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much at one time. What is "excessive" depends on the soil type and condition, the turfgrass species and the climate. Any nitrogen that has been converted to nitrate but has not been absorbed by the plants is prone to leaching. "Spoon feeding" the turf with low rates of nitrogen on a more frequent basis (0.05 to 0.20 lbs. N/1000 sq.ft. per week) helps keep nitrogen levels more uniform throughout the season and improves their efficiency of use.

The placement of any nitrogen fertilizer on impervious surfaces increases the chance of nitrogen entering surface or subsurface water resources. Therefore, avoid applying granules or spray directly onto sidewalks, roads and driveways. You may need to

Choose an appropriate granule size for turf density to help granules move into the canopy.

use a drop spreader on turf areas next to these surfaces or remove any granules using a broom or a blower. Also, avoid applying fertilizer directly into any surface water such as streams, lakes or temporarily ponded water.

Foliar application of soluble nitrogen fertilizers may reduce movement of nitrogen in runoff and leachate compared to granular application. However, volatilization losses will be higher when using a sprayer or fertigation system. Soluble nitrogen granules, like uncoated urea, which remain on top of the turf canopy after application, have a greater risk of moving offsite in runoff compared to granules that have moved into the turf canopy by gravity or water.

Choosing an appropriate granule size for the canopy density will help granules move into the canopy. For example, on golf greens, smaller granules should be used so they can more easily move down into the highly dense canopy. Large or small granules can be used on lawn or athletic fields because the turf on those areas has a canopy that is less dense and more open than a golf green.

Although turfgrasses naturally do a great job of minimizing offsite movement of nitrate and other forms of nitrogen, there are certain management practices that can be used to even further reduce the chance for movement. The suggested practices are inexpensive to implement and should not decrease turf quality. Actually, some may even improve turf quality.

Educating yourself, fellow turf managers and your customers on this issue should give everyone a little more peace of mind when it comes to nitrate movement from turfgrass. **LM**

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Events

JANUARY

20 Landscape Contractors, Turfgrass Managers & Grounds Maintenance Conference with Trade Show

Jamil Shrine Temple, Columbia, SC. Call SC Landscape & Turfgrass Association 803/772-9380

25-27: Central Environmental Nursery Trade Show (CENTS)

Greater Columbus Convention Center, OH. Call 800/825-5062, fax 888/665-2329

26-31 National Arborist Association Winter Management Conference

Weston Caesar Park, Cancun, Mexico. Contact Carol Crossland 800/733-2622, fax 603/672-2613, www.natlarb.com

27-29 Midwest Turf Expo

Indiana Convention Center, Indianapolis. Contact Bev Bratton 765/494-8039, fax 765/496-2926, www.purdue.edu

28-30 New England Grows!

Hynes Convention Center, Boston. Call 508/653-3009, fax 508/653-4112.

28-30 Gulf States Horticultural Expo

Mobile Convention Center, Mobile, AL. Call Linda VanDyke 334/502-7777.

FEBRUARY

1-26 University of Guelph, Annual Turf Managers' Course

Holiday Inn, Guelph,

Ontario. Call 519/767-5000, fax 519/767-1114.

2 OSU Extension

Annual School Tom's Country Place, Avon, OH. Contact Charles Behnke 440/322-0127

3-5 Turfgrass Producers International Midwinter Conference & Expo

The Hyatt Regency Tampa, FL. Call 800/405-8873 or 847/705-9898

4-6 PLCAA Management Conference

Embassy Suites, Orlando, FL. Contact Heath Moore 800/458-3466, fax 770/578-6071, www.plcaa.org

4-7 American Nursery & Landscape Association Management Clinic

Galt House, Louisville, KY. Call 202/789-2900, fax 202/789-1893, www.anla.org

7-10 Fertilizer Institute annual meeting

Wyndham Annatole Hotel, Dallas. Contact Linda McAbbee 202/675-8250, fax 202/544-8123, www.tfi.org

10 JOB FAIR (Stockbridge School of Agriculture & the Univ. of Mass.)

Campus Center Auditorium, Amherst, MA. Call 413/545-2222.

12-14 GCSAA International Conference & Show

Orange County Convention Center, Orlando, FL. Call 800/472-7878, www.gcsaa.org