

Applicator's Log

Sprayer Calibration

By Dr. J.M. Vargas, Jr.

Sprayer calibration is really quite simple, and yet it is one of the most difficult subjects to teach. The difficulty can only be related to the fact that math is involved, although the calculations are quite easy.

Calibrating a sprayer isn't just something that is nice to do — it is a necessity! I know of no other way to accurately apply the proper amount of fungicide.

Mysterious Pest

It reminds me of when I was called to a golf course to look at a disease problem that "no" fungicide was controlling. When I arrived, little turf was left on the four affected greens — mainly because the superintendent had applied four potent fungicides to the greens, at a concentration of 8 ozs. per 1,000 square feet, in a little over a week.

As nearly as I could tell, the disease

in question was brown patch. I asked to see the spray schedule record, and sure enough, the fungicides used should have controlled brown patch.

He said, "It only occurred on four greens." I suggested something could be wrong with his sprayer calibration, although it didn't seem likely at the time, since only four greens were affected.

At this, I noticed a strange look on his face, and I said, "You do calibrate your sprayer, don't you?"

He replied, "Of course not, nobody does." He was sure that misapplication couldn't be a problem because two of the affected greens were on the front nine and two of the affected greens were on the back nine.

So I asked him in what order they were sprayed. He told me that he sent his men out to the far end of the course on the front nine, and sprayed the back nine in the same way.

The last two greens on both nines were the ones with the problems, and I suggested that this might be because the sprayer wasn't calibrated, and the people spraying had to hurry over the last two greens on each nine when they discovered that they were running out of liquid in the spray tank.

Needless to say, my suggestion fell on deaf ears. The next year he doubled his fungicide budget, but didn't calibrate his sprayer. His system didn't work any better than it had before, and fortunately, for the sake of the profession, he is no longer in it.

The superintendent who followed him believed in calibration, and for the first time in five years, grass was maintained on those four greens. The membership believed that the new superintendent could walk on water, because he kept grass on those greens all season long. It really wasn't a matter of his walking on water, just calcu-

Our New Pattern Will Change The Way You Top Dress.



Top dress a field in less than 2 hours



Low PSI ground driven
6 wheel design



Eliminates shovel
loading



Precise on/off
application

Turfco's patented chevron belt handles all types of top dressing mixtures from sand to compost, wet or dry. The belt's chevron ridges, combined with ground drive, make sure that material flows consistently and spreads evenly. The top dresser assists in leveling out depressions and providing good drainage. Because there are no hydraulics the top dresser can be hooked up to any tractor or turf truck. There's less maintenance, lower costs, and no oil leaks on your field. Top dressers since 1961. Call 612-785-1000.



Turfco Manufacturing Inc., 1655 101st Avenue Northeast
Minneapolis, MN 55449-4420, (612) 785-1000 Fax (612) 785-0556

lating how much of it was coming out of his sprayer.

Application Rate

There are four factors that affect application rate: ground speed, pressure, type or size of nozzles, and the density of liquid. You need to develop a system wherein the first three remain constant and only the last one varies.

Ground Speed. Select a speed that can be used for all areas. If you are walking while treating an area, learn to walk at a comfortable, constant speed. For most people, this is their normal walking speed.

Pressure. Spray with the lowest possible pressure that gives a full pattern to ensure proper overlap between nozzles.

The trouble with people who own high-pressure sprayers is the same as the problem with people who own high-powered cars — since they have all that power they feel a need to use it. Save the higher pressures for spraying tall trees.

The higher the pressure, the smaller the droplet, and the smaller the droplet, the greater the drift problem.

If you aren't concerned about your neighbor (and you should be), look at it from a practical viewpoint — what drifts away isn't giving protection where it is needed.

Types of Nozzles. Flat fan nozzles are still the most widely used. You should select one that you can use for all types of spraying.

The nozzles should be changed yearly, because wettable powder formulations are abrasive and will enlarge or misshape the opening.

Density of Liquid. There is obviously very little that can be done to control liquid density. It will vary from one chemical to another and with concentration of fungicide.

The more dense the liquid in the spray tank, the slower it will flow through the nozzles. For precise application, each chemical and rate should be checked individually.

Calibration

The purpose of calibration is to determine how much liquid your sprayer is putting out per 1,000 square feet. The initial calibration usually is done with water. It is assumed that

you have already selected the ground speed, the pressure, and the type of nozzles you want.

Fill the tank with water, mark off 1,000 square feet, and determine how much water it takes to cover the area. (This can be determined by refilling the tank with a known quantity of water.)

Another method of determining sprayer output is to collect the liquid from one nozzle while covering the 1,000 square feet and then multiply that volume of liquid by the number of nozzles.

For either method, the process should be repeated three or four times, or until consistent output is obtained.

If the rate is not satisfactory, the pressure can be raised or lowered, the ground speed changed or the nozzles replaced with ones that have a larger or smaller opening.

The above is reprinted with permission from the second edition of Management of Turfgrass Diseases, pages 151-155, by J.M. Vargas, Jr. (Lewis Publishers, an imprint of CRC Press, Boca Raton, FL, ©1994). □



Residential

The Most Shade Tolerant Wear Resistant, Cool Season Turfgrass on the Market Today!

SUPRANOVA

SUPINA BLUEGRASS

- Exceptional Shade Tolerance
- The More Wear, The Better It Performs
- Low Growing • Requires Less Mowing
- Very Aggressive • Quick Regeneration
- Outstanding Disease Resistance

IDEAL FOR

- Residential • Shade Areas
- Athletic Fields • Golf Courses
- Sod Growers

Exclusive Distributors of SUPRANOVA SUPINA BLUEGRASS in North America

P.O. Box 1051, Lake Oswego, OR 97034
TEL: (503)636-2600 FAX: (503)636-7020



Athletic Fields



Sod Growers



Golf Courses