

# Testing in Winter Operations

## *Suggested Methods to Evaluate Products*

New winter operations products appear every year. Most suppliers accurately describe product performance and costs. A few, however, do not. Many local road managers want to take advantage of products that perform better and/or cost less. But how do they know which claims are accurate? This article offers suggestions to evaluate products.

### Equipment

NHDOT Highway staff members are an excellent source of reliable information for equipment. They have developed specifications over many years of experience. Their recently revised truck specs include the latest technology. They will continue to update them for just issued regulations on diesel engines.

### Chemicals

Many road managers test new winter operations chemicals. Too often, they also change techniques. The most common change is from post to pretreatment, or to anti-icing, technique. Some concurrently change application rates. When changing a chemical and technique together, the manager cannot be sure which is responsible for any benefits.

It becomes even more difficult when equipment changes. For example, is performance increased by new group speed controls or a new chemical? Finally, testing tends to increase attention on chemical use and its management. Thus, testing itself can influence test results.

New techniques, equipment, and increased attention, can each reduce chemical usage and costs. A new chemical might reduce usage, but managers must know how much it alone reduces cost.

New products might provide better service as well as save money. But they might not. An incorrect conclusion could reduce rather than improve the level of service. The following testing method will isolate the affect of a new chemical.

### Suggested Testing Method

The following procedure will isolate the effect of a chemical. Road managers should use it in their own tests. They can also look for similar methods in reports for new products.

1. Select two plow routes that have similar characteristics: rural/urban, ADT, hills and trees, road width and surface, and elevation.
2. Using exactly the same technique and equipment type, apply the past chemical on one route, and the new chemical on the other. Record for each application:
  - Storm conditions
  - Snow and ice melting effectiveness
  - Quantities used
  - Costs
3. After several storms, reverse the application. Apply the new chemical to the first route and the old chemical to the second. Record the above information. Data collection must be complete and detailed. Timely analysis will reveal information needs.
4. If conclusions differ for steps 2 and 3, managers should repeat them with different operators.

Frequent evaluation might indicate that the new chemical works better in certain conditions. Managers can test it on selected sections as described above.

Managers can also apply this scheme to evaluate new techniques or equipment. If testing a technique, for example, equipment types, chemicals, and operator skills must be the same for each route.

For some, this testing process will seem expensive. It can be more expensive to accept invalid conclusions. Moreover, an invalid test could reduce winter operations effectiveness, and even motorist safety.

One town's test can be useful to others. Please share results of local tests. We can inform others of valid and reliable results.