

EXPLORING EQUIPMENT

Calibrating Spreaders

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Proper selection, care, calibration and use of your spreader can minimize costs and maximize your results. Improper use can reduce product efficiency, cause injury to turf, increase costs and damage your spreader.

Drop (gravity) and rotary (centrifugal) spreaders are available for applying granules to turf. Drop spreaders are generally more precise and deliver a better pattern. Since the granules drop straight down, there is less chemical drift and better control, with less chance of applying pesticide to non-target areas.

However, some drop spreaders will not handle large granules and ground clearance in wet turf can be a problem. Since the edge of a drop spreader pattern is sharp, any steering error will cause strips to be missed or doubled. Drop spreaders usually require more effort to push. But wet foliage application is more effective with drop spreaders, because the particle velocity imparted by a rotary can make some of the particles bounce off the foliage.

Rotary spreaders cover a wide swath, covering a given area faster. However, they are less precise than drop spreaders in terms of uniformity and distribution. Because of the pattern feathering, steering errors are less critical. Since they do not have a full-width agitator to turn as a drop spreader does, they require less effort to push.

Rotary spreaders normally handle large particles well, but drift is a problem with fine particles when wind is present. Ground clearance in turf is usually no problem for a rotary. Since rotary patterns vary, more calibration time is needed.

A major advantage of rotary spreaders is that they are usually constructed with plastics and fiberglass. Therefore, they are more resistant to corrosion. Rotary spreaders are also more durable in commercial use, and less

likely to be knocked out of calibration than some drop spreaders.

Maximizing Your Efficiency

Experienced turf care professionals are familiar with proper spreader use, but new operators should review basic operating procedures. Begin by reading the operator's manual or instruction booklet provided by the manufacturer and follow the manufacturer's instructions. The second obvious recommendation is to follow the instructions on the product label. Modify rate and pattern settings if necessary for specific conditions.

"Header strips" at each end of the turf area provide a place to turn around and realign the spreader, and serve to make the border of the turf area more uniform. Get the spreader moving at a rated speed (normally 3 miles per hour) on the header strip or on a driveway, sidewalks, etc. and then open the spreader as you cross into the turf area to be treated. At the other end, the spreader should be closed when moving into the header strip and turning.

Your spreader should be closed when stopped to prevent excessive product from being applied to a small area. Likewise, the end turns should be made with the spreader closed, since the application pattern would be very irregular while turning.

Occasionally, it might be impossible to obtain a completely acceptable pattern with a rotary spreader and striping of turf can result. A common solution to this problem is to reduce the setting to a half rate and go over the lawn twice at right angles. This is not a valid solution to the problem. This approach will not average out the pattern as is usually believed but will merely change stripes into a diagonal checkerboard. If pattern problems cannot be corrected, the proper procedure is to reduce the setting to a half rate and reduce the swath width in half, but still go back and forth in parallel swaths.

Normally, a spreader should not be operated backwards. It is obvious with most rotary spreaders that pulling the spreader backwards delivers an unacceptable pattern. There also is a problem with reversing the direction of a drop spreader. Most drop spreaders will deliver granules at a considerably different rate at the same setting if reversed. In some cases, such as in loose soil with new seedings, the spreader might be easier to pull than push. If you want to operate a spreader backwards, a different setting must be determined.

Some rotary spreaders are provided with a means of cutting off one side of the pattern. This feature is desirable when edging along driveways, sidewalks, etc.

Finally, it is usually best to set and fill the spreader on a paved surface rather than on the lawn. If a spill occurs, a driveway is much easier to sweep clean than turf.

Getting Precise

Because of many variables, it is highly recommended that all spreaders, drop or rotary, be calibrated for proper delivery rate with the specific operator and product to be used. Many product suppliers furnish recommended settings and swath widths. These are as precise as the manufacturer can make them, but the factors just mentioned can add up to a significant rate variation in some cases. Label setting should be used only as the initial setting for verification runs by the operator prior to large scale use.

It is suggested that calibration be checked and corrected according to the manufacturer's direction *at least once a week* when the spreader is in regular use, and more frequently if the spreader has suffered any abuse or mechanical damage.

The easiest way for an operator to check the delivery rate of a spreader is to spread a weighed amount of product on a measured area, preferably at least 1,000 square feet for a drop spreader and

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5,000 for a rotary, and then weigh the product again to determine the rate actually delivered.

To avoid contamination of a turf area for initial calibration, the spreader can be supported above the floor and the drive wheel spun at the correct speed with the spreader remaining stationary. The granules can be collected and reused with this technique. Another method of rate verification that can be used with drop spreaders is to hang a catch pan under the spreader and push the spreader a measured distance at the proper speed. This method can be precise, but it is essential that the pan be hung on the spreader so that there is no interference with the shut-off bar or rate-control linkage.

With rotary spreaders, it is also necessary to check and correct the distribution pattern. Although the product label usually gives a recommended setting

and width, a custom applicator is foolish not to verify the setting and width before treating a large number of lawns. A quick pattern check can be made by operating the spreader over a paved area and observing the pattern. However, this method is not highly accurate since even major distribution errors might not be visible because of particle bounce and scatter.

A preferred method is to lay out a row of shallow cardboard boxes on a line perpendicular to the direction of travel. Boxes 1- to 2-inches high, with an area of about 1 square foot, spaced on 1-foot centers are good for commercial push-type rotaries. The row of boxes should cover one and one-half to two times the anticipated swath width.

To conduct the test, pour some product into the spreader and set it at the label setting for rate and pattern. Make three passes over the boxes, operating in the same direction each time. The material caught in each box can be

weighed and a distribution pattern plotted. A simpler procedure is to pour the material from each box into a test tube, vial or small bottle. With the bottles standing side by side in order, a plot of the pattern is visible.

This method can be used to detect and correct skewing and to determine swath width. The effective swath width is twice the distance out to the point where the rate is one-half the average rate at the center. For example, if the center three to four bottles have material 2-inches deep and the bottles from the 6-foot positions (6 feet left of the spreader centerline and 6 feet right of the spreader centerline) have material 1-inch deep, the effective swath width is 12 feet. □

Editor's note: The above article was adapted from "The Calibration of Commercial Pesticide Application Equipment for Ornamentals and Turfgrass," a manual produced by the Agricultural Engineering Department at the University of Illinois in Urbana.

PRESIDENT'S MESSAGE

By Greg Petry



The last time we communicated I wrote about commitment. I wrote about people who share a vision, people who contribute to the cause of promoting better and safer sports turf — and then some.



I am pleased to highlight that we will have a great opportunity to share our vision of the sports turf industry at the STMA Conference and Show scheduled for February 4-8 in Bradenton, FL. Mike Schiller of the Schaumburg Park District, Henry Indyk of Turfcon, and Eugene Mayer of O.M. Scott have assembled the program outline and are currently finalizing topics and speakers.

If you have an idea for a topic or speaker, please pass it along. We welcome your input. Bret Kelsey, our executive director, has visited the site. (Again, you have to mention commitment, because Bret went down to Florida on a golf outing with his friends and spent one of his days scoping out the conference site.)

Bret has worked out most of the on-site logistics with the committee.

I think we are ready to have a great conference. Are you ready? Here's some thoughts to keep in mind:

1. Budget to attend the conference and show.

2. Save up to bring your family or friends — we have some great activities planned.

3. Schedule ahead so you have the time to attend.

Justify attending:

1. Exposure to latest techniques, products, technology and trends.

2. Ability to gain information and advice from experts in a short period of time.

3. Ability to exchange information with fellow professionals sharing similar concerns.

4. Commercial members will be able to return with potential customers, while gaining a realistic perspective on interests and issues.

5. Continuing education increases knowledge, skills, and productivity.

Also at the conference, we will be presenting our 1994 awards. I know

that each and every one of you is extremely busy now that we are in the height of the season. So take some time to document your success. Carry a camera with you to photograph the great job you're doing, and plan on submitting an award application. Awards will be given for the best baseball, soccer, and football fields.

Bob Milano, from the University of California at Davis, is our awards committee chairman. He will publicizing the awards program soon. It's rare that you have an opportunity to boast your success. Please plan to do so — you may find out how good you really are!

How well you perform is truly related to how well you have been trained. I once heard it said that 90 percent of all jobs in the 1990s will require at least a high school education. Job requirements keep changing and therefore, job training and continuing your education are important. Some organizations recognize that training and development are keys to growth and success. The primary purpose of training is to make sure abilities, interest, and personal needs are matched between the organization and the individual employee.

I hope you take advantage of the 1994 STMA Conference and its training opportunities. You will benefit, and so will your organization.