

# Missouri Environment & Garden

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## Consider Nearby Plants When Using Sidewalk Ice Melters

Whenever a winter storm is forecast, retail stores stock their shelves with an impressive array of products designed to help their customers do battle with ice and snow. Since we live in a litigious society, ice-melting products are usually prominent in the arsenal on display. Although ice-melt products are effective in reducing injuries to people, plants in areas near ice melter deployment may suffer collateral damage. A little tactical planning before applying ice-melting products can go a long way toward reducing negative effects on plants in the battle zone.

Although there are many products sold for melting ice, most of them work on basically the same principal; freezing point depression. One of the least expensive and most commonly used materials is rock salt, or sodium chloride (NaCl). This is the very same chemical added to an ice cream freezer to allow the melting ice to attain a temperature well below 32 degrees Fahrenheit and remain liquid. Other materials that can be used as sidewalk de-icers include calcium chloride (CaCl), ammonium nitrate (NH<sub>4</sub>NO<sub>3</sub>), potassium chloride (KCl), magnesium chloride (MgCl) and urea (CO NH<sub>2</sub>)<sub>2</sub>, all of which are ingredients in fertilizer products. Calcium chloride, although more expensive than rock salt, is probably the second most commonly used de-icing salt. This is because it is effective down to -20 F as opposed to +15 F for rock salt and because it is easier on sidewalks and nearby plants than is rock salt.

While de-icing materials may improve traction of shoes and tires in the short term, they may have some longer lasting, unpleasant effects if used carelessly. First, some materials cause pitting and crumbling of concrete sidewalks, making them unattractive or even unsafe. Rock salt (NaCl) is particularly hard on concrete walks, while urea, CaCl, KCl and MgCl cause much less damage.

Indiscriminant application of de-icing materials damages plants in exactly the same way as does excessive application of fertilizer salts. Plants absorb essential plant minerals from the soil as salts in solution in soil water. However, as salts accumulate, they increase the energy with which water is held in the soil. This makes it more difficult for roots to extract soil water, leading to stress and, if the salt concentration gets too high, to "burning" of roots, wilting and scorching of leaves and death. Direct contact of salt with foliage of evergreens, such as junipers, can also cause browning and dieback by drawing water out of plant tissues. Another problem associated with some types of ice-melters is degradation of soil structure. Accumulation of sodium causes clay particles to pack together more densely, leading to poor water infiltration and internal drainage. Thus, de-icing salt applied to sidewalks or roadways can have drastic effects on plants if allowed to wash and infiltrate into nearby soil.

There are several common sense steps that can be taken to reduce the likelihood that sidewalk de-icing materials will damage nearby plants. The most direct approach is to prevent the salt from contacting plants. Consider using dark colored abrasive materials like sand to improve traction. Use de-icers in moderation and channel runoff so that it does not soak into the soil near the sidewalk. However, if salt solution does enter the root zones of plants, damage can be reduced by simply leaching with water, much the same way that excess fertilizer salts are leached from the pots of houseplants by thorough watering. Leaching of clay soil can be difficult, however, since water infiltration is very slow. A simple method to determine whether ice-melting salt has leached into

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# New Bedding Plants for 2011

For avid gardeners, the cold, gloomy days of January can be brightened a bit by poring over seed catalogs while making plans for the upcoming growing season. If the prospect of growing something new or different is alluring to you, 2011 should be quite a treat for plant breeders and seed companies have introduced over 100 new varieties of flowers and vegetables for your consideration. Below is a description of a number of the new bedding plants for 2011 that captured the author's attention and, in most cases, should fare well in Missouri conditions.

**Begonia 'Beaucoup Red'** (*Begonia x hybrida*). 'Begonia Beaucoup' has a mounded growth habit and performs well in full sun for northern regions, late afternoon shade for southern regions and partial sun/shade for all regions. Large flowers are displayed above the plant foliage creating an impressive basket of color.

**Begonia 'Fairyland'** (*Begonia semperflorens*). This attractive compact fibrous-rooted begonia has consistently double flowers. Blooming at an early age, 'Fairyland' has more consumer appeal than their single flowering counterparts. In the garden 'Fairland' adds durable and season-long color to combination pots, as a specimen on the patio or in landscape plantings.

**Begonia 'Gryphon'** (*Begonia hybrida*). The unique, topical-like foliage of 'Gryphon' begonia combines majestic beauty with strength and durability. This showy plant with silver and green leaves makes a bold, dramatic statement in mixed or solo containers. Easy-to-grow, 'Gryphon' has works best in the shade. To extend its season 'Gryphon' can be brought indoors before frost to serve as a houseplant.

**Begonia 'Nightlife Blush'** (*Begonia semperflorens*). The large bicolor flowers of 'Nightlife Blush' have a bright white center edged in a rich pink. The dark bronze leaves (the darkest on the market) only enhance the intensity of the blooms in sun or shade. The uniform, compact plants hold up well to the heat for a bed of intense color all season long.

**Calibrachoa 'MiniFamous™ Double Pink Evol'** (*Calibrachoa hybrid*). 'Pink Evol' is a new color in this calibrachoa series that feature fully double flowers and is early and free-flowering at the same time. It has a compact growth habit and is free-branching. It fits many uses from baskets to mixed containers of any kind and is an easy-to-grow annual for full to part-sun.

**Chilli Pepper 'Basket of Fire'** (*Capsicum frutescens*). 'Basket of Fire' is the first true hanging basket pepper. Spicy hot peppers add color and character as they turn from cream to orange and (later) mature to red. The small leaves don't hide the fruit which emerge from under the foliage. The basal branches of 'Basket of Fire' cascade as they develop while new growth continues to fill the top for a well rounded appearance.

**Gaillardia 'Arizona Apricot'** (*Gaillardia x grandiflora*). A 2011 AAS Award Winner, Gaillardia 'Arizona Apricot'

offers a new color for this class. Blooms are lighter in color than traditional gaillardia and have yellow edges that deepen to a rich apricot center. 'Arizona Apricot' is free-flowering, covering the plant with bright blooms that look great in mass. This long-flowering perennial is hardy, drought-tolerant and relatively maintenance free.

**Gaillardia 'Punch Bowl' F1** (*Gaillardia aristata*). You will not believe your eyes when they alight on the large splashy pink and lavender blooms with frilly white edges of this new gaillardia. The hardy, easy-to-grow 16" plants flower from June through September and prefer well-drained soil. The bushy, full-bodied plants light up a border with dazzling color.

**Geranium 'Fusion™ Flame'** (*Pelargonium peltatum x hortorum*). 'Fusion™ Flame' is a new inter-specific geranium with a unique bright flower color. Early-to-flower and fast growing, it is an excellent choice for combination planters and hanging baskets.

**Gerbera 'Garvinea Linsey®'** (*Gerbera hybrida*). Garvinea® is a new and innovative plant for garden and terrace purposes. This colorful new gerbera flowers from early spring through to autumn and has a high resistance to pests and diseases. A continual bloomer, it produces many 2-inch blooms throughout the season.

**Melampodium 'Casino Light Yellow'** (*Melampodium paludosum*). Very vigorous, knee-high plants produce large numbers of yellow, daisy like flowers that cover the plant. 'Casino Light Yellow' thrives in hot and humid conditions and is ideal for beds and borders alike.

**Morning Glory 'Split Second'** (*Ipomoea purpurea*). 'Split Second' produces stunning flowers with huge, double blooms that have a powderpuff peony form. Absolutely show-stopping, they unfurl in a blend of soft pastel to deep rosy-pink, with no two flowers looking just alike.

**Ornamental Corn 'Field of Dreams'** (*Zea mays*). This new introduction produces variegated green and white with touches of rose, 'Field of Dreams' adds color and structure to large combination pots and accents in the landscape. Plants can reach four to five feet tall and produce ears that are as attractive after the season as the plants were beautiful during the season.

**Pansy 'Freefall'** (*Viola sp.*). Early flowering, 'Freefall' pansies are covered with 1½ inch flowers. 'Freefall' pansies start as low mounding plants and develop into their full spreading or cascading habit as they grow. Ideal for baskets, the 'Freefall' pansies can also be used in color bowls and in the landscape. Requiring fewer plants per square yard in the landscape and fewer plants per pot in a basket, 'Freefall' pansies cover an area with color.

**Pansy 'Plentifall'** (*Viola wittrockiana*). 'Plentifall' pansies spread and trail vigorously to fill and cover cool-

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season hanging baskets. They are the perfect choice as a “spiller” in mixed containers or as groundcover. ‘Plentifall’ pansies have medium-size blooms that come in a variety of colors. This new pansy possess excellent overwintering qualities.

**Petunia ‘Opera Supreme™ Raspberry Ice’ F1** (*Petunia hybrida*). ‘Raspberry Ice’ is a new color to the Opera Supreme™ series which is less day length sensitive than most petunias. It is very floriferous and displays a low, spreading growth habit. ‘Opera Supreme Raspberry Ice’ blooms from the center of the plant out to the tips, and plants have short nodes giving plants an abundance of closely spaced blooms.

**Salvia ‘Summer Jewel Red’** (*Salvia coccinea*). This 2011 AAS Award Winner is early to flower and displays a profuse flowering habit. Additionally, the dwarf and densely branching plants remains a tidy 20 inches tall, even at full maturity. The bright red flower spikes are covered with half-inch blooms that act as a magnet for hummingbirds. As an added bonus, goldfinches frequent the plant for seeds. Even the leaves add beauty with their fine-textured, dark-green color.

**Sunflower ‘Coconut Ice’ F1** (*Helianthus annuus*).

There is something new under the sun, and it’s this extraordinary new white sunflower. Standing 5’-6’ tall the single-headed flowers with coconut brown centers are 4”-8” across. The petals start out a rich creamy vanilla and gradually transition to white.

**Sunflower ‘Frisly’ F1** (*Helianthus annuus*). It’s hard to believe your eyes when you first encounter this

striking sunflower. Standing a bit over 5 feet tall, the plants are loaded with a crowd of 6” flower heads, with their unique ragged narrow-stranded petals with curved inverted secondary petals. It flowers long and prolifically and is stunning in flower arrangements.

**Verbena ‘Costa del Sol™’** (*Verbena hybrida*). Selected for good resistance to powdery mildew ‘Costa del Sol™’ is a new series of verbena that makes a spectacular showing in the garden all summer long. The series is early-flowering and displays a mounding growth habit. Working equally well in pots and baskets it comes in colors of magenta, pink and white.

**Viola ‘Shangri-La Marina’ F1** (*Viola cornuta*). A 2011 AAS Award Winner, this viola is early-flowering and has a mounding growth habit. Colorful and prolific 1¼ inch blooms have light blue petals with a velvety dark blue face that is surrounded by a narrow white border. This vigorous, frost-tolerant biennial provides a solid mat of fall color until covered with snow followed by a great recovery in spring. Grow in full sun as a low edging in the garden or in hanging baskets and pots.

*Credit: National Garden Bureau*

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## **Consider Nearby Plants When Using Sidewalk Ice Melters** continued from page 1

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the soil is to take a soil sample and have it tested for soluble salts. Since the electrical conductivity (EC) of water is proportional to the concentration of salts dissolved in it, the salt content can be estimated by measuring the EC of a water extract of the soil with a simple, electronic conductivity meter. An EC value above 5 or 6 millisiemens per centimeter may indicate a problem for salt-sensitive plants such as roses, spireas and some viburnums.

Gypsum (CaSO<sub>4</sub>) is commonly recommended as a remedy to reduce the impact of salt contamination on plants. While it can help reduce the level of sodium in the soil, gypsum cannot counteract the negative effects of high salts in the soil, no matter how much is applied. Gypsum works by displacing sodium in the soil with calcium, thus allowing sodium to be leached out and helping to improve the structure of high sodium soils. Since it has very low solubility in water, it can be applied at high rates (up to 700 pounds per 1000 ft<sup>2</sup>) to badly contaminated soil without damaging plants. Unlike lime (CaCO<sub>3</sub>), gypsum will not raise the pH of soil, even when applied in large quantities. When reclaiming land from the sea, the Dutch plow in gypsum,

leach first with seawater and then with river water. If low salt water is used for the first leaching, the soil seals up and cannot be leached further.

Next time you are faced with icy sidewalks, think about nearby plants as you develop your battle plan. Use ice melters in moderation, channel salty runoff away from plant roots and, when in doubt, check the electrical conductivity of possibly-affected soil. Be prepared to leach, and don’t expect gypsum to be a quick fix to salt contamination.

*For more information on effects of ice melters on plants see  
<http://www.conservation.state.mo.us/documents/forest/3-124.PDF>*

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# February Gardening Calendar

## Ornamentals

- **Weeks 1-4:** Winter aconite (*Eranthis* sp.) and snowdrops (*Galanthus* sp.) are hardy bulbs for shady gardens that frequently push up through snow to bloom now.
- **Weeks 1-4:** Inspect summer bulbs in storage to be sure none are drying out. Discard any that show signs of rot.
- **Weeks 1-4:** Enjoy the fragrant blooms of the Ozark Witch Hazel flowering in shrub borders or wooded areas on warm sunny days.
- **Weeks 1-4:** Take geranium cuttings now. Keep the foliage dry to avoid leaf and stem diseases.
- **Weeks 2-4:** Sow seeds of larkspur, sweet peas, Shirley poppies and snapdragons where they are to grow outdoors now. To bloom best, these plants must sprout and begin growth well before warm weather arrives.
- **Weeks 2-3:** Seeds of slow-growing annuals like ageratum, verbena, petunias, geraniums, coleus, impatiens and salvia may be started indoors now.
- **Week 4:** Dormant sprays can be applied to ornamental trees and shrubs now. Do this on a mild day while temperatures are above freezing.
- **Week 4:** Start tuberous begonias indoors now. "Non-stop" varieties perform well in this climate.

## Vegetables

- **Weeks 1-4:** Season extending devices such as cold frames, hot beds, cloches and floating row covers will allow for an early start to the growing season.
- **Weeks 1-4:** Start onion seeds indoors now.
- **Weeks 1-4:** Don't work garden soils if they are wet. Squeeze a handful of soil. It should form a ball that will crumble easily. If it is sticky, allow the soil to dry further before tilling or spading.
- **Weeks 2-4:** Sow celery and celeriac seeds indoors now.
- **Weeks 3-4:** Sow seeds of broccoli, cauliflower, Brussels sprouts and cabbage indoors now for transplanting into the garden later this spring.

## Fruits

- **Weeks 1-4:** Check fruit trees for tent caterpillar egg masses. These are laid on twigs in tight clusters that resemble an oblong brown lump of gum wrapped around the stem. Prune off these twigs or destroy the eggs by scratching off the clusters with your thumbnail.
- **Weeks 1-4:** Inspect fruit trees for tent caterpillar egg masses. Eggs appear as dark brown or gray collars that encircle small twigs. Destroy by pruning or scratching off with your thumbnail.
- **Weeks 1-2:** Collect scion wood now for grafting of fruit trees later in spring. Wrap bundled scions with plastic and store them in the refrigerator.
- **Weeks 3-4:** Begin pruning fruit trees. Start with apples and pears first. Peaches and nectarines should be pruned just before they bloom.

## Miscellaneous

- **Weeks 2-4:** Maple sugaring time is here! Freezing nights and mild days make the sap flow.
- **Weeks 2-4:** Begin to fertilize house plants as they show signs of new growth. Plants that are still resting should receive no fertilizers yet.
- **Weeks 3-4:** Tall and leggy house plants such as dracaena, dieffenbachia and rubber plants may be air layered now.

*Gardening Calendar supplied by the staff of the William T. Kemper Center for Home Gardening located at the Missouri Botanical Garden in St. Louis, Missouri. ([www.GardeningHelp.org](http://www.GardeningHelp.org))*