



Toronto Master Gardeners

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Toronto Botanical Garden

Toronto Botanical Garden is a volunteer-based, charitable organization whose purpose is to inspire passion, respect and understanding of gardening, horticulture, the natural landscape and a healthy environment.

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Pelargonium (Geranium)

Description

What we call a 'geranium' is often a Pelargonium (often nick-named or known as Cranesbill because of the shape of its fruit), a member of the family *Geraniaceae*. The Genus 'Pelargonium', with several hundred species, is comprised mostly of evergreens. The Pelargonium Family can be split into 4 main divisions with further sub divisions: 1. Species including Primary hybrids, Scenteds and Uniques 2. Regals including Angels 3. Zonals- Largest division including Singles, Semi and doubles, Miniatures and Dwarf, Ornamental foliage Types and F1 Hybrids 4. Ivy Leaved types with Single, Semi and Double Bloomed varieties.

In 1632 the first geranium was taken to England from South Africa, its native home.

A huge variety of cultivars (from about 20 species) are used in Ontario's gardens as annuals, blooming from early summer to frost. The leaves, borne often on long stalks, vary in shape and colour (mostly are mid-green) but are usually alternate, palmately lobed or pinnate. The five petalled flowers (single or double) also vary in form and are found in clusters at the ends of erect stems.

Cultural Considerations

The Pelargonium's cultural requirements are few (but specific) and easy to maintain. For best results they appreciate well-drained soil (neutral to alkaline loam low in humus content with added grit, coarse grit or sand, perlite or vermiculite for rapid drainage.) or potting soil and half a day to full day sun. Twelve hours of sun a day is required for optimal flowering. These plants can tolerate temperatures up to

36°C. However, Regal cultivars prefer partial shade conditions and cooler growing conditions. Zonals will tolerate some shade.

These plants like average moisture but are able to withstand periods of drought. Pelargoniums do not like hot, humid conditions. Do not overwater. Water sparingly in cool temperatures and at regular intervals in hot spells. Limp foliage indicates that watering is necessary.

Do not feed with a high nitrogen fertilizer as this will result in all leaves and no blooms. The best fertilizer is one high in phosphorus and potassium, but low in nitrogen, applied every 3 - 4 weeks from March to October. This will encourage flowering and plant vigor rather than foliage production.

As a houseplant, the pelargonium generally requires good potting soil, the sunniest spot in the house and thorough watering when the soil surface is dry. (There are some exceptions. Some species and Ivy-leaved pelargoniums prefer shade in mid summer.) Containers must have drainage holes. Applications of a high phosphorous liquid fertilizer once a month (not during November, December and January) is recommended. Cool nights are preferred.

Maintenance:

Pinch back the growing tip in early spring to encourage bushiness and more flower production.

Spent blooms should be removed to encourage more bloom.

Propagation

Pelargoniums can be grown from seed when temperatures reach 13 to 18°C. Softwood cuttings can be taken in spring, late summer or early fall.

Pelargoniums can be overwintered. Before the first frost lift the plants with a little soil around the roots and cut them back by at least one third (remove dead leaves, stems etc).

Decaying matter should be removed immediately to prevent the fungus, *Botrytis cinerea* from having a place to grow (particularly in cool, moist summers).

Place them in a dry container in a bright, frost free, well-ventilated shed or garage. They should be left to die back naturally with very little water. Do not overwater but do not let the root ball dry completely. Re-pot in late winter as the new growth appears.

Location

Most Pelargoniums flourish in full sun (i.e. 6 hours direct sun), in a well ventilated area, in temperatures of +12c, with well-drained soil.

Uses

They are excellent bedding plants and are particularly effective when planted in mass. They are also unsurpassed container plants.

They can also be grown in temperate greenhouses or as houseplants. The miniature (3" - 5"), dwarf (6" - 8") and the semi-dwarf (10" - 12") zonal varieties make excellent houseplants if given at least half a day full sun or grown under fluorescent lights. As they age, they become woody and make charming bonsai specimens.

Due to its trailing habit ivy geraniums will grow well in containers. Ivy geraniums also make excellent groundcover.

Pelargonium Grouping:

The Pelargonium Family can be split into 4 main divisions with further sub divisions: 1. Species including Primary hybrids, Scenteds and Uniques 2. Regals including Angels 3.

Zonals- Largest division including Singles, Semi and doubles, Miniatures and Dwarf, Ornamental foliage Types and F1 Hybrids 4. Ivy Leaved types with Single, Semi and Double Bloomed varieties.

I Species

Most people do not recognize these "original geraniums" as geraniums at all. A popular variety is the *Pelargonium echinatum* or Sweetheart Geranium. It has thick gray stems with spines, deeply cut gray-green leaves and small white blooms. Each of the two upper petals is centered with a distinct red heart.

Scented

P. grossularoides *P. odoratissimum* *P. tomentosum* etc. (Scented -leaved)

This group includes shrubby plants from many different classes and they vary greatly in growth habit and leaf shape. They are grown mainly for their mid-green foliage (varying greatly in shape and size) although some varieties do have beautiful blooms. The single flowers (small and often somewhat star-shaped) are found in small clusters varying in colour (mauve, white or pink). Each variety has a unique scent that is released by bruising the leaves or misting them. To obtain the strongest scents, fertilize and water sparingly.

Unique

This group of shrubby evergreen perennials attain a height of 2 to 4 ft. They have rounded (sometimes lobed) leaves that are mid-green and sometimes scented. Their flowers are single petaled, with a trumpet shape in colours of pink, red, pink or purple or orange flowers similar to the regal type.

VI Regals including Angels

Regal (Martha Washington)

These are bushy, shrub like plants with short stems ranging in height from 12 inches to 4 ft. They carry rounded to oval mid-green leaves that may be lobed or partially toothed. The flowers (trumpet shaped) are single petaled in single or combinations of a wide range of colours (red, pink, purple, orange, white). They may have high, azalea-like blooms or round, flat blooms resembling pansies (Pansy Flowered).

These are usually sold as spring pot plants in full bloom. They can later be set out in the garden but re-bloom is often disappointing as they require cool temperatures to set buds. These can be damaged by heavy rain or wind.

Angels P. x domesticum (Dwarf and Miniature Pelargoniums)

Cultivars are crosses of *P. crispum*, *P. grossularoides* and other scented species. These are bushy subshrubs that can attain heights of 9 inches to 3 ft. The mid-green leaves are rounded and crinkled and may have a scent. All have single blooms or 5 petals - usually white pink or pale mauve but are produced in great quantity.

III Zonals

These are the familiar geraniums, which are grown from cuttings. These are erect, bushy plants. Most will grow to 24 inches but some cultivars are dwarfs (5 to 8 inches) or miniature (up to 5 inches). The word "zonal" refers to the dark bronze green or maroon horseshoe-shaped marking on the rounded light to deep green leaves, although some varieties lack this zone. Flowers can be single (5 petals), double to semi-double, in a wide range of colours including bright red, pink, purple, white, or orange. There are many groupings of zonal pelargoniums but one group, referred to as the Novelty- flowered, identify cultivars according to unusual flower types such as:

Bird's egg: Petals are speckled

Cactus-flowered: either single or double blooms with narrow, uneven and twisted petals

Carnation flowered: Serrated petals

New life: Blooms are flecked and striped bicolours

This Phlox: Single blooms with darker eyes

Rosebud: Double blooms resembling tiny rambler roses

Tulip-flowered: petals are tightly incurved giving a tulip-like appearance

Stellar: star-shaped blooms - foliage deeply serrated

Included in the zonal geraniums are the fancy-leaf varieties that have bicoloured or multicoloured leaves.

IV Pelargonium peltatum (Ivy leaved)

These are named for the shape of the mid-green leaf (lobed and sometimes pointed) that is similar to English ivy (*Hedera helix*). The flowers can be single or double in colours similar to the zonal pelargoniums. These plants have more tolerance of some shade. Popular varieties to look for are the Harlequins which are the result of crossing zonals and Ivy leaved Pelargoniums such as Rouletta -they are more sun tolerant.

Hybrid Ivy-Leaved

These varieties trail like the ivys but have leaves and large heads of bloom like the zonals. They also have the zonals' tolerance for sun. Varieties to look for: Pascal, Schoen Von Grenchen and Pretty Girl.

Pests and diseases

Pelargoniums are can be infested by a variety of insects: thrips, spider mites, mealy bugs, caterpillars, whiteflies, aphids.

They may also be affected by gray mould (*Botrytis cinerea*), mildew, rust, black leg, flower break virus, oedema (corky growths on ivy leaf types) and xanthomonas blight (Bacterial).

Organic Management and Control Strategies

The City of Toronto adopted a new municipal by-law (spring 2004) that restricts the use of pesticides. For details about the by-law visit the Pesticide by-law page on Toronto Public Health's Web site at www.city.toronto.on.ca/pesticides or www.toronto.ca/health. Questions may be e-mailed to pesticide@toronto.ca.

Cultural Controls:

As a general rule good cultural practices that ensure optimal growing conditions, and good air circulation should minimize the risk of disease. Healthy plants, grown in appropriate conditions are less stressed and less vulnerable.

- Maintain a chemical free garden, which will promote natural predators.
- Plant disease resistant cultivars.
- Plant species that attract a variety of insects to the garden.
- Visit your garden centre for natural predators or parasite that occur naturally to control a pest (e.g. *Orius insidiosus* can be purchased to control thrips) or organic soap products that are effective against such pests as thrips and mealy bugs.

Mechanical Controls:

- Do not water over the heads of the plants, particularly in late afternoon.
- Rake up and destroy all diseased parts of plants and debris and do not use this organic material as compost.
- Get rid of and destroy flowers with thrips.

References

The Toronto Botanical Garden Weston Family Library is an excellent source for horticultural information.

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