

How To Ready Soil for the Next Crop

After sod is carted off to the market, growers have to dive right in and start all over again. Soil preparation is the foundation for a fertile, healthy stand of lush sod and maximum profits.

Most fields are made ready for the next crop in two steps: (1) cultivating, and (2) adding fertilizer. Irrigation is used before seeding as a cultural practice on some farms, depending on local climate and soil type. Does every grower follow the same techniques? We wanted to find out.

How do you plow and work the soil before reseeding your favored variety? How much fertilizer and lime do you put on your fields? Do you pre-irrigate? During the past few months, WTT staffers asked these and other questions of cultivated sod growers throughout the nation.

Professional growers WTT talked with included: Bill Johnson, Halmich Sod Nursery, Brown City, Michigan; Wilco Sod Nursery owner Allan DeMuth, Monee, Illinois; Edward Jacobsen, owner, West-Turf Co., Tehachapi, California; Wiley Miner of Princeton Turf Farms, Cranbury, New Jersey; Mel Rich, Richlawn Turf Farm, Denver, Colorado, and Triangle Sod Company supervisor, Lonas Amerine, Belle Glade, Florida.

Michigan Peat Seed Bed Not Irrigated

"In Brown City, Michigan it rains enough so we don't need to pre-irrigate, although in areas west of us around Chicago, irrigation is standard procedure," Johnson told us.

"Of our 1,200 farmed," he continued, "about 800 acres is in Merion bluegrass sod. After stripping, we use everything; start out by plowing our peat soil to break it loose, then pack it with a spring-toothed harrow and slowly work from the spring-tooth to a spike-toothed harrow to make a fine bed for seeding,

working the soil as much as time and weather allow.

"We use around 1000 lbs. fertilizer per acre of either 5-20-20 or 5-10-30 (nitrogen-phosphorus-potassium). Years ago we started out with 400 lbs. per acre, and I've been increasing it every year. I don't use lime because we've found that it's unnecessary in our peat soil.

"After the fertilizer is down,

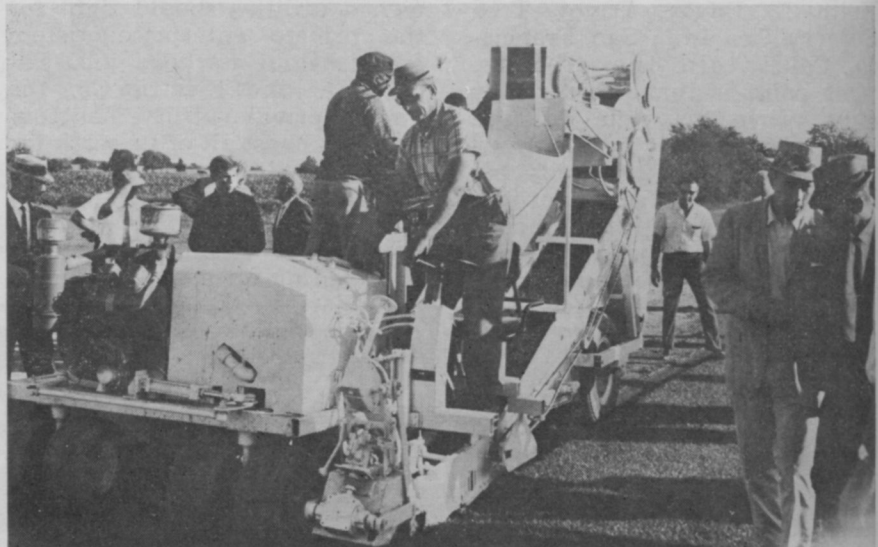
we roll our cullipactor to pack the soil just before seeding."

Fluffy Loam Packed by Rolling in Illinois

"I use a Graham, seven-tine plow to rip up the dirt here in Monee, Illinois," DeMuth explained in telling us about his post-harvest techniques.

"Our soil is a loam type underlain with black dirt. We usually

Princeton Turf Shows Its New Sod Harvester



Demonstration of new sod harvester was big event at recent sod growers meeting in New Jersey.

At a recent meeting of the Cultivated Sod Association of New Jersey, Inc., the first public viewing and demonstration of a self-propelled mechanical sod harvester was held. Unveiling of this new equipment was a giant step forward in the mechanical harvesting of sod. The sod harvester has been developed by Princeton Turf Farms of Cranbury, New Jersey.

Manned by a crew of 3 men, the sod harvester will "lift" and palletize sod at a rate three times as fast as the method of harvesting commonly in use today. In addition, another unique feature is the uniformity and thinness of cut in spite of undulations or depressions in the soil surface.

Striving for further improve-

ment of the current model, Wiley Miner of Princeton Turf Farms already has another model on the drawing boards incorporating additional automated features.

The demonstration attracted a group of 70 individuals comprised primarily of sod producers from New Jersey and neighboring states. The demonstration was followed by a chicken barbecue and a business meeting of the association. Arrangements for the demonstration, barbecue and meeting were under the direction of Dr. Henry W. Indyk, extension specialist in turf management, Rutgers—The State University, and presently secretary of the Cultivated Sod Association of New Jersey, Inc.

put out 10 to 15 acres of Merion bluegrass. It seems to be ready for harvest sooner than Kentucky bluegrasses we've tried before. They took four years to get ready for harvest!

"We use the Graham at least twice, and usually three or four times. It cuts two to three inches deep each time. Our old S-30, International tractor, made in the thirties, still does a fine job in this operation. After the loose dirt is exposed to a few rains, I use a regular mobile plow to turn it over.

"Leveling is the next step. We use the disk for this, but find that after going over the field several times, our loam soil becomes fluffy in spots; tractor wheels sink in these soft depressions, often 20 to 40 feet long. To compact the soil so that our low-slung seeder won't drag, we use a roller and a weighted harrow on the field after discing.

"My last operation, just before seeding each year, is adding fertilizer. About every three or four years we add lime according to soil test results. I put on either

1,000 lbs. of 10-10-10, or 700 lbs. of 14-14-14 per acre. Usually put on 10-10-10. After the fertilizer is applied, I go over it once lightly with a harrow and then start seeding," DeMuth said.

Plowing Starts August 15th in New Jersey

Miner, in Cranbury, New Jersey, begins his new-start schedule this way: "We're growing Merion bluegrass now, and this fall we'll have about 1,500 acres out. We also grow mixtures of Kentucky, Merion, and Amron fescue on the loam soil here.

"In this area, we have two heavy cutting seasons. One starts in late March and continues through June. Another is around the middle of August.

"After cutting, we begin to plow. This starts about the 15th of August. Then we disc the fields and add fertilizer.

"Fertilizer, 0-20-20, usually runs from 300 to 600 pounds per acre. We use one to four tons of lime every two years or so according to results from soil tests.

"After the fertilizer is worked into the soil by discing, we bring out our spring-toothed harrows to level the fields. Our farm continues harrowing and constantly keeps the soil clean and ready to seed in the fall.

"Just prior to fall seeding, we put on 100 lbs. of urea per acre for nitrogen. After seeding and during the growing season, urea is added at 80 lbs. per acre," Miner reported.

Californian Pre-Irrigates to Settle Soil

Jacobsen in Tehachapi, California says, "We always reseed our 150 acres for sod production. Our soil is classed as a loam, and we grow hybrid bermuda varieties as well as bluegrass combinations.

"The first pre-seed operation here is chiseling, or plowing, which tears the soil loose about 12 to 14 inches deep. Next, we springtooth harrow the ground and then pre-irrigate.

"By pre-irrigating, we saturate and settle the soil. Our irrigation mainlines are the permanent

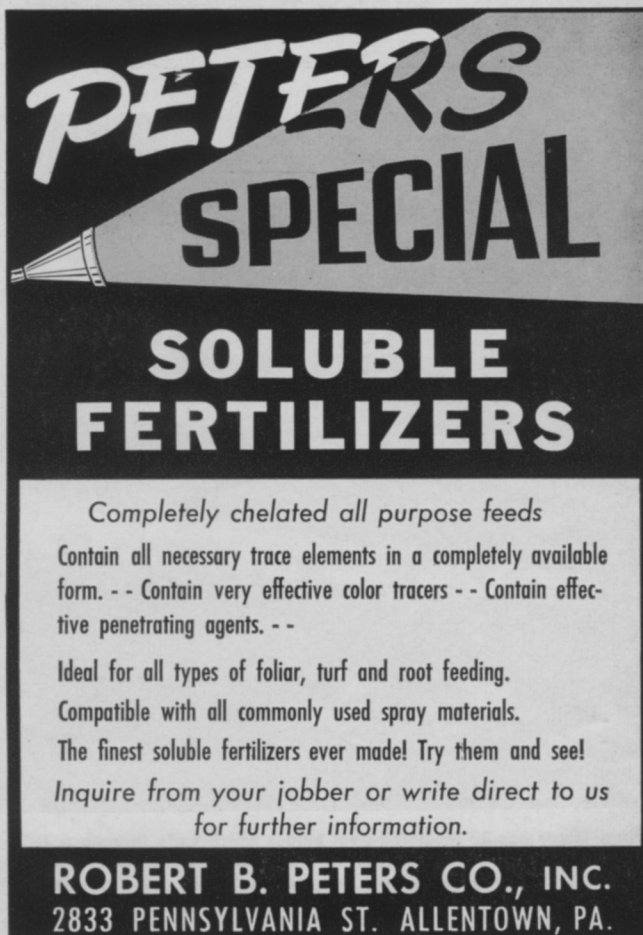
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surface type, and the laterals are moveable.

"After we irrigate and harrow once, we do it again. Then we add fertilizer, using 16-20-0 at 250 lbs. per acre, put on before seeding. Ammonium sulfate is applied monthly after seeding. We don't add lime because soil here is not acidic.

"After the fertilizer is applied, the fields are cultivated at very shallow depths. Then we put the seed in."

Bluegrass Seeded on Colorado Loam

"We always reseed our 465 acres out here in Colorado," Rich said in Denver. "Our soil is sandy-loam, and we grow Merion, Clark and Kentucky bluegrasses.

"The bulk of our stripping is in early spring, from March through June. July and the first part of August are slack. In September and October, stripping picks up again, when we average two acres a day.

"After the stripping operation is finished, soil is turned with a Reason plow, and we use a 12-foot rotavator to work the surface. A 121 h.p., 5010 John Deere

tractor and a 84 h.p., 4010 John Deere pull our equipment. Afterwards the Rototiller goes to work to break the chunks and level the soil. Then the field is rolled twice with a regular cul-pactor to break and pack the soil. It's rolled once more and we start to seed.

"We don't put on fertilizer before we seed, but apply nitrogen at 7.6 lbs. per acre through irrigation water after the grass is growing. No lime is added.

Florida Muck Irrigated by Canals

"We never reseed," Amerine at Belle Glade, Florida points out. "We grow primarily St. augustinegrass here with some bermuda varieties, zoysia, and centipede. We strip sod from our muck soil about every 13 months. The sod is cycled on our 1,200 acres so we can strip periodically all year round. This way some sod is ready for harvest while more is in the growing stage.

"After stripping, we roll the muck soil and wait for regrowth from root systems left in the ground. While waiting, we add about 100 lbs. of lime per acre.

"Our fields are consistently ir-

rigated by a canal system laced through the farm. Water level in the canal is maintained so the muck soil can be saturated at any depth. Plenty of water is supplied to roots left in the ground, and seeding is not necessary here for succeeding good stands of sod."

It's apparent, representative sod growers devise cultivation practices to coincide with prevailing climatic and edaphic (soil) conditions. In Michigan, Johnson found pre-irrigation unnecessary this year since rains supplied enough water for proper soil moisture. But, irrigation is commonly needed near Chicago where rains are not sufficient for adequate sod moisture.

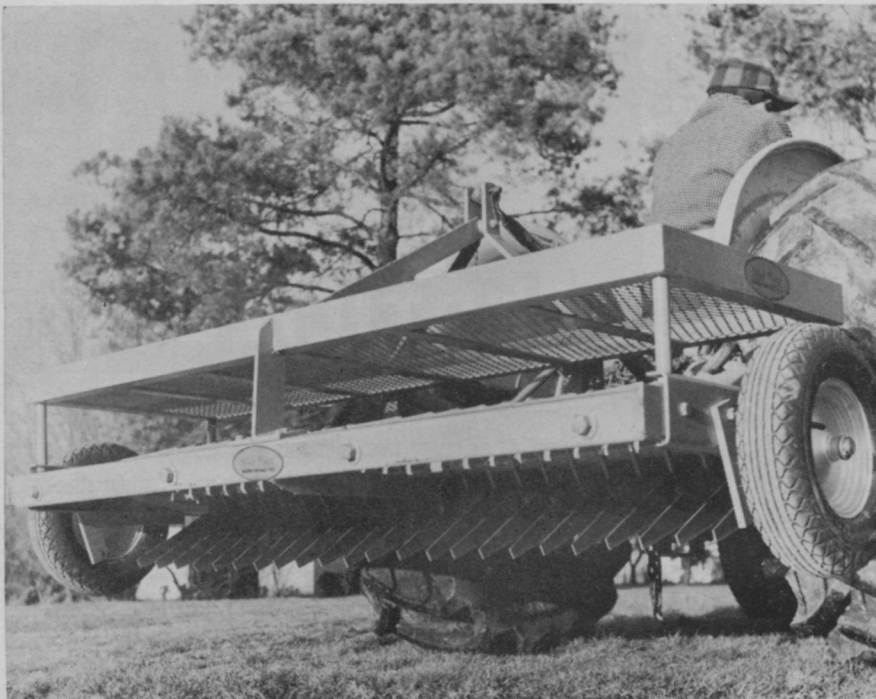
Methods of leveling, cultivating, and sod growing are governed by soil type, water availability, acreage, and personal preference. Sod is propagated from roots in rich, well-irrigated muck in Florida, while seeding is favored on loams in New Jersey, Colorado, California, and Illinois.

In California, irrigated water is used to settle the fields as a regular cultivation practice; rollers or rotavators are put to work elsewhere to make the soil compact before seeding where rainfall is adequate.

Generally, growers that reseed, cultivate by first breaking the soil loose with a plow. Discing or light plowing may follow several times, depending on how often it rains or to what extent the soil clots. Finely tilled beds for seeding are prepared by repeated cultivation with spring-toothed and spike-toothed harrows.

Sod fields in Florida are rolled level after sod is stripped. Since propagation is from root growth, fields are not plowed or harrowed, but the roots are left undisturbed to sprout anew.

Fertilizer rates are determined by two methods. Soil samples are sent to agricultural testing stations to detect deficiencies that can be replaced by recommended amounts of fertilizers. Need for fertilizer, and sometimes even relative rates, can be determined by the trial and error method over a period of many years.



Verti-Slicer has 23 tempered-steel blades which knife through a 70 inch swath of turf at depths up to 2½ inches. The tractor-drawn unit produces continuous "fine-line" turf slicing of fairway grasses as it prunes grass roots and provides water and air penetration of turf. Verti-Slicer can be used throughout the season, does not disturb grass surface, and allows uninterrupted play, according to West Point Products Corp., West Point, Pa., which can supply further information.