

STOP 10

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Herbicide Application: Spray Adjuvants and Drift.

The problems associated with wind drift of herbicide sprays are readily apparent to anyone who has applied herbicides in other than granular formulations. The 2,4-D, silvex, mecoprop and dicamba herbicides, used for broadleaved weed control in turf can cause extensive injury to adjacent broadleaved crops and ornamental vegetation. Herbicide recommendations invariably caution against spraying on windy days when the drift potential is high. Various precautions such as (a) employing a large spray volume (40 gallons per acre or greater) through proper nozzle selection, (b) low operating pressures (30 psi maximum) help to reduce drift by producing relatively large spray droplets.

In addition, various commercial materials such as foaming agents and specialized nozzles are available as aids in reducing spray drift. The turf manager is advised to use caution in purchasing agents to reduce spray drift unless their effectiveness can be satisfactorily demonstrated.

STOP 11

R. N. Carrow and P. E. Rieke

Nitrogen-Cutting Height Interrelationships on Several Turfgrasses.

These studies were initiated in 1967. Data in Tables 11, 12 and 13 are averages for the 1969-70 growing seasons. In April, 1971, two heights of mowing, 0.75 and 1.5 inches were begun. Note the differential response to the mowing heights.

Visual turfgrass quality ratings for Pennlawn red and Wintergreen chewings fescues are compared in Table 11. Wintergreen appears to favor lower nitrogen rates. In addition, late fall applications of nitrogen should be avoided on Wintergreen.

Nitrogen rates on four Kentucky bluegrasses are compared in Table 12. Delta and Kenblue Kentucky bluegrass quality ratings do not improve above 6 pounds nitrogen per 1000 square feet per year while Windsor and Newport show higher quality up to 8 pounds. Note the effect of higher nitrogen on the increase in a broader-leaved type of bluegrass in the Delta plots.

Seeded and sodded Merion Kentucky bluegrasses are compared in Table 13. The sodded Merion apparently needs slightly less nitrogen than seeded Merion to achieve the same level of turfgrass quality.

TABLE 11. AVERAGE VISUAL TURFGRASS QUALITY RATINGS FOR TWO RED FESCUES UNDER SEVERAL NITROGEN TREATMENTS, 1968-70. AVERAGES FOR 3 REPLICATIONS (1= best on 1-10 scale).

Nitrogen Treatment (lbs N/1,000 sq. ft./Yr.)		Time of Application	Pennlawn	Wintergreen
0		----	6.1	6.7
1		monthly	4.8	4.5
1.5		monthly	3.9	3.9
2		monthly	3.2	3.3
2.5		monthly	2.5	2.6
3		monthly	2.2	2.3
4		monthly	1.9	2.3
6		monthly	1.4	2.1
2		April	3.7	3.7
2		August	3.9	4.4
2		April, August	3.5	3.2

TABLE 12. AVERAGE VISUAL TURFGRASS QUALITY RATINGS FOR FOUR KENTUCKY BLUEGRASSES UNDER 4 NITROGEN LEVELS, 1968-70. AVERAGES FOR 3 REPLICATIONS. (1=best on 1-10 scale).

Nitrogen Treatment (lbs N/1,000 sq. ft./Yr)	Variety			
	Delta	Kenblue	Windsor	Newport
2	5.0	5.0	5.0	5.4
4	4.0	3.7	3.5	4.1
6	3.4	3.0	2.4	2.7
8	3.4	3.0	1.8	2.2

TABLE 13. AVERAGE VISUAL TURFGRASS QUALITY RATINGS FOR SEEDED VS SODDED MERION KENTUCKY BLUEGRASS, 1968-70. AVERAGES FOR 3 REPLICATIONS. (1=best on a 1-10 scale).

Nitrogen Treatment (lbs N/1,000 sq. ft./Yr)	Establishment Method	
	Seeded	Sodded
0	7.8	6.2
2	5.2	4.3
4	3.8	3.1
6	2.7	2.1
8	2.0	1.7
10	1.8	1.6
12	1.6	1.4
14	1.6	1.3

STOP 12

P. E. Rieke

Nitrogen Movement and Turfgrass Fertilization.

Because of the present concern for nitrate pollution of ground water sources, the existing nitrogen fertility turfgrass plots at both East Lansing and Traverse City were sampled during 1970. The objective was to observe the movement of nitrates in the soil profile from selected nitrogen treatments.

The plots were sampled approximately every 2 weeks at depths of 0-6, 6-12, 12-18, and 18-24 inch depths. The treatments studied at East Lansing are shown in Table 14. Similar treatments were sampled at Traverse City on a Kalkaska sand.

Nitrate data for the East Lansing site are given in Table 15. Although the treatments utilized in this study are not those that would normally be recommended because the nitrogen was applied in the spring (except for treatment 28), some suggestions can be offered to keep the potential for nitrate leaching under turf at a minimum:

1. For water soluble nitrogen carriers, use a minimum of 4 to 6 applications per year when applying 6 pounds nitrogen or more per 1000 square feet annually.