

## BETTER LAWN - - HARVESTS

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Better Lawn & Turf Institute

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### APPEARANCES DURING THE QUARTER

The following stories have appeared or been reprinted during the recent quarter, or are now in press:

Flower and Garden -- "Keeping Up With New Lawngrass Varieties"  
Brooklyn Botanical Garden -- "Buying Lawnseed"  
First National's Family Magazine -- "Lawn Making Time Again"  
Edison Garden News -- "Bluegrass Seeds Abundant"  
    "New Lawn Fescues on the Way"  
    "Lawns Help Control Pollution"  
    "Lawn Lingo"  
    "Seed Your Lawn in Autumn"  
    "Lawn Seed or Sod"  
    "Improved Ryegrasses to the Fore"  
    "Latest on Lawns"  
Ohio Turfgrass Foundation Newsletter -- "New Ryegrasses Better Looking-"  
    Hardier"  
    "Of Watering & Lawngrass Rooting"  
    "Arboretum Bluegrass, an Old Pro"  
Horticulture -- "Unconventional Lawn 'Personalities'"  
Parker -- "Lawn Grooming Made Easy"  
Better Homes and Gardens -- "New Lawngrasses Provide Opportunity"  
Horticulture -- "New Varieties Bring Change to Seeded Lawns"  
Weeds Trees and Turf -- "The Labor-Saving Plant Food"  
The Gardener -- "High Fever Over Cool Lawns"  
Resort Management -- "Lawns on the Upgrade"  
The Gardener -- "Avoid Summer Brownout in Lawns"  
American Horticulturist -- "Turfgrass Cultivars"  
Ohio Turfgrass Newsletter -- "Environmental Restrictions Affect Lawnseed Costs"  
American Rose -- "New Lawngrasses Applauded"

### CHANGE IN OFFICE MANAGER

Regretfully, Mrs. Esther Rush will be lost to the Marysville office, her husband being transferred from Marysville to another part of the state. Esther's efficient handling of Marysville staff responsibilities will be missed. Mrs. Lynda Rudeen is expected to assume Mrs. Rush's responsibilities beginning in January.

### OFFICE SCHEDULE

Mrs. Lynda Rudeen will be in the Marysville office if there is need to contact staff headquarters for reprints or other matters, while Dr. Schery catches up on last summer's vacation from January 9 until late in the month.

### LAWN GRASS STORY

"Keeping Up With New Lawngrass Varieties" was title of an Institute story appearing in November, 1972 issue of Flower and Garden magazine. The story has been reprinted for additional circulation.

General considerations concerning the new varieties which are becoming so prominent opens the story. Discussion of several of the Institute Variety Review Board acceptances follows. A lengthy table, listing all VRB varieties, with brief discussion of "Chief characteristics and Uses" accompanies the story. Sponsors of the listed varieties are given in a footnote (often readers want to know where seed can be purchased).

We are very pleased with the fine coverage accorded the new varieties by Flower and Garden magazine. An attractive photograph of plugs of bluegrass sod heads the story.

### THE LAWN BOOK IN GALLEY PROOF

The revision of The Lawn Book (being newly titled by the publisher something on the order of "Your Perfect Lawn") has progressed to the point of galley proof, delayed beyond original anticipation but still hopefully far enough along for spring publication. The text is basically an up-dating of the older The Lawn Book, with an additional chapter on ecology, and several expansions including a glossary.

### SEED FIELD POLLUTION PROGRESS

The November newsletter from the Oregon Seed Council carries encouraging news, not only of more satisfactory field burning this year, but progress with field burners and especially in the finding of uses for straw. It is reported that the Japanese have contracted for an initial order of 3,000 tons of straw cubes, and that additional orders are anticipated. Financing of expensive straw cubing machinery is a current drawback.

### WEED MEETINGS SCHEDULED

Upon invitation of Dr. Wayne Bingham, VPI, the Institute has agreed to present a paper at the forthcoming Weed Science Society of America meetings, to be held in Atlanta, February 6-8. An effort is being made to enlarge turfgrass interests within the society. The title selected is "Weed Influences on Lawnseed Quality".

### COOPERATIVE RELEASE SOON TO APPEAR

A brief lawn care booklet has been prepared by Dr. Schery for Parker Sweeper, to be distributed through that company's extensive dealer organization for acquainting consumers with proper lawn tending. Included are mention of new lawngrass cultivars, the advantages of ureaform fertilization, and similar facets of advice that the Institute tries to advance.

### NEW TURFGRASS BOOK

The publisher sent the Institute an advance copy of Turfgrass: Science and Culture, by Dr. James B. Beard of Michigan. This is a comprehensive teaching text which will be marketed in 1973. It is the most carefully-pu-together of the turfgrass books yet to appear (other recent ones being Madison's Principles of Turfgrass Culture, and the Agronomy Society's Turfgrass Science). Beard's book is lengthy (658 pages), expensive (\$17 list), and most thoroughly documented (hundreds of citations with each chapter).

Beard's approach in Turfgrass: Science and Culture is what we have come to expect of Jim Beard as a research man, -- meticulous, objective and thorough. The book will doubtless occupy library and classroom shelves as the best reference to date on turfgrass science. Logical organization, and an extensive index, augment the comprehensiveness of the work from the reference viewpoint. If anything, the presentation is more ponderous than it need be for use by the ordinary person, especially the lengthy list of citations on each and every subject.

The book is organized into three major sections, Part I The Turfgrasses, Part II The Turfgrass Environment, and Part III Turfgrass Cultural Practices. This is a helpful approach, the fundamentals being established initially, leading naturally into the "how to" advisories. It affords an opportunity for those interested only in the practicalities of "Mowing", "Fertilization", "Irrigation", "Cultivation and Thatch", "Establishment", and "Turfgrass Pests" (the titles of the six chapters in the third section) to consult these without wading through the background information when only advice on what to do is wanted. For the student, however, the chapters of Part I ("Growth and Development", "Cool Season Grasses", "Warm Season Grasses", and "Turfgrass Communities"), and Part II ("Light", "Temperature", "Water", "Air", "Soil", and "Traffic") will prove the meat of the compilation.

Although the book is clearly and forthrightly written (with no typographical or grammatical errors noted), it is still not what one would choose for entertaining reading or lively presentation. It is more a book by a scientist for scientists, who will appreciate the organization and attention to detail, rather than for popular acceptance. In its way Turfgrass: Science and Culture should be the monumental work for the present era that Musser's Turfgrass Management was to the formative years of turfgrass science. Beard's book will probably be a definitive reference for years to come, and we can feel that the Institute's confidence was well <sup>placed</sup> in recommending Beard and his outline to the publisher.

### IN FAMILY MAGAZINE

The Institute's story, "Lawn Making Time Again", appeared with credit in the summer, 1972 (vol. 1, no. 2) of First National's Family Magazine, Nashville, Tennessee. Renovation in autumn is recommended, "In bluegrass, fescue, bentgrass and ryegrass country ---" and, "seed of the leading lawn varieties sprouts well and covers quickly ----". A beautiful autumn color photo headed the presentation.

## AMERICAN HORTICULTURAL SOCIETY "NEWS"

The Institute reply to a columnist who ventured lawngrass to be unworthy of great horticultural respect was published in the Nov. News & Views of the American Horticultural Society.

Sample quotes: " -- some of us who like to think we have broad horticultural interests resent the 'look-down-your-nose' attitude about lawns and turfgrasses and the absence of any serious attention accorded them in horticultural conferences and publications." --- "Few ground covers other than grass are structurally equipped to accommodate to the mechanized upkeep of open spaces. Horticulturists should be cheering the recent development of many fine lawngrass cultivars rather than stating 'We all should think more of getting rid of grass.'" --- " -- many people, who would rather use a lawnmower than hand weed, trim and restrain a ground cover (for which no selective weed killers have been developed). Furthermore, lawns are of great [additional] value ---."

## LAWN FILM

In Search of a Perfect Lawn is title for an approximately 20 minute long film sponsored by Allis-Chalmers, a copy of which was sent to the Institute for review by Walter J. Klein Company. Attractive color photography depicts certain lawns throughout the country, presumably entered in a "Most Perfect Lawn" contest and visited by camera crews in helicopter. The tack is not convincing; it is apparent that location weighs more heavily than turf quality. In addition to individual homes there are pictured the White House lawn, certain cemeteries, golf courses, sod farms, and the "gimmick" lawn in Marysville, Ohio, laid on concrete. The only grass variety particularly emphasized is Pennstar, when picturing Dr. Duich and his home at Penn State University. Apparently Dr. Howland, formerly of Scotts, now in Nevada was consultant on the film, and provides a few rather pointless statements towards the end of the film. The film offers no instructional information on lawn establishment or care. No grass types are distinguished (whether northern or southern), and the film lacks a feeling of authenticity and understanding of grass.

## CUSTOMER REACTION

A recent survey of gardening people indicated these opinions to be foremost: positive -- "like to see things grow" (32%), "improve appearance" (25%), and "outdoors; closer to nature" (25%); negative -- "too much work" (48%), "weeding" (21%), and "don't have time" (20%).

These suggest that emphasis on labor-saving measures, ready-to-use pesticides, and high-quality plant materials would make marketing sense. "Economy" and "costs" are apparently way down the list of lawn and garden concerns.

## "BUYING LAWNSEED"

The Institute has prepared a chapter for the forthcoming Brooklyn Botanic Garden Handbook on Lawns, entitled "Buying Lawnseed". The chapter points out the quality features to be looked for in seed, and commends the industry for a generally responsible product.

VRB APPOINTMENT

Variety Review Board appointments for 1973 have been announced by President Osburn. Howard Kaerwer has agreed to remain as chairman for another year since the planned rotating chairmanship was disrupted by major mergers and divestitures this year among firms represented. Dr. Gerald Pepin, International Seeds, replaces Dr. Johnny Thomas on the board, while Doyle Jacklin continues as a technical representative, and Robert Russell as a commercial spokesman. Of course the president and executive director sit with the VRB ex officio, but do not vote.

GARDEN NEWS USAGE

George Jecmen's Edison Garden News, prominent in the Chicago area, made excellent use of Institute press materials for both the late spring and summer issues (Vol. 29, no. 5-8). Institute materials provided three pages in the May and June issue, with these titles: "Bluegrass Seeds Abundant", "New Lawn Fescues Are on the Way", "Lawns Help Control Pollution", "Spring Lawn Rolling", and "Lawn Lingo". In July and August readers saw: "Seed Your Lawn in Autumn", "Lawn Seed or Sod", "Improved Ryegrasses to the Fore" and "Latest on Lawns".

In all releases top lawngrasses are named. Advice is given to seek quality. The Institute name and address is given, with the offer "Leaflets saying the latest on new bluegrasses, fine fescues, bentgrasses and perennial ryegrasses can be had if a request is sent to The Lawn Institute ---".

Sample quotations: "Small seeds such as of Highland bentgrass or bluegrass mixtures find excellent lodging in sites --". "The chief concern, emphasizes the Lawn Institute, is not whether you choose seed or sod, but the quality of the grasses you select.", and "Check on the label to note if the new perennial ryegrasses in varieties such as Pelo, NK-100, Manhattan, Pennfine or Compas are included."

STORIES APPEAR

Issue no. 30 (September) of the Ohio Turfgrass Foundation Newsletter carried three Institute items, "New Ryegrasses Better Looking -- Hardier", "Of Watering and Lawngrass Rooting", and "Arboretum Bluegrass an Old Pro". Author and Institute identification accompanied the stories.

The first mentioned cited the advantages of the modern perennial ryegrasses, -- "they need not defer even to Kentucky bluegrass in attractive texture and color". The watering story cited the quickness of good grass seed to sprout, ryegrass quickly, fine fescues a little more slowly, and finally bentgrasses and bluegrasses. Non-burning lawn fertilizer was recommended. Arboretum bluegrass, looking little different than the "famed old fashioned Kentucky bluegrass which spread westward from Kentucky with assured self reliance", was praised for its tenacity during hot weather.

AN APPRECIATION

"I am deeply grateful to you and the Institute for receipt of this accurate and voluminous copy --- On each occasion that I receive -- inquiry -- , I always refer to your file and stress the authenticity and accuracy of the information. I sincerely look forward to continued receipt of these releases from your office --".

George C. Jecmen, Editor  
Edison Garden News

MASSACHUSETTS TURFGRASS CONFERENCE

Dr. Schery has been asked to discuss "Perspectives on Lawn Making and Keeping" at the Massachusetts Turfgrass Conference, scheduled for March 7-9. While it is impossible to attend many of the multitude of turfgrass conferences being conducted nationally these days, occasional appearances help the Institute "keep in touch" and are especially worthwhile when involving program appearance.

NEW LAWN DISEASE CIRCULAR

"Many thanks for your long letter with useful suggestions for improving Lawn Diseases in the Midwest. These are just the type of thoughtful comments I've learned to expect -- I'll contact you when the new circular and the individual sheets with colored photos become available."

M. C. Shurtleff, Plant Pathology  
University of Illinois

SALT ON ROADSIDES

A paper presented to the Ecological Society at the late December annual meeting dealt with the effects of de-icing salt on roadside grass populations in New Hampshire, the population containing red fescue and redtop among other naturally seeding grasses. The study shows that one percent salt for periods of up to three months do not appreciably increase mortality or interfere with growth. Higher concentrations (three and four percent) caused serious trouble, both in germination and grass mortality. Redtop appeared to tolerate salt better than the other species.

NOISE INFLUENCES GERMINATION

Hageseth et al reported to the Agronomy Society that certain frequencies of noise indeed do speed germination of moistened (turnip) seeds, although having no influence on dry seeds.

ROTARY PRESENTATION

Upon invitation of Sheffield Hyde, Saunders Seed, Dr. Schery talked to the Tipp City Rotary December 13. Reprints were offered attendees.

GLEANINGS FROM AGRONOMY MEETINGS

Attending division C-5 (Turfgrass Management) meetings during the national American Society of Agronomy Meetings in Miami, several presentations of probable interest to members were noted. On the whole, however, research reported was fairly limited in scope, and often of an abstruse nature apt to be of minimal practical usefulness to seedsmen. Golf green soil construction (Texas), the PAT System of athletic field construction (Purdue), the establishment of vegetation on steep highway slopes (VPI), nitrate electrode testing (California), carbohydrate extraction techniques (Michigan), electrophoretic identification of cultivars (Michigan), and similar topics are probably not of broad enough interest for review here. Short resumes of some of the other presentations follow:

Burns, Georgia, investigated improvement of late-season rooting of bermudagrass sod, as in repair of athletic fields. The only consistently useful practice was overseeding the bermudagrass with ryegrass, which increased adhesion of the patch up to 200 percent. Plastic covers often helped late in the season.

Burt, Florida, spoke about introduction of nitrogen fertilizer into the irrigation system (the apparatus for which was later seen on visitation to the Plantation Experiment Station). Soluble nitrogen can be effectively applied through the system, although field inspection showed the turf to be no more stimulated than by occasional surface application of UF fertilizer. While the scheme is feasible, it is doubtful that input cost is such as to make it practical.

Callahan, Tennessee, investigated toxicity of preemergence herbicides to Tifgreen bermudagrass. Overseedings as well as the basic bermudagrass was often injured. All herbicides except siduron controlled *Poa annua* well, but only bensulide and arsenate were relatively uninjurious to the bermudagrass. Siduron caused complete loss of sod (although many times there was revival the next year); this suggests a means for freeing bluegrass turf of unwanted bermuda? Dacthal (DCPA) typically gave least injury to overseedings (bandane and terbutol were most severe).

Carrow, Michigan, investigated arsenic toxicity of soils to *Poa annua*. Clay soils, especially if with a high pH and strong in extractable aluminum, tended to fix arsenic, making it less reactive in the elimination of *Poa annua*.

Cockerham, California, discussed uses of clipping by-products from sod growing; they were found to be quite useful for poultry feed.

Duble, Texas, discussed the lignin-cellulose ratio of thatch, and found differences to occur between varieties. This suggests the possibility of breeding relatively non-thatching cultivars. Selection of types low in lignin and high in cellulose should yield thatch that decomposes more readily.

English, Michigan, evaluated nitrogen treatments on Merion sod. Heavy nitrogen increased clippings but reduced rhizome growth and sod strength. Sod rerooting was best at low nitrogen levels. Soil

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GLEANINGS FROM AGRONOMY MEETINGS, Continued

nitrate content exhibited seasonal variation.

Freeborg, Purdue, spoke about the retention of arsenic where applied to golf course soils. In most cases the arsenic had moved very little in the soil column, even with repeated and heavy applications (observations were mostly on heavy Midwestern soils). Differences in *Poa annua* control were noted, and did not always correspond to the concentration of arsenic found in the soil (apparently some soils need greater arsenic treatment than others).

Johnson, Georgia, found st. augustine to be more tolerant of triazine soil treatments than centipede. Around 12 gms. of simazine to a hundred square meters gave reasonable control of weedy grasses and maximum spread of st. augustine.

Juska, Maryland, evaluated bluegrass at two cutting heights and two levels of nitrogen fertilization. All fertilizations gave added clippings, crowns, roots and rhizomes. Interactions relating the variety to treatments were uncertain, however. Sodco showed the greatest yield for all plant components, Cougar the least. In rhizome and leaf production, Nugget was far ahead of other varieties. Sodco and Baron cultivars behaved similarly, while Fylking showed high production in everything except rhizomes (but this is misleading since Fylking rhizomes are very slender and a low weight may still represent many rhizomes).

Kothes, Connecticut, investigated microbial ways of degrading thatch. The familiar recommendation of topdressing to reduce thatch was born out. Polyethylene canopy, misting, misting-with-fertilizer, carbohydrate additions, or introduction of selected microbes had rather little practical value. Microbial ecology in thatch is still poorly understood.

Ledeboer, South Carolina, investigated overseeding. Ryegrasses and Pennlawn fescue were severely thinned under very low cutting heights. Ryegrasses, Pennlawn and Seaside bentgrass were low in tiller production, required to maintain good density. Penn-cross bentgrass and Jamestown fescue were outstanding, maintaining excellent density regardless of the cutting height; their relatively short leaf sheaths and low leaf angle permitted them to escape severe defoliation.

Menn, Texas, found that there was little arsenic and mercurial leaching from a golf green, but considerable uptake by the grass plants. Nitrogen leaching did occur, but was least with ureaform sources.

Madison, California, showed that with Merion bluegrass efficient water utilization often correlates with nitrogen availability.

Powell, Maryland, checked whether thatch accumulation could be predicted according to grass variety. Rumen fluid from a fistulated steer was used to digest cultivar leaves, providing quick indication of decomposition. Differences between species were often marked, such as the case of far greater resistance of zoysia to decay than

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GLEANINGS FROM AGRONOMY MEETINGS Continued

bluegrass. Differences between cultivars within a species were less pronounced; the technique of utilizing foliage was questioned since the stems and roots contribute mostly to thatch.

Reeves, Texas, showed alterations in the concentration of N P & K in bermudagrass to correspond to clipping regimen. The basal fraction of the grass appears to act as a storage medium for nutrients.

Seitz, Florida, investigated response of bermudagrass, st. augustine and bahiagrass to a soil temperature gradient. Root growth responded at a lower temperature than did top growth, and "fleshy" roots were observed at low temperatures.

Snyder, Virginia, reported on investigations involving nitrogen and iron fertilization of Penncross bentgrass. Late season nitrogen applications were beneficial, but late spring nitrogen (although improving turf appearance) reduced root growth. Iron sometimes enhanced root growth but was of little value for winter color. Apparently there was synergistic effect between iron and nitrogen when used in combination, especially in late spring (this combination giving the best appearance at that time of year).

Wilkinson, Michigan, discussed electrophoresis identification of creeping bentgrass and Kentucky bluegrass cultivars. "Fingerprinting" by this technique is possible, and although it is not infallible in distinguishing cultivars, certain cultivars can be grouped and some accurately identified.

Wood, Vermont (and Washington) evaluated Kentucky bluegrass cultivars for wear. Merion and Nugget gave excellent ratings; Sodco, Pennstar and Fylking good; Cougar and Newport fair; Delta and Common poor. In general the improved varieties wore much better than did the common types, although all varieties wear better at higher clipping as opposed to a lower height.

NATURAL PRODUCTIVITY

A study by Gosz et al reported in the "late summer" issue of Ecology analyzed the nutrient content of litter fall. Although the area studied was forested, the same principles would be involved in prairies (lawns). Nearly three tons of plant material were produced per acre annually, with foliage contributing about half of this total (twigs, etc., -- even insect frass, -- the remainder). The nutrient content of this litter was approximately 140 lbs. per acre, the equivalent of the value of fertilization generally recommended for lawns. Obviously if litter (clippings) is removed, considerable nutrient loss occurs. Nitrogen was the most abundant mineral in the litter, followed by calcium, potassium, manganese, magnesium, sulfur, phosphorus and other trace minerals. The first three of these (N., Ca., K.) accounted for some 80 percent of the total mineral yield. These nutrients, of course, are the chief ones generally replaced by fertilization and liming.

### TURFGRASS TOUR

Wednesday, November 1, was devoted to a tour of southern Florida facilities, research grounds, and sod production fields, as part of the turfgrass division meetings held in conjunction with the annual meetings of the American Society of Agronomy. Particularly impressive is the exuberant growth of southern Florida, with condominiums, hotels and other structures springing up everywhere. Many new golf courses are being developed. Quite a demand should exist for turfgrass services in Florida.

At the Plantation field station, south Florida research was reviewed. The "fertigation" plots were exhibited, in which on an average one half pound of soluble nitrogen per week is applied with the irrigation water. Urea is the source. Dry ureaform applications were used as the check. At time of inspection the dry applications appeared fully as attractive as nitrogen applied in irrigation (and should certainly be simpler).

A rather intensive breeding program is now underway with southern turfgrass species. Several st. augustine strains appear to have some advantage over the conventional grass (marketed mostly as sod). Scott's 1081 is quite resistant to chinchbug and very vigorous. However, the new Floratam, from Texas sources, is even more resistant to chinchbugs, but coarse in texture; it is the only strain resistant to SAD virus, which is very troublesome in Texas and Louisiana. The name Floratam is derived from Florida (Flor) and Texas A & M (tam).

FA-40 is a dwarf st. augustine also out of Texas, likely to be released but not yet named. It thrives on low maintenance; when kept at 1½ inches it perhaps needs mowing only once per month. However it is susceptible to chinchbug, although reasonably resistant to SAD virus.

Dr. Horn reported increasing interest in zoysia, now that controls are available for nematodes and billbug, formerly banes in the keeping of zoysia.

Although bentgrasses are hardly to be recommended for southern Florida, occasionally they are used in winter seedings. On one golf course a strain of bentgrass was found that persisted well through the hot Florida summer, designated ARC-1. However, the ARC-1 planting did not look good at time of inspection. Penncross was more attractive. Highland and Exeter colonial bentgrasses have been tried, but are not well adapted to the extreme heat of southern Florida.

In the afternoon one of the Ousley sod farms was inspected (mainly st. augustine, but some bahia). An immense acreage (5,000 acres) is involved, mostly in non-certified types which are marketed at less than 3 cents per square foot. On the flatland of the northern Everglades irrigation is subsurface through the soil, achieved by merely raising water level in the irrigation ditches. Sod is cut mechanically, with strips between the rows left to regenerate new sod. The sod is machine-cut but hand-lifted.

PROCEEDINGS APPEAR

The Institute received in November the Proceedings of the 10th Annual Turfgrass Sprinkler Irrigation Conference, held annually in California. The Proceedings furnishes an up-to-date review of "the state of the art" in the irrigation field.

Many of the papers are meant for specialists, but interesting to the generalist concerned with turf irrigation is the presentation by V. A. Gibeault, Extension Environmental Horticulturist, Riverside, entitled Guides For Developing an Irrigation Program. Dr. Gibeault pulls together information on infiltration, percolation, water availability and turfgrass needs.

Gibeault notes that heavier soils contain about two inches of available water in the top foot of soil, sands no more than half as much; in addition there is over two inches of "unavailable" water in the heavier soils, only a fraction of an inch of the same in sand. Gibeault indicates that the familiar turfgrasses (bluegrass, fescue, bentgrass) have a rooting depth of about 6 inches to 1½ feet, while annual bluegrass is only 1 to 4 inches. Tall fescue and southern grasses are said to root 1½ feet up to 8 feet deep.

Gibeault offers a formula for calculating water needs, considering radiation, temperature, wind and humidity. For the Santa Ana (southern California) location turfgrass is noted to use around 40 inches of moisture annually, ranging from less than 1 inch per month in mid-winter to over 6 inches in mid-summer.

BLUEGRASS REVIEW

The November issue of Western Landscaping News carried a "special report" on "Kentucky Bluegrass Blends For Sod", by Drs. Funk, Dickson and Ahmed, Rutgers University. This is one of the few knowledgeable reports on the mechanical blending of new bluegrass cultivars to provide the genetic diversity hallmark of the old natural Kentucky bluegrass. The authors voice twelve conclusions about blends, noting that performance varies from place to place and according to care.

Merion is criticized as being too aggressive (until stripe smut lessens its competitiveness). The authors find no difficulty combining the finer-leaf cultivars such as Fylking and Pennstar with broader leaf sorts such as Baron and Sodco; indeed they recommend this. They find Newport (common) to be a poor competitor and useful only as a diluent reducing the cost of a seed blend. One general conclusion of interest, -- "the average performance of blends has exceeded the average of the component varieties grown separately, especially in our longer term tests."

WEED SEED GERMINATION

Research reported by Taylorson, USDA, in the September Weed Science, indicated that various weeds (including chickweed and some annual grasses often troublesome in new lawns) undergo an initial dormancy in the seed, which after some months is reversible by light, after which interval the seed again becomes totally dormant and unresponsive to light.

### NEW SLANT ON TURF DISEASE

Endo and Colbaugh, reporting in the summer issue of California Turfgrass Culture, suggest that serious turf diseases, such as Helminthosporium, are weak competitors in the microbiological ecosystem. When microbiological activity is high, disease tends to be depressed. Of course microbiological activity is highest when there is litter (clippings) for micro-organisms to feed upon, adequate humidity, and a warm temperature. Noting that Helminthosporium spores germinate scarcely at all on moist debris (while germinating almost fully on washed and sterilized debris), one begins to wonder about the value of familiar recommendations for thatch removal and regular fungicide application?

### CONTAMINATION OF BLUEGRASS SEED FIELDS

Studies conducted at the University of Minnesota, on the northern Minnesota bluegrass seed fields where Park is produced, were reported to the Agronomy Meetings by Bertges and Elling. Cores of soil 8 inches deep were sectioned, and even the deeper layers found to contain live rhizomes of bluegrass and horsetail buried years before by cultivation. Apparently these rhizome fragments stay alive for many years, and along with adventive seed offer a source of contamination to seed fields planted to a particular cultivar.

### GRASS VARIETIES REVIEWED

The October issue of Western Landscaping News carried a "special report" by Dr. Butler of Colorado entitled "Choosing Kentucky Bluegrasses For Turf Areas". Most of the familiar varieties on the market today are mentioned in the report, with discussion of quality, mowing height, and characteristics of the varieties. The story should prove useful in further familiarizing the public with the multitude of variety names now outstanding.

### BLUEGRASS CHROMOSOME DIVERSITY

Research by Wilton et al was reported to the Crop Breeding Section at the American Society of Agronomy Meetings in Miami, entitled Chromosome and Genetic Constancy in a Poa Pratensis Cultivar. The research was conducted at Penn State University and Beltsville. The tremendous pool of variability within Kentucky bluegrass is reflected by the wide range of chromosome counts encountered in seed from a recognizable cultivar. Diploid counts ranged from as little as 35 to as high as 105, with many intermediates in evidence.

### NITROGEN AND DISEASE

The September Newsletter from Kellogg Supply dug back into the records so far as the late 1950's for research reports relating disease and pests to nitrogen fertilization of turfgrass. Creeping bentgrass frequently evidences less dollarspot damage where sewerage fertilizer is used. Nematode populations appeared to decrease, too, probably because conditions are made more favorable for nematode predators.

ANNUAL-PERENNIAL RYEGRASS DISTINCTION

Research by Nittler and Kenny, reported in the Nov.-Dec. Agronomy Journal, deals with "Distinguishing Annual from Perennial Ryegrass". Because the fluorescence test for distinguishing seeds of annual and perennial ryegrass is not always reliable, other means were sought. The technique suggested seems rather cumbersome (growing the seedlings for some days under varying temperature regimes, and judging them on morphological characteristics). The main feature seems to be encouragement of stem formation, then judging whether the leaf is rolled or folded in bud. The scheme might offer confirmation of the quicker fluorescence test, but may not be so "practical a method" as the authors hope.

MIDWEST FIELD DAY REPORT

Bill Daniels, Purdue University, presented a brief summary of research being viewed to those attending the September 25 Field Day. Much of the report deals with soil rootzone formulations and other subjects familiar to the Purdue program. The rating of bluegrass varieties will be of interest to members, and was presented as follows: (rating is from 1 best, to 9 poorest)

- 1 -- Sodco, Pennstar, Sydsport, Nugget
- 2 -- Fylking, Merion
- 3 -- Primo
- 4 -- Prato, Newport
- 5 -- Park, Campus
- 6 -- Windsor, Geary
- 7 -- Kenblue, Cougar, Palouse
- 8 -- South Dakota common
- 9 -- Delta

FATE OF FERTILIZER NITROGEN

A report by Illinois researchers to the Agronomy Meetings discussed the chemical fate of radioactively marked nitrogen applied to field plots. One quarter or more of the nitrogen remained in the soil after the first growing season, and half was still there after five years. Almost all nitrogen was fixed in organic combinations. Apparently fertilizer nitrogen is quickly fixed by soil and vegetation.

PENNCROSS BENTGRASS DISCUSSED

A research report by Ralson and Daniel, in the Nov.-Dec. Agronomy Journal, deals with the rooting of Penncross creeping bentgrass under the controlled water-table system known as PURR-WICK. As might be expected, temperature exerted a profound affect upon depth of rooting; Penncross rooted slowly but deeply at around 60 degrees F., rapidly but shallowly at around 85 degrees F. Best depth of water-table varied with the coarseness of texture of the sand used in the system, the deepest rooting of all (at the lower temperature) being in fine sand with a deep water-table.