

Sodmen Move to Form National Group

Meeting in the Washington (D.C.) Hilton Hotel in conjunction with the 38th International Turfgrass Conference, sodmen from around the country took initial steps to form a national association of sod producers.

Action came at the Thursday, February 9, sod session, chaired by Dr. Henry Indyk, Rutgers University extension specialist. "In the absence of a formally organized national sod producer organization, a program committee with representation from the sod industry and educational institutions scheduled the Sod Producer Session to provide producers an opportunity to meet on a national basis to discuss developments as well as problems pertinent to the rapidly growing sod industry," Indyk told *WTT*.

Opening the discussion of a national group, Indyk announced that the Mid-America and New Jersey sod associations had formally voiced approval of a national organization, and that support had been received from other groups and producers.

With an eye toward a committee representing as wide an area as possible, these sodmen were chosen to study details for the proposed association: Wiley Miner, Princeton Turf Farms, Inc., Cranbury, N.J.; Ben Warren, Warren's Turf Nursery, Palos Park, Ill.; Tobias Grether, California Turf Nurseries, Camarillo, Calif.; James E. Ousley, Ousley Sod Co., Pompano Beach, Fla.; and Eugene D. Johanningsmeier, Hiram F. Godwin and Son, Inc., South Lyon, Mich. Named to the committee in an advisory capacity was George Hammond, Paint Valley Bluegrass, Columbus, Ohio.

This year's sod program came in two parts, a morning session for producers and an afternoon session arranged by the GCSAA program committee. Next year's program will be up to the committee formed at this meeting.

Maryland Researches Sod

Leading off educational talks

on the producers' program, Dr. Elwyn Deal, turf specialist from the University of Maryland, College Park, cited the growing consumer demand for only highest quality sod. Noting that there has been almost no research to date on sod production as such, Dr. Deal suggested that the three greatest agronomic problems facing the industry were rhizome development, root development,

nitrogen and overirrigation will interfere with root development. Also, mowing too often, too closely, will hamper roots and rhizomes. A 2-in. cut at intervals of a week or more is preferable to a 1½-in. cut at twice weekly intervals.

Important for producers is the manner in which sod holds together and the techniques that will produce a well-knit product.

Dr. Arne Hovin (left), USDA turf researcher, makes a point during sod producers' discussions, as Dr. Henry Indyk, Rutgers extension specialist, looks on.



and numbers of roots and rhizomes in sod grasses.

How important is rhizome development? Deal pointed to recent instances of Merion sod with good rhizome development, which nevertheless failed to hold together when cut. This is an important factor when it comes to reestablishing cut sod, but it remains to be seen how important it is to the physical handling of sod.

Grasses need a good network of roots. But, how deep do they need to be? Only in the upper ½ in. to 1 in. for harvesting, but deeper roots are needed to survive under sod field conditions.

How does population density of grasses tie in? As population density increases beyond a certain point, size of individual plants decreases and when these begin to compete with each other there will be fewer roots per plant. Management practices will largely determine density and development, Deal said. As examples, overfertilization with

Extensive tests are underway at the University of Maryland in an effort to find out just how these factors relate.

Consider Roots and Tops

"Any long-term benefit to grasses can be achieved only if maintenance practices favor both roots and tops," Dr. R. E. Schmidt, Assistant Professor of Agronomy from Virginia Polytechnic Institute, Blacksburg, told sodmen. Leaf and root development can not be divorced: they are closely related in good grass production.

Mowing practices, moisture availability, light intensity, soil pH, temperature, and nutrition are major factors in grass production. Emphasizing nutrition, Schmidt said that as long as there is sufficient K₂O and P₂O₅ present, grasses will develop adequate roots if nitrogen fertilization practices do not interfere.

Nitrogen application must be carefully managed. This element

is needed for root growth, but too much will favor tops at the expense of roots. There is a big difference between adding nitrogen where none is present and overapplying nitrogen where it is already present at low levels.

Turning to other management factors, such as thatch formation and watering, Schmidt told growers they should be shooting for a 12- to 18-month production period for sod; with good management, thatch should not be too much of a problem in that time. When it comes to watering, the fine line between letting soil get bone dry and letting it

Drs. Elwyn Deal (left, from the University of Maryland) and **R. E. Schmidt** (right, from Virginia Polytechnic Institute) compare slides presented to sod gathering.



Wiley Miner, head of Princeton Turf Farms, spoke on industry mechanizations and sod specifications. At the a.m. producers' session, he was named to the national committee.



Sod producers Eugene Johanningsmeier (left) and **Ben Warren** (right) were both selected to serve on the committee investigating formation of a National Sod Producers' Association.

dry out a bit should be observed. A bit of dryness is desirable for root growth, while higher mowing, less frequent mowing, and adequate phosphorus and potassium fertilization will help sod get through periods of drought with good recovery.

"Interim" Grass Varieties

The ideal new turfgrass for the bluegrass region should be resistant to the diseases (such as stripe smut, rust, powdery mildew, and fusarium) that are now attacking Merion, Dr. Arne Hovin, USDA, Beltsville, Md., told producers.

Ultimately, hybridization will be employed to combine disease-resistant grasses, Hovin said. For the present, some of the newer varieties show promise: Scott's Windsor; Chicago Shade, developed by Warren Nurseries; Park, which is well adapted to cooler areas of the bluegrass region;

"**Sprigging and Plugging**" panelists (left to right), **Tobias Grether**, **Wade Slith**, and **James E. Ousley**, wait for session to get underway. Grether and Ousley are also committeemen for the proposed national sod group.



0217, or Fylking bluegrass; and Delft, a prostrate-growing Dutch development.

Of warm-season grasses, Tifgreen "will be replaced by Tifdwarf," the first true dwarf Bermuda, Hovin predicted. Santa Ana, a West Coast development, was also cited as promising. Among zoysias, there has been no great improvement in billbug resistance, though Emerald is somewhat better than Meyer zoysia in this respect.

Also addressing the producers'

gathering were Wiley Miner, president of Princeton Turf Farms, Cranbury, N.J., and Professor Wallace A. Mitcheltree, of Rutgers University.

Tracing the development of Princeton Turf Farms' new sod harvester, which is now available commercially, Miner predicted that producers will eventually have to employ mechanical harvesting techniques if they are to survive in the industry. This leads to another consideration, Miner noted: pro-

ducers will need a high quality of sod in order to handle it mechanically.

Begin Before the Beginning

"What is done before starting to grow sod can have a lot to do with what the end product will be," Dr. Deal told the afternoon sod session held jointly with golf superintendents.

Of prime importance in preparing for sod production are the selection of a suitable soil, adequate grading and leveling, adequate nutrition, and good planting practices. For sprig production, a light, sandy soil is satisfactory. But, for producing plugs or sod, a heavier soil is required. Fields should be graded until they are gently sloping. Most important, sunken patches, or water pockets, must be eliminated. Calling this a big cause of trouble for many farms, Dr. Deal recommended following the field for several months before planting. This allows soil to settle so that trouble spots can be corrected, and also allows time for weed elimination.

In the early stage of grass establishment, lime and phosphorus are more critical needs than nitrogen and potash, which can best be added later. Lime and phosphorus should be thoroughly mixed throughout the top 3 or 4 in. of soil. When planting, seeding in two directions at right angles to each other is suggested. For final seedbed preparations or maintenance operations, tractor tires with cleats or lugs should not be used. This is another common cause of sod loss, Deal explained.

Why Vegetative Establishment?

Defining vegetative establishment as the use of mature plant tissues for establishing a plot of grass, Ben Warren, president of Warren's Turf Nursery, examined the advantages of this practice as it applies to both whole sod and use of plant parts, such as plugs, sprigs (stems), and stolons (stems chopped into fine pieces).

Chief characteristic of whole sod is the "immediacy" of establishment, according to Warren. A grass cover is immediately

available to control erosion, or form a playing surface, or serve an aesthetic purpose. Only a short critical maintenance period of two to three weeks is required after establishment; then, normal maintenance is possible. Further advantages include purchase of a finished product, which can be examined for quality, and flexibility of installation—any time the ground can be worked.

Establishing plugs, sprigs, or stolons is often a matter of necessity when grass varieties do not reproduce from seed, or have a poor seed yield, or seed is difficult to germinate, or reproduction from seed is not consistent. Here again, establishment is marked by a shorter intense-care period and a somewhat more flexible planting schedule.

Growing, Buying, Selling Sod

Placing greatest emphasis on the importance of a *uniform* stand of sod, Dr. Indyk offered some suggestions for producing quality grasses. After selecting well-drained land with an abundant water supply and a minimum of hard-to-control weeds, and after adequate seedbed preparation, the grower must seed carefully. Late summer and early fall seedings usually perform best, often outstripping seedings made in the spring of the same year. Also, light to medium seeding rates are most desirable if grasses are to develop a good root and rhizome system.

After seeding, a constant and closely watched maintenance program will bring sod to maturity, at which time it should be thin-cut ($\frac{3}{4}$ in. to 1 in. thick). Thick-cut sod complicates handling and reestablishment.

What factors should the sod purchaser consider? Wiley Miner enumerated these points: suitability of grass type to the intended area and purpose; source and maturity of sod; quality, including uniform density, texture, and color, and freedom from plant and insect pests; thinness of cut; short time lapse between lifting and installing; and such installation factors as sodbed preparation, laying, rolling, and watering sod, and main-



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taining the grass during its early, critical period.

"A sound, functional sod certification program can help bring a better quality sod to the market," J. L. Newcomer, University of Maryland professor, related. With the wide range in quality of sod being sold around the country, at least six states have cultivated sod certification programs underway, and the International Crop Improvement Association Grass Committee is working on General Certification Standards for Sod. Why certify? "Certification can help in marketing of quality sod of named varieties," Newcomer stated. The general public, and particularly architects and builders, want and need more information on suitable grasses and the assurance they are getting what has been requested.

Panel Views Sprigs and Plugs

"Rooting of stolons or sprigs is affected by the same three basic elements as seed: water, heat, and oxygen," Tobias Greth-

er, president of California Turf Nurseries, told the joint meeting of golfmen and sodmen. Considering establishment characteristics of both bents and Bermudas, Grether outlined some basics for a good stand from stolon or sprig plantings.

Bents are easier to germinate and grow, though depth of planting is a critical factor. Intimate contact of stolons with soil must be established in the top $\frac{1}{4}$ to $\frac{3}{8}$ in. of soil. Constant watering to nearly field capacity is then required. Temperature can range from a daily average of 38° to 90° , with the optimum growing temperature at 60° to 70° .

Planting Bermuda stolons is a more critical operation, and greater care must be taken to get intimate contact between soil and stolons, since material left on the surface will generally desiccate. Just as it is important to avoid planting Bermuda stolons in a dry soil, irrigation is required almost immediately after planting. Temperature av-

erage must be at least 50° with no frost to establish Bermudas and zoysias.

Describing sprigging and plugging as "the most popular methods of vegetative propagation of large turf areas in the Southeast," James E. Ousley, president of Ousley Sod Co., pointed out that bermudagrass, zoysiagrass, and creeping bent are generally sprigged, while St. augustinegrass and centipedegrass usually give better results from plugging.

Sprigging is most commonly used on large turf areas, and gives faster, more uniform coverage than plugging. It is less expensive but more susceptible to weather changes and requires greater initial irrigation. Plugging carries a higher planting cost but is desirable where only limited water is available.

Wade Stith, West Point Products Corp., West Point, Pa., emphasized temperature and moisture as determinants of how well harvested stolons will stand up. "Excessive moisture can cause disease and loss of grass and a poor stand, while dryness can cause death when stolons are planted," he related. Experiments with refrigeration of harvested grasses have shown that they can be kept in excellent condition for several weeks as long as the temperature is maintained at the proper level.

A short question and answer session followed up the "Sprigging and Plugging" forum, with much of the discussion aimed toward Ben Warren's contention that seeded Penncross bent will show considerable variability in color, texture and disease behavior when observed in space plantings.

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