

Higher nitrogen rates resulted in an increase in the incidence of stripe smut on Merion Kentucky bluegrass in June at Traverse City as suggested in Table 2. Plots receiving the highest nitrogen rate (12 pounds nitrogen annually, divided into 6 monthly applications) were especially susceptible. When extremely high nitrogen rates were applied in late April the incidence of stripe smut was also increased. Thus timing of nitrogen application is also a factor. The disease rating was lower on plots receiving nitrogen as sewage sludge (Milorganite) and ureaformaldehyde (38%) compared to ammonium nitrate. This is a further indication of the slower rate of nitrogen release from these organic nitrogen carriers compared to the soluble ammonium nitrate. Although these nitrogen rates are excessively high, these data do point out the importance of modest nitrogen fertilization in the spring of the year. Modest spring nitrogen rates are also suggested for reducing a susceptibility of Kentucky bluegrasses to Fusarium blight.

Table 2. Incidence of stripe smut on Merion Kentucky bluegrass at Traverse City in June as affected by nitrogen treatment.

Treatment			Stripe Smut Incidence
N rate lbs/1000 sq ft	Carrier	Time of application	(1=none; 10=severe)
0	---	---	0.5
4	ammonium nitrate	monthly	1.5
8	ammonium nitrate	monthly	3.5
12	ammonium nitrate	monthly	8.5
8	ammonium nitrate	Apr	4.5
8	ammonium nitrate	Apr, June, Aug	2.0
8	ammonium nitrate	Apr, Aug	2.5
8	Milorganite	Apr	3.0
8	ureaformaldehyde	Apr	2.5

Higher nitrogen rates resulted in an increase of Poa annua in a mixed Merion Kentucky bluegrass Poa annua turf (see Table 3). Plugs of Poa annua were planted into the Merion sod in 1971 and treatments initiated in 1972. The turf is mowed at 3/4 inch. The Poa annua has steadily increased in the turf since the initiation of the treatments. Higher rates of nitrogen in the spring have also tended to encourage the Poa annua encroachment rate into the turf. In this study the use of sewage sludge has also resulted in an increase of the Poa annua encroachment rate. Similar increases in Poa annua have been observed at Traverse City in a Pennlawn red fescue turf where Poa annua has encroached naturally in the irrigated turf.