

REDUCED MOWING FREQUENCY FOR SOD PRODUCTION WITH SELECTED KENTUCKY BLUEGRASSES

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The potential for infrequent mowing as a part of the management program in sod production has been introduced and discussed at earlier conferences. Previous research was limited to studies with Merion or a blend of Merion with other Kentucky bluegrasses. Information on other cultivars is needed.

Four of the Kentucky bluegrasses which are often used for sod in Michigan (Adelphi, Glade, Merion, and Nugget) and a blend of these four grasses were seeded at the M.S.U. Muck Experimental Farm in August, 1975. All plots received 20 pounds nitrogen per acre in October, 1975. In addition, all plots were mowed uniformly with clippings returned in May, 1976. The mowing frequency and nitrogen rate treatments were initiated in early June, 1976. When plots were mowed all clippings were removed with a small sample returned for yield determination. Nitrogen treatments were applied in early June, July, August, and September. All treatments were replicated 3 times.

Sod strength measurements by the Michigan sod strength technique are given in Tables 1 and 2 for September and November, 1976, respectively. The sod strengths in September were quite low with the higher nitrogen rate (60 pounds N/acre/month) and the less frequent mowing resulting in weaker sod. In November the results indicated that Glade and Adelphi were less adapted to the infrequent mowing than Merion and Nugget. Reducing the mowing frequency to 4 week intervals at either nitrogen rate or up to 8 week intervals at the 30 pound nitrogen rate per acre per month had no appreciable effect on sod strengths of any of the cultivars when compared to weekly mowing. The 4 week mowing interval appears to be an alternative for sod growers for at least part of the period until the sod needs to be brought to harvest quality.

Table 3 shows the dry weight clipping yields for the study. There were small differences among the treatment effects. This was in contrast to previous studies in which the higher nitrogen rate and the less frequent mowings resulted in greater yield increases than observed in this experiment. The two mowings in May which were returned had an influence on reducing the annual yields.

The infrequent mowing leaves the remaining sod quite yellow in color after mowing as would be expected. A color rating was taken in October, 1976 one week after the 12-week mowing treatment was removed. Based on this color rating Adelphi and Merion were better adapted to the infrequent mowing than Glade and Nugget. In previous years there had been some thinning caused by disease on the 8 and 12-week mowing interval plots after the clippings were removed. This was not evident in 1976.

Although broadleaf weeds can be chemically controlled one of the significant disadvantages of infrequent mowings is that the weedy annual grasses which would normally disappear upon regular mowing tend to persist. A visual estimate of the relative density of weedy annual grasses was taken in October, 1976. When mowed at the 8 and 12 week intervals Glade and Nugget did not compete as well against the annual grasses as did Merion, Adelphi, and the blend. There was little difference among any of the cultivars in the amount of weedy grasses present when mowed at weekly or biweekly intervals.

Reduced mowing frequency for sod production appears to be an alternative for the sod producer if all the factors have been considered. Certainly, less frequent

mowing would be a means of reducing energy costs and the clippings could provide an additional product with potential for monetary value. But the need for developing a market (or other use) for the clippings, the specialized equipment required to harvest and handle the clippings, the necessity to remove the clippings from the sod soon after mowing, and the time required to bring the sod into harvest quality are practical problems which must be solved. In addition, there are differences in the way the various Kentucky bluegrass cultivars respond to the infrequent mowings. Whereas the forage types of Kentucky bluegrasses have likely been selected on the basis of yield and regrowth after mowing the turfgrass cultivars have not been evaluated on this basis. Selection of a cultivar or a blend of cultivars which is well adapted to the infrequent mowing is an important management decision if reduced mowing is to be adopted.

Table 1. EFFECT OF MOWING FREQUENCY AND N RATE ON KENTUCKY BLUEGRASS SOD STRENGTHS-September, 1976.

MOWING FREQUENCY	N RATE lbs/A/month	GLADE	lbs to tear sod			
			MERION	ADELPHI	NUGGET	BLEND
WEEKLY	30	45	45	37	41	34
	60	42	35	35	42	44
2 WEEKS	30	37	36	33	37	40
	60	39	31	33	31	39
4 WEEKS	30	40	39	34	37	40
	60	35	29	27	33	36
8 WEEKS	30	34	29	42	26	44
	60	23	23	25	22	23
AVERAGE		37	33	33	34	38

Table 2. EFFECT OF MOWING FREQUENCY AND N RATE ON KENTUCKY BLUEGRASS SOD STRENGTHS-November, 1976.

MOWING FREQUENCY	N RATE lbs/A/month	GLADE	lbs to tear sod			
			MERION	ADELPHI	NUGGET	BLEND
WEEKLY	30	78	78	65	77	74
	60	86	64	61	76	85
2 WEEKS	30	75	62	69	79	75
	60	77	75	62	78	79
4 WEEKS	30	82	76	66	77	74
	60	76	73	62	85	78
8 WEEKS	30	70	74	60	90	71
	60	56	75	53	70	62
12 WEEKS	30	47	73	66	69	46
AVERAGE		72	72	63	78	72

Table 3. EFFECT OF MOWING FREQUENCY AND N RATE ON KENTUCKY BLUEGRASS SOD TOTAL CLIPPING YIELDS - 1976

MOWING FREQUENCY	N RATE lbs/A/month	GLADE	Tons dry yield per acre			
			MERION	ADELPHI	NUGGET	BLEND
WEEKLY	30	1.3	1.1	1.4	1.4	1.1
	60	1.7	1.4	1.6	1.6	1.2
2 WEEKS	30	1.7	1.4	1.6	1.6	1.4
	60	1.8	1.8	1.8	1.8	1.7
4 WEEKS	30	1.6	1.5	1.6	1.7	1.4
	60	1.9	1.9	2.1	1.9	1.9
8 WEEKS	30	1.6	1.7	1.7	1.7	1.6
	60	1.7	1.9	1.7	1.7	1.8
12 WEEKS	30	1.5	1.7	1.6	1.8	1.9
AVERAGE		1.6	1.6	1.7	1.7	1.6

Table 4. EFFECT OF MOWING FREQUENCY AND N RATE ON RELATIVE COLOR OF KENTUCKY BLUEGRASS SOD - October, 1976.

MOWING FREQUENCY	N RATE		GLADE	MERION	ADELPHI	NUGGET	BLEND
	lbs/A/month						
WEEKLY	30		3.2*	3.5	3.3	4.2	3.3
	60		3.0	3.0	1.7	3.3	3.7
2 WEEKS	30		3.3	3.3	3.2	3.5	3.3
	60		3.0	3.2	2.7	3.2	2.8
4 WEEKS	30		3.5	3.3	2.8	3.5	3.3
	60		3.0	4.0	3.2	3.3	3.7
8 WEEKS	30		1.5	2.2	2.0	2.3	2.0
	60		3.8	1.5	1.2	3.3	1.5
12 WEEKS	30		8.2	6.0	7.0	8.2	8.3
AVERAGE			3.4	3.3	3.0	3.9	3.6

* 1 = dark green; 9 = yellow.

Table 5. EFFECT OF MOWING FREQUENCY AND N RATE ON RELATIVE WEEDY GRASS DENSITY IN KENTUCKY BLUEGRASS SOD - October, 1976.

MOWING FREQUENCY	N RATE		GLADE	MERION	ADELPHI	NUGGET	BLEND
	lbs/A/month						
WEEKLY	30		1.0*	1.3	1.7	1.7	1.3
	60		1.5	1.2	1.2	1.5	1.7
2 WEEKS	30		1.7	1.3	1.8	1.8	1.5
	60		1.5	1.2	1.2	1.7	1.2
4 WEEKS	30		3.2	3.8	2.7	5.2	3.2
	60		3.3	1.7	2.3	1.7	1.5
8 WEEKS	30		6.3	3.8	2.8	4.8	3.3
	60		7.3	2.7	3.8	6.0	4.0
12 WEEKS	30		8.5	4.7	4.8	7.7	4.2
AVERAGE			3.8	2.4	2.5	3.6	2.4

* 1 = no weeds; 9 = high density.