their own, bush types can be spaced at 25 cm x 25 cm. They can be sown closer together in rows wider apart to make weeding and harvesting easier. For dried beans, once the pods are mature and turning yellow, the whole plants are pulled, then dried and threshed. Flowering in most French bean varieties is not affected by day length.

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

Nutrients: protein, vit A

Common name: Pea

Scientific name: *Pisum sativum*

Cultivation: Plants are grown from seed. Seed can be collected for re-sowing. A spacing about 5 cm apart in rows 25 cm apart is suitable. Seed can be sown 3-5 cm deep. If rotting is a problem, plants can be supported off the ground. Seed can be sown in autumn directly into the garden or into punnets/trays and transplanted once germination has occurred.

Use: Mostly the young seeds are eaten. They can be eaten raw or cooked. Sometimes the young pods and leaves are eaten. The flowers are eaten in salads. The sprouted seeds are eaten. The young leaves and buds are cooked as a vegetable. The dry seeds are eaten. They are used in soups and stews and ground into flour.

Nutrients: seed (raw): protein, vit A, iron; seed (boiled): vit A

Common name: Soybean

Scientific name: *Glycine max*

Cultivation: It is grown from seed direct planted or in a nursery and then plants transplanted to the garden. Plants need to be about 20 cm apart. Plant in garden in spring once all frosts have finished.

Use: The young pods and ripe seeds are eaten. The dried seeds are boiled or baked and used in soups, stews, and casseroles. Toasted seeds are eaten like a snack. The young leaves can be eaten.

Nutrients: energy, vit A, iron

Leafy greens are a source of iron

Common name: Lettuce

Scientific name: *Latuca sativa*

Cultivation: Plants are grown from seeds and often transplanted. Seedlings are transplanted after 30-35 days and spaced 45 cm apart. Seeds need to be sown very shallowly. In hot places lettuce develops a bitter taste if transplanted or checked in their growth. Cutting the tap root can stop plants seeding quickly.

Use: Eaten raw or in soups. The sprouted seeds can be used in salads or sandwiches. Leaves can be dried and stored.

Nutrients: energy, protein, vit A, vit C, iron, zinc

Common name: Silver beet

Scientific name: *Beta vulgaris subsp. cicla*

Cultivation: A spacing of 30cm between plants is suitable. Seed are sown 2.5 cm deep.

Use: The leaves and stalks are cooked and eaten. They can be eaten raw in salads. The leaf stalks can be cut from the leaf and cooked separately as an asparagus substitute.

Nutrients: vit A, vit C, iron, zinc

Common name: Spinach

Scientific name: *Spinacia oleracea*

Cultivation: It is normally grown directly from seeds. Plants need to be 25 cm apart.

Use: 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. **Caution:** Spinach can contain oxalates which affect calcium absorption.

Nutrients: vit A, vit C, iron



Fruit are an important source of vitamins and dietary fibre

Common name: Cape Gooseberry

Scientific name: *Physalis peruviana*

Cultivation: Plants should be spaced 45 cm apart. They regrow from seed each year. Do not plant seedlings or sow seed until all frosts are finished as they are frost tender.

Use: The ripe fruit are eaten fresh or cooked. They are used for jam or can be dried, preserved, stewed, pureed, or used in pies, cakes, jellies and sauces.

Nutrients: vit A, vit C

Common name: Black currant

Scientific name: *Ribes nigrum*

Cultivation: Plants are easily grown from cuttings of 2 year old canes. The 3 year old canes are cut off at two buds above soil level. Plant dormant canes in autumn.

Use: The ripe fruit are used for jam and drinks. They can also be used in sauces and pies. The buds are used for flavouring. The fresh leaves are eaten in soups. They are also used as a spice in sauerkraut. The fruit are used to make wine. The flowers are used in ice cream and liqueurs. The seeds are a source of high omega-6 oil used in salad dressings.

Nutrients: vit A, vit C

Common name: Strawberry

Scientific name: *Fragaria x ananassa*

Cultivation: Plants are grown from runners. These runners form roots and then new plants. Plants are spaced about 45 cm apart in rows 75 cm apart.

Use: The ripe fruit are eaten raw. They are also used in desserts, jams, preserves and for flavouring.

Nutrients: vit C



Vegetables are an important source of vitamins and dietary fibre

Common name: Capsicum, Sweet Pepper

Scientific name: *Capsicum annuum* var. *annuum*

Cultivation: Plants are grown from seed. Both self and cross pollination occur. It is possible to save your own seed. Seed will keep for 2 to 3 years. Seeds germinate in 6 - 10 days. Plants can be transplanted. Plants need to be about 50 cm apart. About 50% of flowers set fruit.

Use: The fruit are edible raw or cooked. They are stuffed, roasted, fried, preserved and use as flavouring.

The leaves are edible cooked.

Nutrients: vit A, vit C

Common name: Radish

Scientific name: *Raphanus sativus*

Cultivation: Plants are grown from seed planted at 5 cm spacing.

Use: The young tender roots are mostly eaten raw. The leaves and flowers are eaten cooked. Roots and seeds are pickled. The young pods can be eaten in salads.

Nutrients: (seed) energy, protein (leaf) Vit A (root) iron

Common name: Tomato

Scientific name: *Lycopersicon esculentum*

Cultivation: Plants are sown from seeds. These are normally sown in a nursery and transplanted. They are transplanted when 40-45 days old or 15 cm high. They are spaced about 60-90 cm apart. Seeds can also be sown directly in the field. They can also be grown from cuttings. To give fewer and larger fruit the side branches of upright types are removed. Upright plant types need to be tied to stakes. Plants are often grafted into stronger rootstocks.

Use: The fruit are eaten raw or added to salads. They can be cooked, stewed, pureed, stuffed, made into sauces, juice, and used in soups and stews. Unripe fruit are pickled, roasted, fried and dried.

Nutrients: energy, protein, vit C, iron



Acknowledgements:

This guide is based on information from the Food Plants International (FPI) database, “Edible Plants of the World”, developed by Tasmanian agricultural scientist Bruce French AO.

“Food Plant Solutions Brief Guide to Food Plant Gardens in the Newport Beach and Costa Mesa region” is a limited selection of food plants intended as a **Draft Guide only** to identify some local food plants that have high levels of nutrients that are important to human nutrition. This guide has been developed with the best intention to create interest and improve understanding of the important local food plants in the Newport Beach and Costa Mesa region. It is not a comprehensive guide of food plants for Newport Beach and Costa Mesa. Other important nutritious plants may be equally useful. Please contact Food Plant Solutions if you would like further information about these, or more detailed information about the ones selected.

Food Plant Solutions Rotary Action Group was initiated by the Rotary Club of Devonport North to assist in creating awareness of the edible plant database developed by Food Plants International, and its potential in addressing malnutrition and food security in any country of the world. In June 2007, Food Plant Solutions was established as a project of Rotary District 9830, the Rotary Club of Devonport North and Food Plants International. The primary objective of the project is to increase awareness and understanding of the vast food resource that exists in the form of local plants, which are well adapted to the prevailing conditions in which they are to be grown, and how this resource may be used to address hunger, malnutrition and food security. For more information, visit the website www.foodplantsolutions.org or email info@foodplantsolutions.org

Disclaimer: This Guide has been produced using information from the “Edible Plants of the World” database compiled by Bruce French of Food Plants International. Although great care has been taken by Food Plants International and Food Plant Solutions, neither organisation, or the people involved in the compilation of the database or this Field Guide:

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- assume responsibility for sickness, death or other harmful effects resulting from eating or using any plant described in the database or this Brief Garden Guide.

Always be sure you have the correct plant, and undertake proper preparation methods.

Compost - if it has lived once, it can
live again.

