# Let's Stop Salt Damage

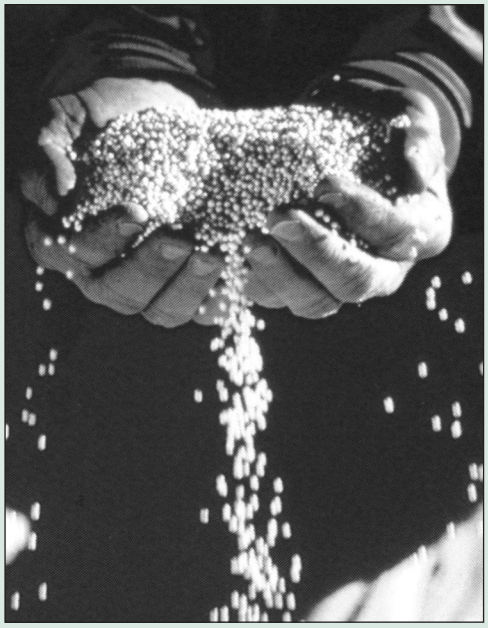
from the TREE CITY USA® BULLETIN

*Too much salt in the environment is just as unhealthy as too much salt in a diet. The annual use of de-icing salt on streets and sidewalks is phenomenal. Before more damage is done and the results compound themselves, it is time for communities and individuals to look closely at alternative actions.*

## CMA: The Environmentally Friendly Alternative

CMA, or calcium magnesium acetate, is a small, pellet-like substance manufactured from dolomitic lime and acetic acid, the main ingredient of household vinegar. It is an effective de-icing material that biodegrades quickly in the soil, and when used in reasonable quantities, it does not contaminate water supplies, harm plants, or cause significant corrosion. The product was introduced commercially in the mid-1980s and is now available across North America. Almost any highway expert will agree — CMA is the answer to the dilemma of public safety vs. the environment.

The problem with this alternative? Cost! While rock salt is abundant and easy to mine, the process necessary to produce acetic acid, or acetate, is expensive. Current research is seeking ways to lower the cost by using waste products such as sewage sludge or cheese whey, and results for at least some price reduction are encouraging. But currently, the purchase price of salt is only $30 to $50 per ton compared to about $900 per ton for CMA. Scientists and economists argue, however, that the real cost of salt is much higher than CMA. Economist Donald Vitaliano of Rensselaer Polytechnic Institute points out that in New York, salt actually costs the public $830 per ton, not even including its impacts on the environment. Other studies have reported salt's true cost at $1,500 per ton.



Cryotech Deicing Technology

| | CMA | ROCK SALT |
|---|---|---|
| **Soil:** | • Biodegradable.<br>• Increases soil permeability. | • May accumulate in soil.<br>• Breaks down soil structure, causing compaction and erosion. |
| **Trees/Shrubs:** | • Little or no adverse effect. | • Can damage foliage, reduce vigor, and result in death. |
| **Groundwater:** | • Little mobility in soil; unlikely to reach groundwater. | • Highly dissolvable and readily reaches groundwater. Increases alkalinity and can affect private and public wells. |
| **Surface Water:** | • Some potential for oxygen depletion at high concentrations in closed systems.<br>• Decomposes rapidly. | • In lakes and ponds, affects density, stratification, and reoxygenation.<br>• Increases runoff of heavy metals, nutrients, and soil through increased erosion. |
| **Corrosion:** | • Twenty to 40 times less damage to concrete.<br>• Can actually slow salt-induced corrosion. | • Degrades concrete. Corrodes reinforcement bars, car bodies, cables, etc. |

Adopted from: "Calcium Magnesium Acetate Deicer" by Carl J. Fritzsche. *Water, Environment & Technology*, January, 1992. Used with permission.

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