Improved turf quality for experimental plots on the left foreground are due to sand topdressing applied the previous year. Plots are a mixture of warm and cool season grasses.

the topdressing of turfgrasses. Engel (1967) reported on a ten-year study where topdressing was used in three out of ten treatments for thatch control.

He used a sandy loam topdressing containing 8 to 12 percent organic matter. Topdressing — containing treatments in this study were associated with reduced thatch, improved quality, reduced amounts of Poa annua, improved infiltration and freedom from dry spots.

Rice (1964) included topdressing in a relatively short term study he did on Penncross creeping bentgrass. He compared a sand, a loam and a loam-sand mixture with no topdressing. Skogley (1976) reporting on this thesis noted that the loam and the loam-sand mixtures produced the highest quality scores. Sand resulted in inferior quality scores in the spring but was better than no topdressing. In July of each year only the no topdressing treatment was rated inferior. Roots were more plentiful under topdressed turf, and in a fall sampling only sand topdressing had significantly more roots below two inches. Sand was found to be most effective in reducing the organic matter accumulation in the surface inch of soil.

Skogley (1975) also reported effects of topdressing on management of velvet bentgrass. Using a soil-sand mix he reports topdressing seven times per year resulted in reduced organic matter and improved turf quality score averages two out of four years when compared to two topdressings per year but not when compared to four topdressings.

Madison (1974), in several similar articles suggested topdressing with sand containing fertilizers and pesticides as “an alternative method of greens management”. Thompson and Ward (1965 and 1966) report topdressing to be the management method which best reduces thatch under bermudagrass. Both Cole (1975), Madison and myself suggest that topdressing will reduce disease problems. Engel, however, found more dollarspot associated with topdressed bentgrass plots than untopped dressed plots.

Most, but not all, writers on the subject favor topdressing. With those writers that do favor regular topdressing there is disagreement as to what should be used for topdressing material. Madison recommends sand and the USGA Greens Section appears to be leaning in this direction. Most of the old superintendents and most of the researchers above use or used a sandy loam, often with medium to high organic content. In the past, recommended practices were to use a material of Continued on page 32
TOPDRESSING WITH SAND

the same composition as your soil. But if you want to improve the soil, most of you would want a sandier mix which would hold promise of better drainage. So why not topdress with sand? I personally see no good reason for including organic matter in a topdress mix when reducing thatch accumulation (organic matter) is a principal goal. I would feel more comfortable in recommending straight sand topdressing if there were some research results showing that it was indeed better than a loamy sand.

A straight sand topdressing does offer advantages over a topdressing mix. It should be a lot cheaper, and secondly, one should be better able to spread it cheaply and easily with large cyclone spreaders. If you do go the straight sand route, I suggest you follow Madison's advice. Use sand less than 1mm in size. This gives you a material which will work easily into the surface mat and thus not interfere with mowers or golfers.

I agree with Madison in that the first couple of sand applications should go on after a heavy, deep aerification in which the cores are removed before topdressing. The sand should then be worked down into the holes so that there will be a transition zone of sand and old soil rather than a direct layer of sand on soil. If the soil below is extremely impervious you can still create a "Dagwood sandwich" of alternate layers of sand, thatch, calcined clay and other topdressing materials. Layers impede water, air and roots. Regardless of what you decide to do about topdressing, avoid layers of fine materials on coarse materials. Layers may cost you your turf and also your job.

Also I suggest that you topdress more frequently when creeping bentgrass stolons are growing the most. The peak growth period for stolon growth is the last half of June. Therefore, topdressing should be most frequent in the May through July period.

Holman Griffin recently wrote, "A good topdressing material (properly analyzed) can eventually modify or replace the poor soil to a depth which is adequate to give your green a new lease on life and provide a manageable situation." Properly done, topdressing can be beneficial to creeping bentgrass. Improperly done, it may cause you many more problems than it is worth.

I suggest you read the articles I mentioned by Engel, Madison, Skogley, Thompson and Ward before beginning on a topdressing program or before changing to a straight sand topdressing.

Dr. Douglas T. Hawes is assistant professor, department of agronomy, at the University of Maryland College of Agriculture at College Park.

Bibliography on Topdressing —

Reubens grass indicated for revegetation

Some of the toughest territories for revegetation in the cool season areas of the states and Canada are mining areas.

The Jacklin Seed Co. has researched a substantial number of grasses that have good revegetation characteristics. One of these, Reubens Canada bluegrass, was tested in metal mining and coal stripping areas. Results were significantly encouraging to both mining people as well as professionals who specialize in contracting for reseeding freeway cuts, county road projects, pipeline rights-of-way and other construction.

Reubens Canada bluegrass has an excellent tolerance factor that permits it to germinate faster and to establish a better density under low fertility conditions because of its aggressive rhizome growth and tiller development. It also persists in extremely dry, barren soils and regrows quickly after a fire.

Reubens is best suited for all cool season areas of Canada and the United States as well as portions of the warmer transition zones. Following establishment, Reubens survives severe extremes of cold and dry conditions.

Additional tests in progress indicate it could be included in most plans for revegetating subsoils exposed by telephone, power line and pipeline right-of-ways, ski slopes, sanitary landfills, backfilled quarries, stripmines, roadway cuts, mine tailing, earthen dams, dikes and burned areas.

Reubens appears to be a significant find in the continuing search for vegetation that can withstand poverty soils, lashing winds, and gully-washed rains, droughts and the challenge of erosion control.
Better live oaks grown with new method

A novel method of propagating the live oak tree without using seeds has been developed by horticulturists at the Texas Agricultural Experiment Station (TAES).

The technique permits live oak growers to select trees for uniformity and provide superior trees for the public, according to Dr. David L. Morgan, horticulturist with the Experiment Station at Dallas.

Desirable characteristics in live oaks which could be selected and propagated include tree shape, leaf color, leaf retention in winter, increased growth rate, drought tolerance, and possibly insect and disease resistance.

The implications of landscape design with uniform plant materials are readily obvious to growers and landscape architects, Morgan points out. Instead of growing the oaks from seed, cuttings are multiplied from selected trees. This system, called asexual propagation, gives consistently high quality, uniform trees.

At present, nurserymen grow the live oak from seed. The problem with this method is that the live oak is wind pollinated, and seed from a beautiful spreading oak may also get half of its characteristics from a nearby tree that's weak, diseased, and ugly.

In the past three years, Morgan has successfully propagated native live oaks from tip-stem cuttings. The cuttings are taken from young, select trees in the spring-summer growing season, treated with a chemical hormone, and kept in a high humidity chamber at the Experiment Station at Dallas.

Cuttings form roots in 12 weeks and when grown should be like the parent tree.

An example of the advantage of this method is the propagation of trees resistant to the mealy-oak gall. Morgan and two Experiment Station entomologists have discovered trees with apparent gall resistance. Such trees, if propagated through stem cuttings, would retain their resistance to galls.

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In the study, low altitude color infrared aerial photography was used to document the initial effects of brush control on secondary plant successions. The first aerial photo mission was flown prior to treatment in the spring of 1973 and has continued to be taken each spring and fall through 1976.

Supportive field data were collected in conjunction with each photo mission. Together, the field and aerial photo measures provided information on plant response to brush control which could not have been available using either technique alone. For more information, telephone K. C. McDaniel, J. H. Brock and R. H. Hass, College Station, Tex., 713-845-7012.

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