De-icing Compounds

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Will We Have a White Christmas? The Answer Isn't Looking Likely

If you've been dreaming of a white Christmas this year, you may be out of luck. Current forecasts suggest we might not see significant snow until January. But rest assured—the snow and cold will eventually arrive. And when they do, we'll all be dealing with slick roads, driveways, and sidewalks.

When icy conditions strike, many homeowners and business owners turn to deicers to keep their walkways safe. However, it's important to know the impacts these deicing compounds can have, not just on ice, but on the surrounding environment.

The Science (and Impact) Behind Deicing Compounds

Deicers melt ice by reacting with water to form a brine solution. This solution lowers the freezing point of ice, causing it to melt. Unfortunately, most deicers are salt-based, which can harm soils, plants, and even concrete surfaces. Over time, salts from deicing products can accumulate in the soil, making it unsuitable for plant growth. A stark example is the area around the Great Salt Lake, where high salt concentrations prevent vegetation from growing.

Deicers also contribute to environmental pollution through runoff, and some are highly corrosive to concrete. Here's a breakdown of common deicing products and their pros and cons:

- Sodium Chloride (Rock Salt): The most commonly used deicer, it's inexpensive but harmful to plants, soil, and concrete. It also contributes to pitting and surface damage on sidewalks and driveways.
- Calcium Chloride & Magnesium Chloride: Slightly less damaging to plants but highly corrosive to concrete. These compounds can leave a slippery film and may irritate skin and eyes.
- Calcium Magnesium Acetate (CMA): An environmentally friendlier alternative to rock salt. It's safer for plants and less corrosive to concrete but significantly more expensive—up to 40 times the cost of sodium chloride.
- Fertilizers: Some fertilizers are used as deicers because they also contain salts. While they may encourage plant growth in small amounts, overuse can damage plants and stain concrete due to their iron content.
- Potassium Chloride (0-0-60): Less harmful to plants but corrosive to concrete. It's less effective at lower temperatures and is often combined with other deicers.
- Nitrogen Salts (e.g., Urea 46-0-0, Ammonium Sulfate 21-0-0): Rarely used because of the negative impact of nitrogen runoff on groundwater.

Use Deicers Sparingly

While chemical deicers are effective, using them sparingly can prevent damage to landscapes and hardscapes. And remember—there's no substitute for good old-fashioned elbow grease. A sturdy shovel and some effort are still the most eco-friendly ways to keep your walkways safe this winter.