

## Effect of topdressing program and nitrogen fertilization on Penncross creeping bentgrass turf

This study, with the treatments outlined in Table 12, was initiated in 1982. Simpmeter readings were taken in November, 1983 with small differences recorded. The thickness of the combined thatch and topdressing layer was greater for topdressed plots than where no topdressing was applied as would be expected. This layer had a higher percent of organic matter in the plots receiving no topdressing than when topdressing was applied. The plots receiving sand topdressing on infrequent intervals developed alternate layers of sand and thatch, which will surely lead to management difficulties at some time in the future. Golf course superintendents are strongly urged to utilize light and frequent rates of topdressing if a sand topdressing program has been started. Missing even one application date could result in the development of a layer of thatch which could ultimately have a detrimental effect, particularly on rooting, and maybe on water movement. Once on a sand topdressing program, always on it!

### Turf cultivation studies

A comparison of half-inch solid tines and half-inch hollow tines in cultivating a green with the Ryans Greensaire was initiated during summer, 1983. This research was conducted by James Murphy, graduate student. The holes left by the use of the solid tines grew back over more rapidly than when the hollow tines were used. Cutworm activity (Table 13) was greater in plots treated with hollow tines because these holes stayed open longer, providing a haven for the cutworms. Examination of the coring holes revealed that when the solid tines are used the holes tend to close back up rapidly while those from the use of open tines stay open longer. This is reasonable since soil is removed from these holes. There was no difference in rooting in plugs (4 inches diameter and 3 inches deep) removed from these plots.

When these cultivation treatments were applied to moist loamy sand there was no lifting of the soil on plots receiving either treatment. But when treatments were applied on a dry, compacted sandy loam there was some lifting of the soil around the aerifying holes with the solid tines. These preliminary observations would suggest that the use of solid tines may have greater potential if the soil is dry, although considerably more research is needed to evaluate this technique.

### Evaluation of winter protective covers for greens

Eight winter protective covers were placed on a Penncross creeping bentgrass green in December, 1982. Covers were removed in March, 1983 after snow melt. The excelsior mat resulted in the greenest turf after removal (Table 14). The microfoam mat with 2 layers of thickness also gave good results. The excelsior mat was messy, especially at time of removal. Within one week of cover removal a hard freeze masked all differences. No further differences were apparent thereafter.

Table 13. Effect of cultivation treatment on a Penncross creeping bentgrass green. Hancock Turfgrass Research Center. 1983. Averages for 3 replications.

<u>Cultivation treatment</u>	<u>Cutworm sites per plot</u>	<u>Root weights for 2x2x4 sample</u>
	no.	gm
Check	0 a <sup>x</sup>	.30 ns
Solid tines	27 b	.30 ns
Hollow tines	121 c	.33 ns

<sup>x</sup> Means in columns followed by the same letter are not significantly different from each other at the 5% level using Duncan's Multiple Range Test. ns indicates no significant differences occurred.

Table 14. Winter protective cover study on Penncross creeping bentgrass. Covers removed and evaluations made March 19, 1983. Averages for 3 replications.

<u>Cover treatment</u>	<u>Color rating (9=greenest)</u>
Microfoam - 1 layer	4.5 c <sup>x</sup>
Microfoam - 2 layers	5.3 b
Microfoam - 3 layers	4.2 c
Excelsior mat	6.7 a
White polyethylene	3.2 d
Clear polyethylene (punctured)	3.3 d
Saran cloth (75-90% shade)	3.0 d
Amoco filter	4.5 c
Check	2.2 e

<sup>x</sup> Means in columns followed by the same letter are not significantly different from each other at the 5% level using Duncan's Multiple Range Test.