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

Food Plant Solutions Brief Guide to Food Plant Gardens in the ACT

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. shovel, 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 size 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 seedlings directly transplanted. 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 either early in the morning, or late in 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	**Scientific Name**	**Cultivation:**	**Use:**	**Nutrients:**
Native leek, Golden lily	*Bulbine bulbosa*	It can be grown from seed. They can also be grown by division of the clump.	The corm is cooked and eaten.	Energy, Protein, Iron, Zinc
Jerusalem artichoke	*Helianthus tuberosus*	Plants are grown from vegetative setts. These can be dormant for 7 months before they will grow. The flowers on the plants are removed to increase the yield. Tubers are often sweetest after a frost.	The tubers are eaten boiled or baked. They can be steamed, fried, pickled, pureed, or used in soups and casseroles. They can be eaten raw in salads. Roasted tubers are used as a coffee substitute.	Energy, Protein, Iron
Oca, Yam	*Oxalis tuberosa*	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 and plants are weeded and soil mounded around them. A spacing of 20-40 cm x 20-36 cm is recommended.	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 calcium oxalate.	Energy, Protein

Legumes provide protein for growth				
Common Name	**Scientific Name**	**Cultivation:**	**Use:**	**Nutrients:**
Australian -pea, Dolichos-pea	*Dipogon lignosis*	Plants can be grown by seeds or cuttings.	The young seeds are eaten fried or cooked and salted. The green pods are eaten. The dried seeds are also cooked and eaten.	Energy, Protein, Iron
Pea	*Pisum sativum*	Plants are grown from seed. Seed can be collected for re-sowing. A spacing about 5cm apart in rows 25cm apart is suitable. Seed can be 3-5cm deep. If rotting is a problem, plants can be supported off the ground.	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.	Seed raw: Protein, ProvitA, Iron Seed boiled: ProvitA
Broad bean	*Vicia faba*	The crop is grown from seed. Seeds are sown at 15 to 40cm spacing. If the seed pod formation is poor, it can be improved by pinching out the tops of the plants when in flower. Hand pollination also helps.	It is mostly the young beans that are eaten. The ripe beans and leaves are also edible. The dried beans can be boiled, ground into flour, and added to soups or used for making tofu. Sprouted seeds are cooked and eaten.	Seeds (dried): Energy, Protein, ProvitA, Iron. Seeds (fresh, raw): VitC, Zinc.

Leafy greens are a source of iron				
Common Name	**Scientific Name**	**Cultivation:**	**Use:**	**Nutrients:**
Silver beet	*Beta vulgaris subsp. cicla*	A spacing of 30cm between plants is suitable. Seed are sown 2.5cm deep.	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.	ProvitA, VitC, Iron and Zinc
Kale	*Brassica oleracea* var. *acephala*	Plants are grown from seed. Seedlings can be transplanted. Grow 30cm apart.	The leaves are eaten boiled, steamed, and used in soups and stews. The unopened flower buds are used like broccoli.	VitC, Iron
Warrigal greens	*Tetragonia tetragonoides*	It is grown from seeds or cuttings. It is easy to save seed. Seed can be bought in stores. Seeds often grow better if soaked in water overnight. Seedlings are not easy to transplant so it is better to sow direct. Often 3-4 seeds are planted in a mound with the mounds 70 cm apart. Cuttings form roots quickly.	The fleshy leaves and tops are eaten. They can be eaten raw, steamed, boiled, stir-fried, creamed, served with mushrooms, or made into quiche. **CAUTION**: They can contain oxalates and nitrates which can be poisonous.	ProvitA, VitC, Iron

Fruit are an important source of vitamins and dietary fibre				
Common Name	**Scientific Name**	**Cultivation:**	**Use:**	**Nutrients:**
Rosella	*Hibiscus sabdariffa*	Seeds are sown and the seedlings can be transplanted. They are transplanted when 15-20 cm high. Seed should be planted 1-2.5 cm deep. A spacing of 50 cm x 50 cm is suitable although a wider spacing is used for fruit and a closer one for leaves. Plants can be propagated by cuttings.	The swollen bases of the flowers are used for jams or drinks. The young leaves can be cooked and eaten. They can also be dried and used later. The flowers can be used to flavour drinks. The seeds can be eaten. They can be dried and ground. They can be pressed for oil. They are also fermented. The dried ground seeds are used for coffee.	Calyces: VitC Seeds: Energy, Protein, Iron Leaf: Protein, ProvitA, VitC, Zince
Rhubarb	*Rheum rhabarbarum*	It is grown by division of the rootstock. The flower stems are removed to give a better yield of leaf stalks next season. Rhubarb likes a rich soil, so add compost and natural fertilisers.	The leaf stalks are cooked and eaten. They need sweetening. They are used to flavour ice cream, jams, jellies, sauces, cakes, tarts, puddings, and are also stewed. ***CAUTION: Do not eat the leaves, they are poisonous.***	VitC
Pink flowered native raspberry	*Rubus parvifolius*	Plants can be grown by cuttings. They can also be grown from seed.	The fruit are eaten raw. They are also made into jam and pies or brewed into wine.	ProvitA, VitC

Vegetables are an important source of vitamins and dietary fibre				
Common Name	**Scientific Name**	**Cultivation:**	**Use:**	**Nutrients:**
Kohl rabi	*Brassica oleracea var. gongylodes*	The seed can be sown direct or in a nursery and transplanted.	The bulb is cooked and eaten and can be added to soups or lightly simmered in coconut milk with spices. The young leaves are edible. It is best eaten when young before needing to be peeled and this preserves the flavour.	Protein, VitC, Iron
Broccoli	*Brassica oleracea var. italica*	The seeds are planted in a nursery then transplanted. They are transplanted after 4-6 weeks. A spacing of 60cm x 60cm is suitable.	The central flower is cooked and eaten. The leaves are edible. The sprouted seeds are eaten.	ProvitA, VirC, Iron, Zinc
Tomatillo	*Physalis ixocarpa*	Plants are grown from seed. Seed germinate in 7-10 days. Plants should be spaced 40 cm apart. Plants are best staked to prevent plants sprawling and fruit rotting. Plants can be grown from cuttings. Flowers are self-fertile.	The fruit are eaten fresh. They can be used for jam, sauces, pickles, or juice. They are used in soups, curries, and in cooked meat dishes. Unripe fruit are often used in a hot chili sauce.	Energy, ProvitA, VitC, 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 "ACT" is a limited selection of food plants, which is 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 ACT. It is not a comprehensive guide of food plants for ACT. 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 where they naturally occur, 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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Always be sure you have the correct plant, and undertake proper preparation methods.