

Preventing nitrate leaching

■ Nitrate losses on many fertilized grassy areas on many soil types are no greater than those on unfertilized areas, according to research from Cornell University.

"There are some cases, however," says Cornell's Dr. Norman W. Hummel Jr., "where the potential for nitrate leaching does exist."

Conditions that promote leaching, he says, are:

- sandy soils;
- too much water from irrigation or rainfall;
- applying more fertilizer than necessary; and
- using water soluble (quick release) fertilizers in the late fall.

Hummel, speaking at a Virginia Turfgrass Conference convention, noted three actions that turf managers can take to prevent nitrate leaching. They are:

1) Use slow-release fertilizers. "Research has shown that leaching of nitrates on even sandy soils can be prevented," Hummel says. "Most slow-release fertilizers release nitrogen at a rate similar to plant needs. Therefore, very little nitrogen is left to be leached out of the rootzone."

NITROGEN REQUIREMENTS PER 1,000 SQ. FT.

Pounds nitrogen**	Urea 46-0-0	10-5-5	16-8-8	25-3-3	20-3-7 20-5-10	SCU 36% N	Natural org. 6% N	Ureaform 38% N	IBDU 31% N
1/2	1	5	3	2	2 1/2	*	*	*	*
1	2	10	6 1/2	4	5	3	8 1/2	*	3
1 1/2	3	15	9 1/2	6	7 1/2	4	17	4	5
2	*	20	13	8	10	5 1/2	33 1/2	5 1/2	6 1/2
2 1/2	*	25	15 1/2	10	12 1/2	7	42	6 1/2	8
3	*	30	19	12	15	8	50	8	10

* Not recommended at these rates. ** Recommended Source: Cornell University

Hummel also suggests avoiding fertilizers that contain a large percentage of urea, ammonium nitrate, ammonium sulfate or ammoniated phosphates, especially if used in the late fall.

2) Don't over-fertilize. "Apply no more than one pound of actual nitrogen per 1000 sq. ft. at one time, unless a 100 percent slow-release material is used."

The table above lists fertilizer rates to deliver this nitrogen rate using different

analysis fertilizers. Please, however, reduce these rates by 1/3 if clippings are returned after mowing. "Also, older lawns will require less nitrogen due to a build-up of soil organic nitrogen that occurs through time," Hummel notes.

3) Don't over-water. Apply only enough water to moisten the rootzone (about 3/4 of an inch of water on dry soil). "Too much water will drain through the profile, carrying nitrates with it," Hummel concludes.

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