

Types of De-Icers

Mother Nature has finally turned her cold head to us this week in Juab County. Snowstorms and colder temperatures have created slick roads, driveways, and sidewalks. I hope everyone will be careful in these dangerous conditions. Many store and homeowners have begun using deicers to make walkways safer. There are many de-icing compounds, but all are salt derivatives, which are not good additives for soil or landscape plants.

De-icing compounds are successful at melting ice because they react with water to form a brine. This brine solution lowers the freezing point of ice and causes it to melt. In order to create this brine solution salt has to be used, making deicers not good for soils and landscape plants. Drainage issues can allow salts to build up in the water profile, competing with plants for water. The soil can become unsuitable for plant life if the salt concentrations get too high. An example of this would be the areas around the Great Salt Lake where no vegetation grows. De-icing materials can also damage concrete surfaces and add to environmental pollution through runoff. The effectiveness of de-icing materials varies, as does the possible damage to concrete. Below is some information to help you choose and use de-icers.

- Sodium Chloride (Common Rock Salt): The most commonly used de-icing material. It is inexpensive but can be damaging to plants and soils. It will also cause pitting on concrete surfaces.
- Calcium Chloride & Magnesium Chloride: These deicers are common replacements for sodium chloride. They are somewhat less damaging to plants, but are highly corrosive to concrete surfaces. These deicers attract moisture, so they can cause a slippery film, also can cause skin and eye irritations.
- Calcium Magnesium Acetate: This deicer was created to be an environmentally friendlier alternative to sodium chloride. It is not as corrosive to concrete surfaces and much safer for plants. CMA can cost up to 40 times more than sodium chloride, so it can be expensive.
- Fertilizers: Many boast that fertilizer can be a good de-icing material since they are also salts. Fertilizers in the right amount can produce positive plant growth responses, but too much of anything can be a bad thing. Many fertilizers also contain iron, which can stain concrete.
- Potassium Chloride (0-0-60) or potash: A common fertilizer that causes less damage to plants but is highly corrosive to concrete surfaces. In lower temperature, potash is not as effective as other de-icing compounds and is often used in conjunctions with other de-icing compounds.
- Urea (46-0-0), Ammonium Sulfate (21-0-0), and other nitrogen salts: Rarely approved as de-icing material due to the environmental impacts that nitrogen runoff has on leaching into ground water.

While chemical compounds are nice to use and can help keep our sidewalks and driveways clear, it is important to use them sparingly to avoid problems. There is still no chemical to replace a good shovel and a little sweat.