

Sugar and Salt – The Right Recipe for Safe Highways

Sugar is commonplace in the kitchen, but it may be a surprising ingredient when it comes to removing ice and snow from streets and highways.

A growing number of government agencies and snow removal contractors are turning to rock salt or salt brine that has been combined with naturally occurring sugars from renewable sources such as sugar cane and molasses. When these sugars and salt are used together, they can keep traffic moving during winter weather by removing snow and ice more efficiently and at lower temperatures than traditional road salt.



Sugar-treated salt is proving effective at clearing roads of snow and ice. Paul Johnson, operations manager for Wellington County, Ontario, Canada, stands in front of the orange-tinted salt that he says decreases accidents for his county's residents.

Understanding why starts with the fact that salt has to dissolve into a liquid solution before it will melt ice. The colder it gets, the longer it takes for salt to form a liquid. Adding a properly designed liquid sugar solution to road salt causes the solid salt to turn to liquid more quickly, removing ice and snow at significantly lower temperatures than the melting point of untreated salt. For example, one commercially available product, Thawrox Treated Salt, works at temperatures as low as 15 degrees below zero (Fahrenheit). Untreated salt loses some of its ability to melt ice at temperatures below 25 degrees Fahrenheit.

In addition to its obvious public safety advantages in keeping roads clear in colder temperatures, the addition of natural plant sugars to traditional road salt also makes the salt “stickier.” This causes the salt to stay where it has been spread, unlike untreated salt that tends to bounce and scatter during application.

Another benefit of a sugar-salt combination is that it can help reduce the need for sand applications, which sometimes are used to provide additional traction when temperatures are very low. Sand applications can create additional problems, including costly cleanup and negative impacts to air quality. Ultimately, using the sugar-salt blend in cold temperatures clears roads that previously would have needed a sand application, so it performs like disappearing sand with a kick.

Snow removal crews report that sugar-treated salt applications during extremely cold temperatures let them clear more roads in less time, using less product, labor and equipment. The reduced labor costs, combined with the increased safety they can provide residents, make treated salt an economical choice when weather conditions warrant.

Residents might notice the different appearance of sugar-treated salts because they may have an orange or brown tint. The salt is highly visible once it is spread, but the color quickly breaks down and doesn't stain clothing or vehicles. Also, because the sugars are derived from molasses and sugar cane, there is no offensive odor that some other additives might provide, making it a friendlier product for residents.

With more winter weather on the way, road crews are looking for highly efficient deicing products to keep drivers as safe and roads as clear as possible. So don't be surprised if your road salt arrives with a healthy dose of sugar this winter.