

without problems. The top five varieties, including pounds to tear were: Nuggett, 168; Pennstar, 167; Fylking, 158; Pp-1, 155; and A-34, 146. Belturf, Merion, Captain, PSU k-107 and Jamestown Red Fescue all rated 140 or above.

— Most sod varieties exhibited an increase in sod strength between June and August.

— In a mixture study of six varieties — Fylking, Merion, Newport, Park, Prato and Windsor in 11 different combinations — those blends containing Fylking tended to rank higher in sod strength.

— An evaluation of sod strength for 11 mixtures of Merion and Pennlawn Red Fescue (a sod mixture in demand for areas having both sunlight and shade) disclosed that mixtures containing as little as 30% Merion on a seed number basis gave comparable sod strength to the five highest ranking variety mixtures.

Studies of sod heating since 1966 indicate that:

— Mowing at 0.75 inch and removing the clippings are the most effective ways to reduce sod-heating injury.

— A high nitrogen rate (5 lb. N/1,000 sq. ft.) applied five days before harvest was detrimental to the sod. Respiration rate and percent kill were significantly increased; root production was significantly decreased.

#### Reports From Europe Trip

Dr. Beard and Dr. Paul E. Rieke reported on their trip to the International Turfgrass Society in Harrogate, England, and a subsequent inspection of turfgrass areas in a number of European countries.

Some general conclusions, they reported, were that the British are considerably behind the U.S. in turfgrass culture and maintenance; that Sweden, in some respects, is ahead of the U.S., particularly in the area of sports turf maintenance.

Solna Stadium in Stockholm, they reported, exhibited excellent grass, despite the fact that 90 games of soccer are played on the field a year. At Soderstadium, also in Stockholm, the field is in use 260 days of the year, to include flooding and freezing it for winter sport games.

At least a couple dozen stadiums were equipped with underground heating systems. Dr. Beard could think of only two or three in this country, one being at Green Bay, Wis., home field of the Green Bay Packers.

## Your Reputation as Grower Goes With Handler of Sod

A wise sod producer may conclude that his responsibilities don't necessarily end when he delivers the sod to the purchaser. What happens in the next few hours, days or months could very well damage his reputation through no fault of his own.

These inferences come from the remarks of Ben Warren, president of Warren's Turf Nurseries, Palos Park, Ill., during the recent turf courses at Rutgers University.

There is considerable difference in sod handling, Warren said, depending on who handles the sod between grower and ultimate buyer. Sometimes sod isn't stored properly and deterioration results.

He has noted that some merchants have no provisions for rolling out sod, but move large volumes quickly. These largest and "better organized" dealers plan that any surplus can be used on landscape jobs by their own landscape department or local contractors.

"Vacuum cooling has been a great aid to this type of merchandising, so sod can be kept three or four days in stacks before damage occurs," he said.

Some dealers, he continued, may stock sod for short periods but have no provision for rolling out surplus on pavement or polyethylene sheets.

And there are merchants that stock no sod, but maintain an attractive plot of grass from which orders are taken.

The large volume that goes through the landscape contractor isn't endangered unless unfavorable weather occurs, he said, for the sod generally is planted immediately.

Again, he added, vacuum cooling has been a boon on occasions when

unexpected rain delayed installation for several days.

"A high percentage of this grass is well-planted by competent workmen, Warren believes, "but that small part that is poorly handled is provoking and makes an unfavorable and lasting impression."

Warren has observed these bad practices:

1. Failure to recognize and correct contaminants that exist in the site soil can lead to dissatisfaction. The two most noxious problems are quackgrass and bentgrass. Eliminate these before laying sod.

2. Poor grading resulting in water-holding depressions or a surface too rough for satisfactory mowing creates conditions that are almost impossible to correct after grass is established.

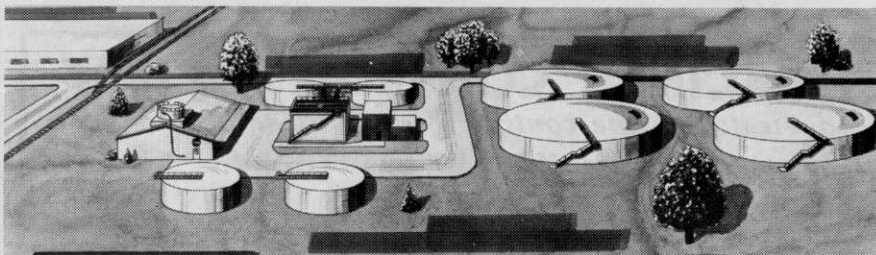
3. A not uncommon problem is the misuse of varieties. The outstanding abuse is the planting of Merion bluegrass in too much shade.

4. Lack of use or misuse of fertilizer is encountered.

5. Careless or ill-advised use of herbicides has caused from minor damage to complete kill.

6. Probably the most frequently encountered abuse of sod is seen in the management of water. This type of mishandling can be briefly described as ranging from too little, too late, too much, and too often.

In conclusion, Warren said, "properly advising the new owner in the care of his new grass is often neglected or overlooked. We suggest that written suggestions on the care of grass be placed in the hands of the owner upon completion of every job." (And that seconds the motion, we offered in the February issue about a turf owners' manual.)



The first phase of a new \$2½ million Chemagro Corporation waste treatment facility is under construction at the company's production plant for environmental control chemicals in the Kansas City, Mo., Northeast Industrial District. Estimated completion date is mid 1970. A staff of six will operate the unit 24 hours a day. The treated water will be purer than the water of the Blue River into which it flows.