

STOP 6

SAND TOPDRESSING FOR GREENS

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Sand topdressing on greens has become a common practice on many golf courses. Drs. Madison and Davis at the University of California at Davis first proposed the use of sand topdressing as a cheaper alternative to rebuilding greens which had very poor soil conditions. With the decreasing availability of good quality, uniform topsoil, many golf course superintendents have opted to use sand as a topdressing material.

The "sand topdressing program" as recommended by Madison and Davis has two primary requirements: 1) Selection of the appropriate quality sand and 2) Application at the appropriate light and frequent rates. When selecting a sand, one should look for particle size and distribution, mineral content, pH, uniformity, availability and cost. The sand size is most important. Most people prefer a sand which has nearly 100% medium and fine sands, although some would lean to more coarse sand and less fine sand. If only lower quality sand can be utilized because of availability or cost, it is best to accept only small percentages (5%) of very fine sand or very coarse sand. The very fine sand will tend to be more susceptible to compaction while the very coarse sand interferes with putting and mowing. The sand size ranges are presented in Table 1. When selecting a sand, check carefully for not only particle size but the other factors mentioned above as well.

The objective in the "sand topdressing program" is essentially to apply sand at a rate and frequency which just matches the rate of accumulation of thatch. With proper rates and frequencies of sand there should be no apparent layers of either sand or thatch. The general recommendation is 2-3 cubic feet of sand applied per 1000 square feet every 3-4 weeks on bentgrass greens. When growth is faster, a more frequent application is suggested, but if growth is very slow in the summer, a lower rate or less frequent application may be necessary. Factors that influence growth rate such as fertilization, moisture stress, wear, compaction, disease or nematode activity and length of growing season should be considered in planning rate and frequency of application.

Some errors that have been observed with sand topdressing include too frequent topdressing or at too high rates. This leads to more severe ball marks, more wear susceptibility, difficulty in maintaining the putting surface and layering. Some people have used sand on a limited scale, as spring and fall at higher rates. This leads to very distinct sand layers and limitation in water movement and rooting. Improper use of sand in a topdressing program can lead to serious management problems.

Remember that these low rates of application cannot be measured. Note the rates and depth given in Table 2. When applied at 2-3 cu ft/1000 sq ft, it is difficult to even see the sand.

Advantages reported from proper use of sand topdressing are a fast, true putting surface, no thatch problem, improved drainage and rooting on greens which have very poor soil. Some have suggested there is less Poa annua with

time when used on a mixed Poa annua bent green, especially if bentgrass seed is applied when topdressing. Some superintendents believe there is no effect of dulling of mowers after topdressing at these low rates.

Some precautions with sand topdressing: 1) This will not overcome other poor management practices; 2) You must adapt the program to your specific needs--you may need to vary the program on specific greens or parts of greens; 3) Once on the program, you should never change back to a finer soil for topdressing--a perched water table will result; 4) Since the rooting medium will change, other management programs must change--fertilization, watering, use of wetting agents to prevent localized dry spots.

These plots were established to evaluate the influence of nitrogen fertility and frequency of sand application on rate of thatch accumulation and layering on Penneagle bentgrass.

Sand topdressing is not for everyone. Evaluate the need of your turf carefully before jumping on the bandwagon.

Table 1. Sand particle size ranges.

<u>Soil designation</u>	<u>Sieve designation</u>	
	Retained on	Passes through
gravel	2.0 mm (10)*	---
very coarse sand	1.0 mm (18)	2.0 mm
coarse sand	0.5 mm (35)	1.0 mm
medium sand	0.25 mm (60)	0.5 mm
fine sand	0.1 mm (140)	0.25 mm
very fine sand	0.05 mm (270)	0.1 mm
silt and clay	-----	0.05 mm

* The 2.0 mm sieve has a 2.0 mm opening. The sieve number is 10 (meaning 10 openings per inch).

Table 2. Rate of application of topdressing and associated depth of material.

<u>Cubic feet/1000 sq ft</u>	<u>Depth, inch</u>	
2	0.024	1/42
3	0.036	1/28
4	0.048	1/21
5	0.06	1/17
8	0.10	1/10
10	0.12	1/8
12	0.14	1/7
15	0.18	1/6
20	0.24	1/4