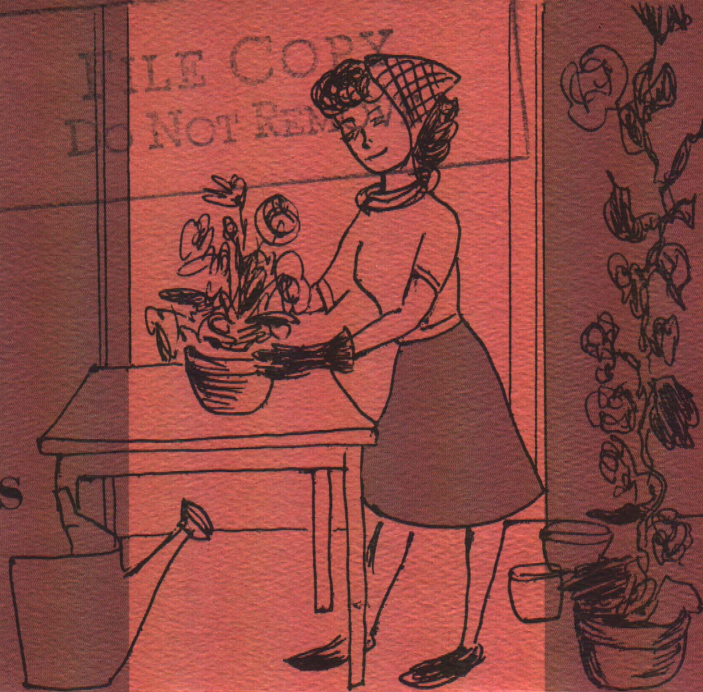


## Care of House and Garden Plants

# Hints on Growing Garden Chrysanthemums

Cooperative Extension Service Michigan State University



by

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The "mum" is known to us as a fall flower in a wide selection of color, shapes and sizes. It is used in many different capacities ranging from the garden, foundation plant, outdoor living area, in containers placed on steps or porches, or in front of shrubs. They can be purchased from a nursery or garden center as mature plants or rooted cuttings.

### Soil

Use a light soil, rich in organic matter and porous for aeration and drainage; to a clay soil add peat or sand and to sandy soil add peat. Types of organic matter are peat and leaf mold. Add 1 inch of organic matter, incorporate to a depth of 1 foot.

Soil should be moist at planting; if dry, water it the day before planting and if it is too wet, let it dry before planting.

### Fertilizer

In preparing a bed for mums, broadcast 3 to 4 pounds per 100 sq. ft. or 10-10-10 fertilizer. If you would rather fertilize after the cuttings or plants have been placed in the ground, then apply a tablespoon of 10-10-10 in a ring to the ground 2 inches away from each plant. Use this same fertilizer for a second application around Aug. 1, but give it at half strength.

It is a good idea to have a soil test done. Contact your nearest agricultural experiment station or Extension office for details.

### Planting

Mums need plenty of sun. Rooted cuttings should be about 4 inches high with a strong stem and 1 inch roots.

Never let the cutting wilt or dry. Place the cutting in water for 5 minutes before planting or until the foliage is turgid again. Plant when danger of frost has passed (approximately May 15-20).

Dig a hole 1 inch deeper and wider than the roots. After the cutting is set, firm the roots by pushing the soil toward the stem. Water heavily immediately after planting, and check for wilting on sunny days.

Plant the cuttings 18 to 24 inches apart. The bare spaces will decrease during the summer when the plant is growing at full strength. This reduces the danger of leaf disease.

### Growing

Water to a depth of 4 inches when in need. Avoid wetting the leaves during watering.

If the stems droop, stake with string and place the stake in the center of the pot. Tie the stems to the stake loosely, and form a figure '8' with the string.

Mums usually grow straight with few branches and flowers if pinching is not done, pinching with the thumb and forefinger and remove  $\frac{1}{2}$  to 1 inch of the growing tip. This procedure allows other branches to form from the leaf axil, giving a bushier plant. Pinch every time a stem has grown an additional 4 to 6 inches. Stop pinching on an earlier bloomer by July 15 and on late bloomer by Aug. 1.

Soil cultivation should start the week after planting and done each week thereafter. Be careful of the roots, so damage does not occur. Cultivate shallowly. If you are not one for hoeing each week, apply a mulch when the soil is moist and all growing weeds have been removed in the spring. Hay, straw, pine

needles or dried grass clippings can be used for a mulch. Apply to a depth of 1 to 2 inches.

Removing faded flowers from the plants helps keep plants pleasing to the eye and prevents disease.

### Potting up Outdoor Mums

Pot up plants between Aug. 15 and Oct. 1, when buds have taken shape. Use a pot size 7 to 9 inches.

Put a small flat stone or piece of broken pot over the drain hole. Dig up a large ball of soil with the roots and firm extra soil around the ball after it is in the pot. Water immediately with a soluble fertilizer.

Shade for about a week. Plants and flowers will last longer if they are kept at a cool temperature in the house. Move to an enclosed porch or cellar at night.

### Over Wintering

Cut stems back to 3 to 4 inches when flowers and foliage start turning brown from frost. Discard all material that has been removed from the plants.

When the soil is frozen several inches deep, apply a straw mulch 3 to 4 inches deep. About April 1, remove half of the mulch and loosen the rest. Remaining mulch can be removed in early May.

### Transplanting

This can be done anytime. If using your own plants, water a day before moving, and have a good ball of soil with the plant. Water immediately after replanting.

If you purchase plants, be careful to select plants that have just been dug from the nursery and no yellow leaves

are present. Place the plant immediately in the soil and be careful when removing it from the container as to not to disturb the roots. Firm the soil, water the plant, and proceed with the growing care.

### Propagation—Division and Cuttings

*Division* is done in early spring. Divide when the growth is 1½ inches high. Dig up plants, shake most of the soil off, cut off side shoots with roots attached. Only use growth that was attached to the main clump.

For *cuttings* use soft wood stem cuttings (can be taken until mid-July). Use a clean shallow wooden box (a greenhouse flat) or a flower pot. Fill the box with 3 inches of sand or sand and peat. Fill the pot to 1 inch of the rim, level medium and water well.

Use a sharp knife or razor to take cuttings which are 3 to 4 inches long. Cut just below a leaf axis (node). Remove leaves on lower 1½ inches of stem. Insert into medium, 1 inch apart and 1 inch deep. First medium around cuttings. Water again and maintain a moist medium thereafter.

Label cuttings. Cover box or pot and cuttings with polyethylene bag. Open only at night. Keep in shade but not in darkness, never in direct sunlight.

When cuttings have rooted (3 to 4 weeks) gradually remove plastic cover during the day. It should be completely off in 7 to 10 days.

Water thoroughly and then follow planting directions.

### Diseases

**Powdery Mildew** — Leaves covered with white powdery mold, often deformed and stunted.

*Control* — Spray with Karathane 22.5% WP, 1 tsp. per gal. or with Phaltan 50% WP 1½ T. of powder per gal. or dust with dusting sulfur until leaves are lightly covered.

**Leaf Spots** — Small brown to black spots on leaves, which grow together and cause early leaf drop.

*Control* — Spray with Zineb 75% WP or Captan 50% WP, 1 T. per gal.

**Wilt** — Lower leaves turn yellowish-green to yellow, wither and dry up. Lower stem may turn brown or black. Partial or complete wilting of plant frequently occurs.

*Control* — Use only plants from a reliable firm.

**Aster Yellows** — Plant dwarfed, leaves numerous but small and often yellow. Blossoms may be green instead of normal color.

*Control* — Burn infected plants, remove weeds, since they may be a source of the virus that causes yellows. Practice good insect control (virus transmitted from plant to plant by leaf hoppers).

### Pests

**Aphids** — Soft bodied, pale green to black, insects about ¼ inch long, suck juices from new growth or bases of buds. Both the adults and immature nymphs are pear-shaped but only the adults possess wings. Their feeding reduces the vigor of the plants and causes leaves to curl and flowers to become distorted. Honeydew liberated by the aphids adheres to the foliage and serves as a medium for, and is turned black by, a sooty mold fungus. This adds further to the disfigurement of the plant.

*Control* — Spray plants with either:

	100 Gal.	1 Gal.
	water	water
25% Lindane emulsion, or	1½ pints	1½ teaspoons
57% Malathion emulsion, or	1½ pints	1½ teaspoons
25% Diazinon emulsion, or	1½ pints	1½ teaspoons

*Dust* plants with 2% Lindane dust, 5% Malathion dust or 2% Diazinon dust.

**Thrips** — Alligator-shaped insects about 1/16 inch long, yellow to brownish-black in color infest the lower surface of the leaves. They rasp the leaf tissues liberating the plants juices which they suck up. Plants are weakened and the foliage becomes silvered or whitened. They also feed on the tender parts of flowers discoloring and deforming them.

*Control* — Spray plants every 10 days with either:

	100 Gal.	1 Gal.
	water	water
57% Malathion emulsion, or	1½ pints	1½ teaspoons
20% Lindane emulsion, or	1½ pints	1½ teaspoons
50% DDT Wettable Powder, or	2 lbs.	2 tablespoons

*Dust* plants every 10 days with either: 1% Lindane dust or 4% Malathion dust or 5% DDT dust.

Whether using sprays or dusts, coverage of the lower leaf surface is essential for effective control.

**Red Spider Mites** — Not insects, but red or greenish red creatures about 1/50 inch long, that are closely allied to spiders. They feed by piercing tissues and sucking up the liberated plant juices thus reducing the vigor of the plant. Infested foliage becomes stippled, yellow and then dies; infested flowers are discolored and pale. Mites can be detected by forcibly jarring a portion of the foliage over a white piece of paper; mites will appear as tiny moving specks.

*Control* — Spray plants with either:

	100 Gal.	1 Gal.
	water	water
18.5% Kelthane emulsion, or	1 pint	1 teaspoon
25% Aramite emulsion, or	1 pint	1 teaspoon
57% Malathion emulsion	1½ pints	1½ teaspoons

A second spray in 7-10 days may be necessary.

**Spittlebugs** — Pinkish or yellowish-green insects about 3/16 inch long produce, and can be found beneath, masses of white froth or spittle on stems and leaves. They suck up the plants juices causing yellow, stunted growth.

*Control* — Spray plants with either:

	100 Gal.	1 Gal.
	water	water
50% DDT Wettable Powder, or	2 lbs.	2 tablespoons
50% Methoxychlor Wettable Powder, or	2 lbs.	2 tablespoons
20% Lindane emulsion	1½ pints	1½ teaspoons

Try to force spray with enough pressure to penetrate spittle, or

*Dust* plants with either: 5% DDT dust, 5% Methoxychlor dust, 1% Lindane dust.