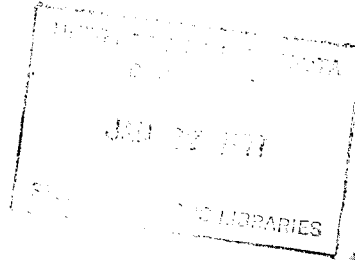


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Outdoor - Indoor Geranium Culture



INTRODUCTION

The garden geranium is a favorite outdoor-indoor plant.

It belongs to the genus *Pelargonium* which means "stork" in Latin. This plant has a long, slender fruit capsule which resembles a stork's bill. There are over 200 *Pelargonium* species and many well-known hybrids. Most species originated in South Africa. The common garden geranium is *P. hortorum*.

Few plants offer such variation in flower color, growth, and leaves. The geranium flowers come in whites, pinks, salmons, reds, and bi-colors. There are double flower types and old-fashioned singles. Growth habits range from trailing vine types to upright garden forms. Leaves may be smooth or have a heavy covering of hair. They may be nearly circular or deeply segmented and lacy. The leaves can be green or green and white. They may be patterned with combinations of reds, yellows, and oranges.

Leaf aromas include scents of lemon, orange, lime, peppermint, nutmeg, and rose.

Martha or Lady Washington geraniums (*P. domesticum*) have among the brightest flowers. Petals range from purple black to yellow. However, they flower only at a night temperature of between 50°F. and 60°F. They normally flower only in the spring.

The most common garden geraniums are:

Red — Dark Red Irene; Cardinal; Sincerity; Blaze; Irene; Ricard; Toreador.

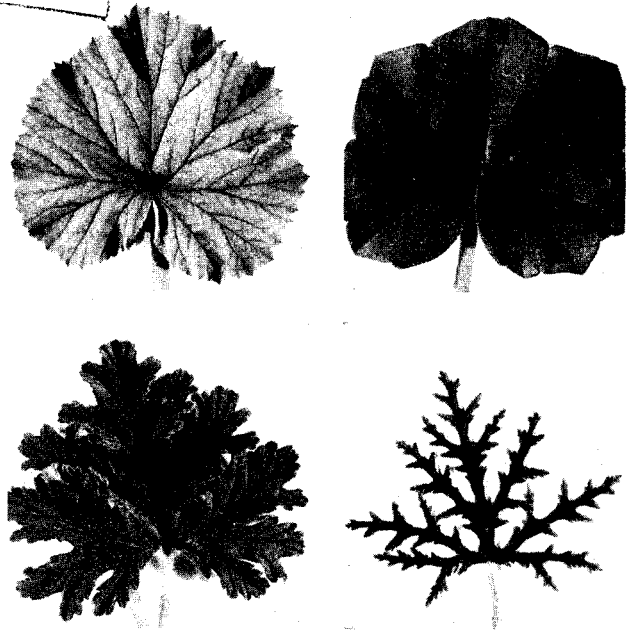
Salmon — Salmon Irene; Salmon Supreme; Penny Irene; Pink Camelia; Springtime; Minnetonka.

Orange — Orange Ricard; Olympic Red; Orange Glow.

Pink — Pink Cloud; Cherry Blossom; Genie; Enchantress.

White — Snowball; Snowmass.

Gardens should have various color combinations and contrasts. Pink and white are cool colors. These provide a pleasant effect in outdoor living areas.



These are examples of some geranium leaf forms and types. **UPPER LEFT:** *P. domesticum*-Martha Washington Geranium; **UPPER RIGHT:** *P. peltatum*-Ivy Geranium; **LOWER LEFT:** *P. graveolens*-Rose Geranium; and **LOWER RIGHT:** *P. radens*-Crowfoot Geranium.

OUTDOOR GERANIUM CULTURE

The soil should be at least 60°F. There should be no danger of frost. The plants need at least 8 hours of sunlight each day. Open up your soil with sand, peat, perlite, or compost to allow water and air penetration. Place 2 to 3 inches of these additives on the surface and work them 8 to 10 inches into the bed. Avoid green manures and vermiculite. The pH should be 6.0 to 6.5 Two pounds of 10-10-10 dry fertilizer or 4 pounds of 5-10-5 dry fertilizer for 100 square feet can be incorporated into the soil at planting. A half rate application of this dry fertilizer can be spread at mid-season in July. Water these dry fertilizers into the soil. An alternate fertilizer scheme is 1 oz/5 gal. of water soluble 20-20-20 fertilizer at 21-day intervals. Use either dry or water soluble fertilizer methods, but don't use both or you will overfeed the plants. When you plant, make an irrigation furrow or dike around the plants. This is a reservoir for summer watering.

Faded flowers and dry leaves should be removed from the plants. These attract *Botrytis* fungus rot which attacks leaves and young buds. Protective sprays of Captan, Botran, or Daconil may be necessary during periods of cool, moist rains. Geraniums are normally free of insects.

Large plants are attractive in outdoor planters and tubs. The planters become warm when the sun strikes their surfaces, so keep these plants well-watered. Planters and tubs must have drain holes. If you have a sunny location or a sliding glass door in your home, you can move your geraniums indoors at the end of the summer. Hanging baskets with trailing geraniums are attractive. You can hang them from the eaves of your patio or on tree branches.

A dry, dark basement is not recommended under any circumstances for overwintering large plants. Plants overwintered in such conditions often cannot recuperate. Minnesota has only about 130 frost-free days, and half the summer could be spent nursing an ailing plant back to health.

INDOOR GERANIUM CULTURE

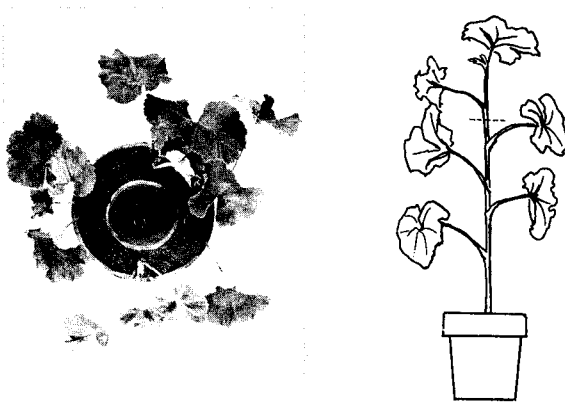
Geraniums can be reproduced through cuttings. These can be cut at any time of the year. Use short terminal stem sections 2 to 3 inches long. Only disease-free vigorous plants should be used for cuttings. No hormones are needed because geraniums root easily. Sand or any well-drained sterile soil mix (bake for 1 1/2 hours at 180°F.) can be used. If wilting is a problem, place a plastic bag over the pot. Do not place the cutting in full sunlight until rooting is evident. Then slowly open the bag and move the plant into full sunlight over a period of days.

Geranium pots should have drain holes. Broken clay pot chips or gravel should be placed in the bottom to aid in drainage. Clay or plastic pots can be used. Saucers or a single large pan for several pots should be placed under the pots to collect water. If large, shallow pans are used, small gravel can be placed on the bottom. The evaporating water from the gravel surfaces will increase humidity. If sufficient sunlight is available, kitchens and bathrooms are good places for plants because of high humidity. However, geraniums can rot from overwatering. They tolerate dry conditions and soil better than they do excess moisture.

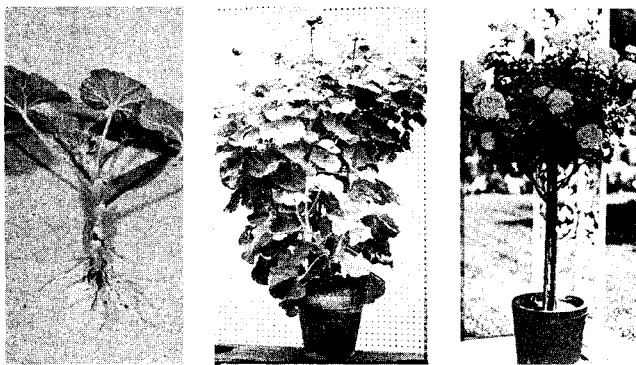
Geraniums in a home do not require constant feeding. If young plants are potted in a good soil mix. (1 soil—1 sand—1 peat), additional nutrition will not be required for about 2 months. After that, feed every 4 to 5 weeks. Water soluble 20-20-20 can be used at the rate of 1 oz/5 gal.

Geraniums thrive in full sunlight. In Minnesota, the shortest winter day is about 8 hours. Hence, 8 to 16 hours of supplemental fluorescent tube lighting (4 to 6 inches above the plants) will help growth. Incandescent bulbs are poor light sources. Lights can be used from 6 a.m. to 10 p.m., or from 6 a.m. to 9 a.m. and from 5 to 10 p.m.

Geraniums thrive in a wide range of temperatures. Ideally, geraniums should be grown at 65°F. day/55°F. night temperatures. However, most homes have a 75°F. day temperature. Some homes are at a constant temperature, while others drop a few degrees at night. Generally, geraniums are grown at temperatures which are too warm. Most houses and apartments have radiators by the windows to compensate for heat loss. Thus, maintaining plants near a light and heat source is a problem. Avoid hot, cold, and drafty areas.



ABOVE LEFT: Geranium cuttings can be propagated by rooting them in sand or a well-drained soil mix. The smaller clay pot is the water reservoir. Both pots must have drainage holes. To prevent wilting, the entire unit may be enclosed in a plastic bag. Avoid direct sunlight until rooting begins. **ABOVE RIGHT:** this leggy geranium has become too tall. The terminal shoot can be removed at the designated line, and this shoot can be rooted. The mother plant will then produce lateral shoots resulting in a compact plant.



ABOVE LEFT: This well-rooted geranium cutting is ready for potting. **ABOVE MIDDLE:** This geranium was allowed to become shrub-like. **ABOVE RIGHT:** A well-trained tree geranium.

Plants require carbon dioxide for shoot growth. Roots need oxygen. Thus, plants do not thrive in stale air. Geraniums turn yellow if a home has a gas leak. Since roots use oxygen for energy to absorb water and food, they cannot do well if they are overwatered and soil is compacted.

Indoor gardeners should prune or "pinch" their plants. Removing the growing point will produce a stocky, well-branched plant. Several vigorous stems may be allowed to form a shrub-like plant. Occasionally, geraniums are trained into the shape of a tree. To do this, a single stem is allowed to develop and all lateral shoots are removed. A stake is used for support. When the desired height is reached, the growing point is removed. Only the terminal lateral buds are allowed to form shoots. With time and shearing, these shoots will form the shape of a tree.

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