B E T T E R L A W N - - H A R V E S T S

Published periodically by
Better Lawn & Turf Institute

Rt. 4, Marysville, Ohio 43040
Phone: (513) 642-1777

Volume 18, No. 3

October, 1971

PRESIDENT REPORTS:

NEW SUPPORT FOR LAWN INSTITUTE

After considerable effort on the part of Lawn Institute officers and others in the Industry, we are happy to report that major producers of proprietary grasses will support The Lawn Institute to the extent of 20¢ per cwt. on seed sold.

Since the inception of The Lawn Institute most of the support has come from public varieties. In the last few years proprietaries have been gaining rapidly so it is important to have their backing. Payment for the proprietaries will be handled through a bank in Marysville and amounts paid will be held in confidence.

To start with, the plan is to accept support from only proven varieties, - such as Fylking, Nugget, Jamestown, NK-100, Pelo, Manhattan, Highlight, Penncross, Ruby and others that are widely adapted and generally accepted. To determine the varieties that qualify for the program a "Variety Review Board" has been established to evaluate and accept or reject. This "Variety Review Board" will be made up of the following:

Doyle Jacklin	Jacklin Seed Company
Howard Kaerwer	Northrup King and Company
Dr. Johnny Thomas	Rudy-Patrick Company
One member from	A merchandising company

Dr. Robert Schery will also sit in on meetings of the "Variety Review Board" to counsel and advise. The first meeting of the Board is being planned to be held in conjunction with the Western Seedsmen's Association meeting in Kansas City, November 6.

We think this is an important step forward. The Lawn Institute can give proper recognition to new varieties and also be assured of more funds with which to expand overall promotional efforts for improvement of lawns and turf by the use of better grasses.

Gordon O. Newton, President
Sedona, Arizona

INSTITUTE MEETING NOVEMBER 6, 1971 (Kansas City Club, Room H, 1:30 p.)

President Newton announces a convening of the Institute Board, and the Variety Review Committee, to be held just before the Western Seedsmen's convention in Kansas City, Saturday, November 6. Members are cordially invited.

STORY HITS JACKPOT

"Lawngrasses" was title of a story done for the September, 1971 Flower and Garden magazine. The trend towards proprietary varieties was discussed, and a table (with color background) included listing several of the bluegrasses, fine fescues, bentgrasses and perennial ryegrasses that are currently becoming available. Close-up illustrations of Fylking and Baron bluegrasses, and Penncross bentgrass, rounded out the illustrative material.

We were especially pleased that the magazine saw fit to retain as a final paragraph, an offer to send literature to anyone mailing in a self-addressed, stamped envelope to the Institute offices. This was like "hitting the jackpot", for Mrs. Rush was swamped with over 200 requests daily after the story appeared. Because many respondents asked questions, answering often becomes time-consuming, Dr. Schery having then to dictate personalized replies. Nevertheless, on the whole this is an inexpensive means for reaching a wide segment of the public.

The response points out also, that the seed industry is perhaps remiss in publicizing its retail outlets. Many inquiries ask where the new cultivars can be purchased, the parties having been unsuccessful in locating sources.

1971 TURF ANNUAL

Park Maintenance magazine published in its July issue, its annual "Turf Research and Irrigation Annual". Some years ago this provided a fine general summary of turfgrass research, but in recent years has dwindled in importance as more sophisticated means of communication about turfgrass research have developed, especially with respect to state programs and conferences. The discussions are too brief and disorganized to provide an easily comprehensible resume, although they do mention some of the current interests in turfgrass circles.

With such abbreviated data, it is sometimes difficult to judge the meaningfulness of some of the results reported. But the summarization does call to one's attention miscellaneous information that may not have been available through other sources. For example, quoting some University of Massachusetts research on leafspot disease tolerance by bluegrasses, a table inserted in the annual rates Sodco, Pennstar, Sidsport and Nugget as the most disease-tolerant bluegrass varieties, followed closely by Fylking and Merion. Least tolerant was Delta and South Dakota common.

Sources of information are identified by code numbers, keyed back to a listing at the beginning of the summary. The Institute is mentioned as one of forty contributing authorities.

NATIONAL LISTING

The Better Lawn and Turf Institute has been listed along with numerous prestigeous societies and associations, in the "1971 Directory of American Horticulture", published by the American Horticultural Society and offered for sale at $5.

TIME-LIFE LAWN BOOK

The "Lawns and Ground Covers" volume of the Time-Life Encyclopedia of Gardening saw publication in early summer. The volume is distinguished particularly by a wealth of illustrations in full color and numerous drawings (tinted, and artistically handled). The price of $4.95 is not high for a hardcover book so elaborately illustrated, even though only 160 pages in length.

Chief author is horticulturist J. U. Crockett, seconded by "the editors of Time-Life books". That the latter were very active is proven by visits to the Institute on several occasions during preparation of this book, and by the long series of people and institutions consulted. The Institute is cited among acknowledgements, and Dr. Schery's, The Lawn Book among the references. With such thorough-going interviewing in all parts of the country the book is technically accurate and up-to-date in the information that it gives. Institute members will be pleased that many of the present proprietary varieties receive mention.

The book is devoted as much to ground covers other than grass as to turfgrass, and, indeed, "how to" information on lawn planting and care comprises surprisingly little of the 160 pages. Interspersed through the text are various "asides", on such things as the uses of dandelions, the growth of bamboos, the history of mowing, and so on. For some, these side discussions may add interest, but they are distracting from the main theme (which one would suppose is to be lawn establishment and care?). Indeed, in spite of conspicuous headings to the side of the wide-margined pages, the book impresses one more as an artistic effort than as a practical instructional manual. It is almost necessary to read the book through in order to zero in on a specific problem.

The book contains five chapters, the first, "The Lore of Lawns", devoted to extraneous matters including a "picture essay". Chapter two is entitled "How to Take Care of Your Lawn' and includes another "picture essay". Chapter three is devoted to "Repairing Old Lawns and Building New Ones", and contains much of the meat of the book. About 100 pages including tables and illustrations are devoted to these three chapters. The remaining chapters relate to ground covers other than grass, and an "Illustrated Encyclopedia" which lists plants alphabetically according to genus.

The book should be instrumental in whetting lawn interest, for it is most attractively presented. Although the information contained is useful and in general technically accurate, likely the book will not be so effective an instructional manual as some others on the market which, if not so elaborate, do hit more directly on target. Perhaps the book suffers from a bit too much "talent", with emphasis on presentation rather than content? The text, however, is easily read and should be understandable to even the most amateurish lawn custodians. The volume is an attractive addition to the wealth of books appearing these days that encourage lawn and garden activity. It thus should serve well to publicize the home lawn, lawnseed and helpful lawn products.

SOUND ADVICE

The cooperative Extension Service of New York State advises in its Garden Guide, "There is no such thing as a seed bargain. As with everything else, you get what you pay for --- If you are starting a new lawn or trying to improve an already established lawn, stay away from cheap seed. ---" Good advice.

PRESENTATION IN CANADA

September 28-29 Dr. Schery was invited speaker for a meeting of the Ontario Sod Growers Association, courtesy of Maple Leaf Mills, Toronto, Ontario. The Institute presentaion, following business meeting and supper, included distribution of the reprints Lawngrasses from Flower and Garden, Grasses For Turf from Proceedings of 30th Oregon Seed Growers League Meetings, and a showing of slides (new cultivars, seed production in the West, Turfgrass in England). High points of discussion were the trend to proprietary cultivars, increasing opportunities to tie in with the ecological movement, promotional necessities in the years ahead, possible turning point in the fortunes of artificial turf, and some of the newer research recommendations on sod handling.

INDUSTRIAL MAINTENANCE STORY

Arthur S. Green has called upon the Institute from time to time, for material which he can quote in his stories done for various trade magazines. Once such item appeared recently in "The Painting Contractor", referring to turfgrass color (and painting where needed), especially of grassed athletic fields shown on TV. Green writes, with respect to turf coatings, "Most of the newer turfgrasses --- are a deep bluish shade of green, typical of grass that has received generous nitrogen fertilizing, says Dr. Robert W. Schery, Director of The Lawn Institute --- Shades of grass vary in accord with seasonal moods --- Deep shades of bluegrass in early spring to the lighter grass shades seen through summer ---". Mr. Green quotes the Institute directly, e.g. "Lawn attractiveness is not solely related to color --- texture, and degree of fineness of leaf blade pattern, is equally of concern --- no matter how true the colorant applied to a coarse grass such as tall fescue will not be able to hide its gross texture and climpiness. The best color tinting effects are made on fine textured grasses such as the Kentucky blue, fine fescues, the bents, the bermudas and perennial ryegrasses."

BLUEGRASS EXTOLLED

The August issue of the Golf Superintendent carried an item by John Dolan, golf course superintendent, entitled "A Bluegrass Experience". This New England superintendent inherited a course replete with Poa annua, but noticed how well Kentucky bluegrass was doing in the roughs. Mainly by insisting upon higher cutting of the fairways he was successful in encouraging Kentucky bluegrass to defeat the annual grass. He overseeded regularly, with the mixture containing Merion and Fylking bluegrasses as well as common. Ureaform formaldehyde was applied abundantly. If any member is interested in the details of this experience, we will be glad to photocopy the discussion for you. It seems in keeping with experiences we have heard elsewhere, marking a trend back to bluegrass fairways.

INJURIES ON ARTIFICIAL TURF

The Western Landscaping News carries an announcement from a Toronto meeting of a study by a University of Washington medical student showing that it is significantly more dangerous for athletes to play on artificial cover than on real grass. An average of two players were injured every three games on artificial turf, whereas there was only one injury in every two games on grass. Unexpectedly, artificial cover was more hazardous when dry than when damp.

FREE PUBLICITY FOR INSTITUTE

The August, 1971 issue of the Iowa Golf Course Superintendents' "Reporter" (Charles Calhoun) printed the following item:

"BOKAYS TO BOB SCHERY AND THE LAWN INSTITUTE

> "I am in receipt of a fine list of material on turf items from Dr. Robert Schery, Director of The Lawn Institute, for press release. Time and space does not permit getting these into the Reporter other than as exerpts, outlines, or notes. However if you will let me know, I will have them duplicated and mailed to you at 10¢ a sheet --- Top Turfgrasses 40¢; Hall of Fame Lawngrasses 10¢; Low Bluegrasses May Combine Well With Bentgrasses 10¢; Fescues For Low Maintenance 10¢; New Lawn Varieties Can Be Clipped Close 10¢; Why Lawnseed Mixtures? 10¢; Lawn and Trees Vie For Fertilizer 10¢."

GARDEN CARTOON BOOK

The Men's Garden Clubs of America has sponsored a 16 page cartoon book designed for children, entitled Plants, How They Improve Our Environment. Printed in color, on inexpensive newspaper stock, unit price runs only a few cents in quantity orders. The idea behind this move is to place these cartoon books in the hands of elementary school children, to create a greater awareness of gardening and its ecological value. Lawns and grass are discussed chiefly by implication, but the booklet cannot help be advantageous to all facets of gardening as it creates an awareness in the child of the importance of plants in his life. Plants, How They Improve Our Environment can be obtained from the MGCA, 5560 Merle Hay Rd., Des Moines, Iowa 50323. If you wish a single copy for examination, send 25 cents.

FESCUE STORY APPEARS

Fescue Facts was the title given an Institute story appearing in the August issue of Flower and Garden magazine. Reprints have been made and distributed to membership. Six photographs taken at The Lawn Institute constituted (with captions) about half the page space.

The story opened explaining what the fine fescues are, and why they are good-looking. Referring especially to the photos, it was clear that fescues are also well adapted to tough growing sites (although for lawns they do best in hot weather if fertilized with ureaform rather than strong nitrogen sources). Fescue capabilities as a nursegrass are mentioned.

"KENTUCKY BLUEGRASS: TURFGRASS PAR EXCELLENCE" REQUESTED

Mr. Burns S. Ray, of the Mays Seed Company, requested of the Institute:

"Would you be able to send us one hundred copies of 'Kentucky Bluegrass: Turfgrass Par Excellence' -- We think that it is a very good article and would like to give it to our nursery accounts."

COLUMNIST OFFERS INSTITUTE LITERATURE

Doc Abraham, syndicated columnist in New York, has offered an Institute reprint to the readers of his column, as well as on his TV broadcasts. Three thousand copies were sent to George, for mailing at no cost to the Institute. Combined with similar offers in the Milwaukee Sunday Journal and numerous other papers, and Flower and Garden magazine, demand for reprints this autumn season has been unprecedented and kept Mrs. Rush a very busy office manager attending to all requests (as much as 200 daily in the office mail alone).

AVANT GARDENER QUOTES INSTITUTE

The June issue of Avant Gardener (Hort. Data Processors, N.Y.) quotes the Institute on page 2, viz.: "The explosion of turf technology has made 'lawn landscaping' a whole new ball game, says Dr. Robert W. Schery, Director, The Lawn Institute -- it has become feasible to turn more attention to the esthetics of a lawn. New 'elite'grass cultivars vary in color, texture, height and density of growth, -- Two excellent aids are the leaflets on new grasses and lawn renovation offered by the Lawn Institute, free for a self-addressed and stamped envelope. Incidentally, there seems to be a trend toward deeper color in the new grass introductions. The Kentucky bluegrasses 'Baron' from Holland and 'Nassau' from Rutgers University, 'Jamestown' fine fescue from the University of Rhode Island, and Rutgers' 'Manhattan', a fine-leaved perennial ryegrass, all have dark green color, which can be valuable for cooling effect and contrast in landscape design."

HOME GUIDE PUBLISHED

An excellent new booklet with color cover and 42 artistically arranged pages has been published by the New York State College of Agriculture, as "Cornell Miscellaneous Bulletin 74". It is entitled A Guide to Safe Pest Control Around the Home. The initial pages caution the homeowner about the use of pesticides and give information on proper usage. Thereafter specific charts relating to pest and disease control, arranged alphabetically by pest, by plant, and in other fashions, round out the publication. "Turf Pests and Their Control" are reviewed on pages 22-23, adjacent to the section on "Ornamental Annual and Perennial Plants and Diseases".

SCHOOL COUNSELING

The Institute has cooperated with Chronicle Guidance, New York, a firm involved with vocational guidance and educational materials. Specifically, the Institute has been asked to review the "Occupational Brief" on Landscape Gardener, and to supply an illustration appropriate to the occupation. Dr. Schery was pleased to do this as a service of the Institute, leading to the training of additional landscape gardeners the demand for which should be increasing in a nation increasingly aware of the environment and outdoor beautification.

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Two caterpillars were crawling across the grass when a butterfly flew over them. They looked up, and one nudged the other and said: "You couldn't get me up in one of those things for a million dollars!"

NEW ENCYCLOPEDIA APPEARS

A new gardening encyclopedia, authored by Donald Wyman, has been published by Macmillan. This is a large volume, and the most authoritative encyclopedia to appear since the old Seymour volume published by Wise years ago.

Wyman enlisted the aid of specialists for certain sections of the encyclopedia, including Dr. Schery of The Lawn Institute for the section on lawns (credit is given the Institute). Publication has been slow-moving, with the lawn text written some time ago. It provides good basic information on top turfgrass species, but of course cannot name the latest cultivars.

Having had a hand this landmark publication should redound to the Institute's prestige.

ARTIFICIAL TURF ARGUMENT HEATS UP

Research at Auburn University, reported in the August Weeds Trees and Turf, indicates temperature of the synthetic surface to exceed 150° F., compared to a maximum at least 40 degrees less for live grass. The researchers counsel that drills on synthetic turf be cancelled when air temperatures reach 85 to 90 degrees, and above 90 degrees all training should be stopped.

LEISURE WORLD FOUNDATION

The Institute has been invited to respond to a questionnaire, and indicate degree of possible collaboration, with a federation that terms itself Leisure World Foundation. This is sponsored by a number of other associations, including those involved with health, physical education, recreation, camping, social work, parks, athletics and even the National Rifle Association.

It is not certain how the Institute might fit into such a group, but an offer of lawn making and lawn care literature was extended to Mr. Wiltshire. Through the University of Maryland he is completing a study concerning the federation, which he will present to the national congress on recreation and parks in October, 1971. If any opportunities arise through this inquiry, members will be informed.

PRESS SEMINAR

The Institute was invited to a "press seminar" on Grass, The Planet's Plant, sponsored jointly by the American Society of Landscape Architects Foundation, and Jacobsen Manufacturing. The program is said to "approach the subject of GRASS from every facet -- showing its importance to man, his well-being, and survival. Speakers from the United Nations, Governments, the Smithsonian, and from various disciplines will explore GRASS -- in man's work, play, environment, culture, his peace of mind, and in the very future of his planet." A nice recognition for growing of plants often overlooked in landscaping.

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America has become so tense and nervous it has been years since I've seen anyone asleep in church -- and that is a sad situation.

(Norman Vincent Peale)

NEWSPAPER SUPPLEMENT

This year again the American Seed Trade Association will be cooperating with other trade groups in the issuance of a spring gardening supplement sent to thousands of newspapers nationally. The lawn and turfgrass division of the American Seed Trade Association is co-sponsoring the 1972 issuance. Steve Hart, in behalf of the ASTA, called the Institute to ask for services in the preparation of several illustrated articles on the "latest in lawns".

This gardening supplements fits Institute objectives very well, widely informing the public about good lawns and the means for having them through this large-scale publicity effort. No costs accrue to the Institute other than staff time and drawing upon the photo library. This is an effective way of reaching a widespread audience, in association with other respected gardening groups, and we are pleased that the Institute was once again invited to participate.

SEED RECOMMENDED FOR LONG ISLAND

The September 1 Garden Guide, issued by the Cooperative Extension Service of New York State, from Mineola, advocates these seeding mixtures: In full sun, at least 55 percent Kentucky bluegrass, the remainder fine fescues and a "small percentage" of improved ryegrass. For dry soils or shade, at least 65 percent fine fescue, along with Kentucky bluegrass and a "small percentage" of improved ryegrass. Several varieties of each kind are suggested, in order to provide better resistance to disease.

STORY USED

Planting A New Lawn appeared, with Institute credit in the September 10 issue of Seed World. The story opens, "Starting a new lawn is not so troublesome as it once was. Vastly improved equipment now mechanizes the effort, and a fine assortment of bluegrasses, fescues, bentgrasses --- even turf type perennial ryegrasses -- is here." Specific measures and grass varieties are then discussed.

INSTITUTE BOOK REVIEW

The review of Principles of Turfgrass Culture, by John Madison, California, appeared in the June issue of HortScience, under the authorship of Dr. Schery with credit to The Lawn Institute. We will be pleased to furnish a photocopy to anyone interested. The review is more detailed than was an earlier summarization made for Harvests. Dr. Schery concludes that the Madison book is " --- probably the finest summarization about turfgrass and its care yet to have appeared."

"BY WORD OF MOUTH"

The following is from one of the hundreds of letters received as result of autumn press kit. It indicates how the word spreads: "Please send me the reprint about lawn renovation, -- I was advised to send for one -- when I attended the recent annual lawn clinic at Whitenall Park, Milwaukee ---."

PRESS KIT APPRECIATED

Dr. J. F. Shoulders, Extension Specialist, Turf, of the Virginia Polytechnic Institute writes:

"Would you please send me another --- 'Latest Public Information on Better Lawns'?

"I appreciate receiving these information packets and find that the information is used frequently by newspapers especially in our area. In fact, --- last Sunday you were quoted with very high compliments in the Roanoke, Virginia, Times.

" --- I gave my last packet away to a person I thought would make good use of it."

INSTITUTE STORY IN TURF BULLETIN

The Massachusetts Turf and Lawngrass Council's "Turf Bulletin", summer issue, carried the Institute by-line story, Lawns Slow Pollution. The opening lines should be familiar to members. "Those delightful bluegrass, fescue and bentgrass plants in your lawn are not only pretty, but reduce rather than add to water pollution." We are pleased to have had Institute usage in so prestigeous a turfgrass journal.

EDITORS REQUEST PICS

The covering letter with the press kit offered editors pics. A number have requested them for use in newspaper garden sections. Paul Young, Cleveland Press is typical. He writes:

> "I would appreciate having a set of the photos you say are available --- As usual, /the press kit/ is informative and useful, --- The grass varieties /reprint/ was especially helpful to me, filling in some points on which I was a bit hazy. Keep up the good work."

RESPONSE FROM "LAWNGRASSES"

Requests continue to pour into the Marysville office. May we share this one with you:

> "I am in the process of making a lawn tennis court. --- The new grass which interested me was Penncross, which is especially for bowling and putting greens.
>
> "I would appreciate any advice or brochures which you may have --- The tennis court will be used for my own pleasure and will not have to take the abuse of a public court."

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Sign in a factory supervisor's office: Caution -- be sure brain is engaged before putting mouth in gear.

ARTIFICIAL TURF INSPECTED

As part of the turfgrass tour during the Agronomy Society Meetings in New York, visit was paid to the athletic field at Hofstra University, the first Astro-turf installation in the country. The gentleman in charge of its upkeep discussed its quality from the maintenance standpoint (he is not involved with the athletics nor injuries sustained). It is interesting that he had little good to say about the installation. Its maintenance has been a continuous problem. The "turf" is not fixed, but stretches and shrinks, and yard markers are perpetually in error (some of them bowed). The old paint does not remove well, and new lines become confusing. The 50 yard line has built up (from paint additions) until it is like a concrete ribbon across the center of the field. Patches have had to be made in several places, and there have been numerous instances of water and "bubbles" under the turf. It has been very difficult to clean the field (the local fire department has on occasion been induced to wash it off with high-pressure hoses). The frequent restretchings that are needed must be done by a special firm from New York City, and the cost is about $20,000 each time (the field is still under warranty, so procedures recommended by Monsanto are followed; but Monsanto has "quit answering the telephone", so frequent have been the complaints). The biggest maintenance headache has been kicking onto the field of pea gravel used for drainage at the periphery. No brush, sweeper, or vacuum has been found which will pick up this gravel, which instead must be hand picked by student labor at $2.00 an hour, in an essentually continuous operation. There are frequent discolorations. It was the superintendent's opinion that maintenance costs without the warranty would be much higher than for a grassed field. On the other hand, the field is made available on a fee basis for high school and other games when Hofstra is not itself using the field, netting a certain amount of income that would not be available from a grass installation that could not be so heavily used.

INSTITUTE RELEASES FOR THE QUARTER

The following custom stories have been prepared, were published, or have been reprinted for distribution during the quarter.

Fescue Facts, Flower and Garden; Grasses For Turf, Oregon Seed Growers League; Slow-Release Fertilizer For Lawns, Fertilizer Solutions; Lawngrasses, Flower and Garden; The New Lawn Varieties, Good Seed Deserves a Good Start, Time to Prevent Crabgrass, New Grasses Have Bright Future, Revive Tired Lawns, Lawns Fight Pollution, Quick Lawn Greening, ASTA Supplement; Try Autumn For Lawn Renovation, Fertilizer Solutions; New Trends in Turf Maintenance, American Cemetery; Turfgrass Trends, American Cemetery; All-Purpose Fertilizer, American Rose Annual; Bluegrass-Bentgrass For Fairways, Golf Superintendent; Anti-Pollution, Ward For Weeds, Fertilizer Solutions.

LAWN BOOK DUE FOR REVISION

One of the Institute's more important ties with "authority" since 1961 has been the recognition prominent horticulturists have given Dr. Schery's The Lawn Book, currently out-of-print. Negotiations are under way with Macmillan for an expanded revision of the book, including up-dating of information and listing of the newer cultivars. It is hoped work on the revision can proceed rapidly enough to permit a late 1972 publication date, with extensive promotional campaigns in autumn of '72 and spring of '73.

TURFGRASS RESEARCH REPORTED AT AGRONOMY MEETINGS

The "Turfgrass Management" division of the American Society of Agronomy is the forum for reporting turfgrass research nationally. The information presented is a fair cross-section of research interest throughout the country, most of which will sooner or later be reported formally in the technical journals. It is neither possible nor necessary to assemble data from the presentations (most of which will eventually be published in finalized form), and attendance is chiefly of value for mingling with the leading researchers, and attending the full day turfgrass tour that has become a feature of the meetings (this year it encompassed Long Island and northern New Jersey, viewing mainly athletic fields, golf courses, and Rutgers University research grounds). A brief resume of the presentations may be of interest to members, as an indication of current research interests.

Florida researchers are looking into the usefulness of pre-emergence herbicides on golf green bermudagrass, especially in relationship to toxicity and ability to control Poa annua without inhibiting overseeding. Most treatments have been injurious to the permanent bermudagrass, but certain combinations of herbicide treatment with generous topdressing has helped restrict Poa annua without appreciably injuring the bermuda or ryegrass winterseedings made into the topdressing.

At the University of Georgia studies have been completed on the physiological condition of bermudagrass cuttings related to environmental factors. As might be expected, light intensity and temperature were more influential than day length in influencing response of the cuttings.

A study in Michigan on the influence of arsenate as it interrelates with the phosphorus and soil pH, exhibited several rather involved correlations. One general observation was that increasing arsenic concentration decreased plant growth, regardless of the form in which the arsenic was applied.

Rutgers people reported upon hybridization of Kentucky bluegrass with Canada bluegrass. Almost all of the hybrids seemed less adequate than Kentucky bluegrass itself for turf purposes, but the possibility exists that extensive screening might find a particular hybrid of value for some specific purpose; at least the possibility exists.

Purdue people are moving in the direction of completely controlled soil environment for turf maintenance, the latest wrinkle of which is using pumps to suck moisture out of and through the soil when this is excessive.

Investigations at the University of Missouri involved nutrient balance of several bermudagrass cultivars normally considered winter hardy; but freeze tests indicated that hardiness of certain varieties did not correlate well with the general performance of these strains as they are used practically.

Research is underway at Purdue to determine the toxic level of arsenic in various soils; as might be expected arsenic was more tied up by muck than by other soils, and was more easily extracted from sandy mixtures than from heavier soils.

(Continued)

TURFGRASS RESEARCH REPORTED AT AGRONOMY MEETINGS Continued

At the University of California studies were undertaken to distinguish between perennial and annual forms of Poa annua under climatic conditions prevailing there. Tiller and adventitious root numbers were useful, but most morphological characteristics valueless. One interesting observation was that seed from the annual forms seemed to have a post-harvest dormancy requirement, while seed from the perennial types germinated immediately.

Studies at North Carolina State University characterizing soil conditions in "poor" compared to "good" greens, pointed chiefly to differences in soil density, particle size and porosity as being influential.

Virginia researchers investigated influence of perennial ryegrasses, redtop and fescue on the establishment of Kentucky bluegrass. They found considerable competitiveness, but this was due to aggressive growth and morphological factors rather than to chemical inhibitors. Ryegrass was much more competitive than redtop or fine fescue, and the researchers conclude that not over 15 or 20 percent of perennial ryegrass by weight should be utilized as a bluegrass nurse component.

Ohio State University research investigating phosphorus influence on trace elements was quite involved, and lead to the conclusion that tissue analysis was not necessarily a good indicator of the physiological situation.

Research at the University of Maryland inquired of Penncross bentgrass response at differing soil temperatures and rates of nitrogen fertilization. In general coverage was more dependent upon soil temperature than upon nitrogen rates, being slow at cool temperatures and rapid at normal summer temperatures.

Laboratory research conducted at Ohio State University indicated that electrophoresis exhibited some material deficiencies for distinguishing between Kentucky bluegrass varieties.

Michigan studies dealt with the composition of and biological disappearance of thatch. The research confirms that fresh clippings are not so important for thatch as are the more lignified plant parts, including roots and to a lesser extent stems. Fine fescue thatch was more resistant than that of creeping bentgrass, and creeping bentgrass greater than Kentucky bluegrass. Speeded biological degradation of thatch proved possible in the laboratory, by treatment with certain enzymes and other substances.

The Scott Company's study on lime and phosphorus influence on Windsor bluegrass suggested that on some acid soils liming was inadvisable. Other studies on centipedegrass in the greenhouse showed an interrelationship between grass selections and fertility levels.

Research at Pennsylvania State University indicated some value in "isoenzyme techniques", for distinguishing between Kentucky bluegrass cultivars. An electrophoresis technique is used.

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TURFGRASS RESEARCH REPORTED AT AGRONOMY MEETINGS (Continued)

Research at Ohio State University discovered greatly varying abilities to produce tillers and rhizomes in differing bluegrass cultivars. Under certain growth conditions rhizome production decreased in the following order Windsor-Belturf-Merion-Nugget, but tiller production was in the order of Belturf-Merion-Nugget-Windsor. Nugget apparently is a poor rhizome producer, and its response is not affected by photoperiod (as seems to be the case with many other cultivars). In general it appears that tillering and rhizoming are inversely correlated, the situation being a case of whether a branch bud produces an upright or horizontal "branch".

Breeding work at Rutgers suggests that selfing of Kentucky bluegrass is less likely to give valuable new selections than crossing. Inbreeding depression was noted.

Radiation produced mutants on vegetatively propagated bermudagrass, in a study at Tifton, Georgia. The frequency of useful mutants was small compared to the species crosses that yielded the Tifton hybrids, but is is possible that extensive selection might turn up an improvement.

Stomatal density and water use by Penncross bentgrass was studied at Michigan State University. Little difference was noted between highs and lows within the normal range of temperatures. Water use increased as much as 53 percent as mowing height increased. Infrequent irrigation reduced water use, but increased stomatal density. Water usage and extent of cover correlated positively.

Mercury contamination of streams adjacent to golf greens was studied through the agency of Malinckrodt Chemical Company. Although there were insufficient replications for complete assurance, indications were that mercurials and other heavy metal fungicides applied to fine turfs remain more or less fixed to the soil there.

Florida research indicated that herbicides applied to the surface of golf green bermudagrasses generally reduced both top and root growth. Balan, Azak and Kerb did not significantly affect root growth, but other treatments did.

A Rhode Island study showed that the rooting of Kentucky bluegrass sod could be influenced by application of crabgrass preventers. Also, benefin, and DCPA caused the sod to have a somewhat coarser texture. Benefin, bensulide and DCPA inhibited the rooting of transplanted sod up to five months after treatment.

University of California researchers found that tagged surfactants were absorbed from the soil by the test grass (barley), but the rate and the capacity varied with the soil type.

Pennsylvania State University research indicated that IBDU could be successfully adapted to "slow-release" turf fertilization, but offered no particular advantage over existing fertilizers. Graphs indicated its particular personality of release, which was not so uniform as with ureaform.

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TURFGRASS RESEARCH REPORTED AT AGRONOMY MEETINGS (Continued)

Divot injury to turf was studied at Mississippi State University. As would be expected, fertilization and higher mowing gave faster recovery.

Research at Virginia Polytechnic Institute investigated photosynthesis and respiration in Kentucky bluegrass. Different efficiencies of photo-respiration occurred among cultivars, but the only general conclusion that seemed warranted was that it was best to maintain a high carbohydrate status in the plant by not forcing growth in hot weather.

Glen Wood, of Washington State University and the University of Vermont, exhibited examples of infrared photography as a means for perhaps picking up subtle differences in color, weed frequency, etc. in turf. Because the film must be refrigerated and will not keep well the technique seems to have little practical usefulness.

Compaction of turf over a period of seven years was investigated at Pennsylvania State University. Various treatments made in 1963 were quite effective then, but very few retained this degree of effectiveness until 1970, and infiltration rates had dropped.

Herbicide phytotoxicity on Penncross was investigated at the University of Tennessee. Moderate injury was experienced with terbutol and benefin. Sod loss was severe after 3 years of application with bensulide, benefin, bandane and terbutol.

RESEARCH AT RUTGERS

In addition to the well-known bluegrass breeding program, attention is being turned to red fescues at Rutgers University. The matter was discussed briefly, and exhibits shown at the recent turfgrass tour to Rutgers during the Agronomy Society Meetings in New York. Research indicates that present commercial varieties spread very little, but that great potential for spreading does exist within the species. A polycross from 45 entries of Chewings type fescues is ready for commercial increase and widespread testing as is a polycross from six entries of the spreading type. Some selection work is also underway with tall fescue, bentgrasses, and zoysia.

Interesting fertilization studies are reported. So far no combination of fertilization practices has been able to give bentgrass a clear advantage over annual bluegrass. Fertilization favors Kentucky bluegrass over fine fescue, and autumn fertilization encourages bluegrass at the expense of zoysia (bentgrass encroaches on zoysia with no fertilization). Moderate success has been achieved in the control of annual bluegrass with arsenate, and annual grasses with pre-emergence herbicides.

Growth regulation of turfgrass has a number of disadvantages. Mechanical thinning was disadvantageous to fine fescue in mixed turf, giving an advantage to bluegrass. Bentgrass was favored by spring thinning, adversely affected by autumn thinning.

These are but a few examples of the research program being undertaken on the turfgrass at Rutgers University in New Jersey.

OHIO TURF FIELD DAY

The first in what promises to be an annual series of field days in Columbus, Ohio, was held at the Agronomy Farm on August 2. The Field Day was under the auspices of the extension service, and supported by the Ohio Turfgrass Foundation. There were no formal lectures or discussions, but members of the Agronomy staff were on hand among the displays to answer questions. The plantings were mowed and manicured to look their best, the individual grasses and their varieties identified by signs for inspection as attendees wandered over the several acres of display. The Field Day was well attended, with perhaps a hundred or more people inspecting the plantings at the time Dr. Schery visited.

By way of generalization, in Central Ohio all bluegrasses look good at this time of year (if irrigated) and all fine fescues rather poor. There was very little to chose from among the various bluegrasses and their mixtures on display. Mixtures containing Fylking, Pennstar or Merion, whether together or in combination with other cultivars, provided attractive turf. Individual standouts among bluegrasses were Nugget, Prato, Pennstar, Sodco and most of the New Jersey experimentals; essentially as attractive were Fylking, Belturf, S-21, A-34, and even types which suffer badly from leafspot earlier in the year (Cougar, Geary, Kenblue, Palouse, Primo). Seeming a little less attractive were Newport, Campus, A-10, Southport, Arista, Windsor, Delta, A-20, South Dakota common, and others.

Fine fescues were displayed in two plantings, the younger made last autumn, the older made in the autumn of 1969. The older planting was pretty well shot through with summer "disease", showing patchiness (even the highly rated varieties). The newer plantings did not suffer such disfigurement. Ruby seemed to be holding up as well as any, and both common and C-26 were about as good. Dawson seemed attractive, but featured varieties such as Highlight, Barfalla, Pennlawn, Illahee and such like exhibited the "diseased" patchy appearance. Boreal, Erica and Arctared were fair.

The bentgrasses were all closely mowed, a type of management suited more to the creeping bents than to the colonial forms. As might be expected, some of the creeping bents then showed to best advantage, including Evansville, Congressional, and Toronto, with Penncross just about as attractive, and the colonial bentgrass such as Astoria, Holfior, Exeter and Highland would have to be rated as only fair.

Among the perennial ryegrasses Manhattan and Pennfine were looking very good, with Pelo, Brabantia, and others not far behind. NK-100 and Norlea were less distinctive, but obviously superior to common.

The coarse fescues all looked rather poor, largely because of their coarse nature. Fawn was especially coarse. K8-155, K8-184 and N6-95 were all somewhat finer and more attractive, but there was nothing in the display to suggest an advantage of coarse fescues over bluegrasses.

Varying fertilizer regimens resulted in no great differences except when compared to turf that received no fertilizer at all. Bentgrass plantings receiving 6 lbs. of nitrogen annually appeared just as attractive as those receiving higher rates, and one of the best looking received 2 lbs. of UF in April and September, one pound of soluble nitrogen June and July. Equally as good, and perhaps exhibiting some labor saving, were 4 lbs. of UF in April, July and September (or 2 lbs., April, May, June, July, August, September).

(Continued)

OHIO TURF FIELD DAY Continued

One demonstration had to do with application of phosphate at time of seeding. No information was given at the display as to natural phosphate levels in the soil at the start of the experiment, but it was evident that phosphate additions at time of seeding were helpful compared to no phosphate. However 200 lbs./A of P_2O_5 seemed about as satisfactory as 400 lbs., and certainly there was no advantage to 800 lbs. over the 400 lb. rate.

A small display of equipment was on demonstration, and, of course, extensive turfgrass plantings too young to yet be meaningful. In future years, field days held upon these grounds should he more definitive as the grass plantings mature, and as additional demonstrations are organized (for example, shade plantings are just now being seeded). A limited seeding made in the open but receiving artificial shade showed A-34 bluegrass to be aggressive, dominating Pennlawn fescue when in mixture, while Pennlawn dominated when Kenblue bluegrass was used. A-34 is supposed to be quite shade tolerant.

VARIETY TESTING

The April-September, 1971 issue of Food and Life Sciences Quarterly, New York State and Cornell University, carries an interesting view by L. W. Nittler, Department of Seed Investigations, Geneva, entitled "Nutrient Manipulation for Varietal Purity Testing". Nittler discusses the differential performance of varieties under varying growth conditions. His investigations have been promising for Kentucky bluegrass, perennial ryegrass, red fescue, timothy and bird's foot trefoil. He noticed dramatic varietal differences when 25 Kentucky bluegrass cultivars were grown in a medium lacking calcium. In another test, although Merion and Windsor seedlings are quite similar, the Merion showed up distinctly because of a red sheath when the seedlings were deprived of nitrogen.

When Newport, Windsor and Fylking bluegrasses were grown in culture solution, average tiller number per plant for these cultivars was respectively 0.1, 0.6, and 1.1, when the nitrogen level was kept low. When the nitrogen level was high, the ratios of all increased, respectively to 0.2, 1.1, and 6.5. Fylking tillering was 11 times as great as Newport and nearly twice as great as Windsor at low nitrogen levels, but 32 times as great as Newport and 6 times as great as Windsor at high nitrogen levels. Obviously Fylking responded quite well to fertilization, increasing its initial pronounced superiority quite markedly.

MORE ON DDT BREAKDOWN

A Michigan State University entomologist is reported to have investigated the break-down of DDT in the soil, making it harmless to mammals and useful for insects. The process is likened to a "built-in pesticide clean up system in the soil". Both springtails and soil mites were found able to break down DDT into relatively harmless derivatives. While the details are obscure, the end result "represents a natural decontamination mechanism." The prevalent soil mites decompose DDT faster than do the springtails.

ROADSIDE RESEARCH REPORT

Improved Establishment in Maintenance of Roadside Vegetation in Michigan appeared as research report 144, under Farm Science aegis, with date of August, 1971. Project director was Dr. James Beard, and the report summarizes roadside experimentation from 1963 to 1970. This is one of the most clearly expressed and forthright roadside seeding and maintenance bulletins having come to our attention. The 66 pages of text and tables is too voluminous to review in detail, but a few excerpts(principally from the abstract of the study) might be of interest.

Indications are that seed mixtures containing a minimum of 20 percent (on a seed number basis) each of Kentucky bluegrass, fine fescue and perennial ryegrass should be basic for roadside seeding in Michigan. Tall fescue, redtop, bentgrass, rough bluegrass, orchardgrass, bromegrass, hairy vetch, alsike clover, white clover, and alfalfa did not contribute to any great extent. Nor did cereal rye, except on sandy slopes. Best seeding rate was 80-100 lbs./A. Dormant seeding is not suggested, for fear of erosion before establishment can take place. Fertilization with at least 80 lbs./A of nitrogen, phosphoric acid and potash is recommended. Planting techniques should assure good contact of seed-with-soil. Straw, excelsior mats, and shredded wood or bark make good mulches, but nettings, glass fiber and pulp slurries failed to help much.

A few quotes from the report are perhaps of special interest: "The five /traditional/ Michigan state highway mixtures were definitely inferior to the bluegrass-red fescue-ryegrass combinations." "Cereal rye, an annual, was slightly advantageous, in slope stabilization but was detrimental to the establishment of the desirable perennial species such as Kentucky bluegrass and red fescue. Thus perennial ryegrass is preferred to cereal rye for rapid vegetative establishment and permanent slope stabilization on fine-textured soils." "The inclusion of tall fescue, redtop, creeping bentgrass, orchardgrass, bromegrass, oats, alfalfa, white clover or hairy vetch was not significant in rapid vegetative establishment and permanent slope stabilization ---".

BLUEGRASS RATINGS

On the occasion of the ASA turfgrass tour to the research grounds at Rutgers University, comprising perhaps the most extensive turfgrass variety trials anywhere, rating sheets were distributed (marked not for publication). In overall turf quality several of Funk's hybrids, most of them optioned to seed companies but not yet commercially released, rated most highly. Of the present commercial varieties Fylking was tops in the overall rating, followed closely by Pennstar. Only these, Nugget and Belturf rated the equivalent of Merion or better. A number of familiar trade names rated quite poorly, including Windsor, Prato, Cougar, Newport, Primo, Park, the various natural types, and Delta the worst of all.

NATURAL ANTI-POLLUTION

An article in the June 18 issue of Science reports upon soil being a natural sink for carbon monoxide. The lethal nature of carbon monoxide is well known, as is its presence in automobile exhaust. It is reassuring to know that turf along the roadside, building a balanced soil, helps to deplete any unoxidized carbon monoxide in the air.

FERTILIZER CONTRIBUTES LITTLE TO POLLUTION

Research by K. L. Larson, J. F. Carter and E. H. Vasey, North Dakota, reported under the title of Nitrate-Nitrogen Accumulation Under Bromegrass Sod Fertilized Annually at Six Levels of Nitrogen For Fifteen Years (Agronomy Journal, July-August, 1971), indicates that there is little danger of nitrate pollution of streams due to fertilization of sod. The authors conclude, "Results suggest apparent lack of nitrate movement and accumulation in fine-textured soils under northern climatic conditions even under high rates of continuous nitrogen fertilization." The test sod in this research had received as much as 7 lbs. of nitrogen per thousand square feet annually for fifteen years. Certainly the same conditions would prevail under sod typical of a lawn.

GRASS PERFORMANCE IN ALASKA

Studies conducted at the University of Alaska, reported by Klebesadel in the July-August Crop Science, reveal that varying the dark period can have pronounced effect upon bluegrasses, fine fescues and other species. Seedling vigor, survival, subsequent heading, and other responses were affected. Shortened or interupted nights increased growth, but predisposed the grasses to winter injury. Nugget bluegrass and Arctared fine fescue behave according to their northern inheritance compared to more southerly turfgrasses.

MINNESOTA BIBLIOGRAPHY

The University of Minnesota, Department of Horticultural Science, issued as its "June, 1971, Miscellaneous Report, 105" an annotated bibliography relating to turf care, especially as it affects highway rights-of-way. The publication is divided into 16 sections, according to subject. A list of scientific and common names and an index of authors is included. Subject areas relating to seed are: "Turfgrass Species", "Grass Mixtures" and "Grass Seed and Turfgrass Establishment". Other sections give coverage on many aspects of turf care. We are pleased that the Institute and its releases are prominently mentioned, no less than nine different publications by Dr. Schery being cited and provided resume.

PHYTOTOXICITY FROM CROWNVETCH SEED

Research reported at the Agronomy Meetings, to the "Seed Production and Technology" division, included a study on the identification of phytotoxic substances in crownvetch seed, by specialists from Pennsylvania State University and Cornell University. Extracts from crownvetch seed seriously altered germination and seedling growth of other crownvetch plants (and 47 other species). The extracts had unpleasant morphological effects on many plant parts. Several of the phytotoxic compounds were identified, most of them phenols of low molecular weight.

CARBOXIN PREVENTS GRASS DISCOLORATION

Research conducted at the University of California, Davis, indicated that application of carboxin (Vitavax, Uniroyal) prevented cold weather discoloration when sprayed on zoysia and bermudagrass. Such sprays were essentially a substitute for generous nitrogen fertilization, which produces better winter color but reduces winter hardiness.

PROTEIN IMPROVES SEED QUALITY

A study reported to the "Seed Production and Technology" division of ASA at the recent Agronomy Meetings, by researchers from Oregon State University, showed that high protein content in grain (barley, wheat) was advantageous. High protein seed can be obtained by nitrogen fertilization, but at some expense to yield and seed size. High protein seeds germinated more rapidly, developed into larger seedlings, and had a higher dry matter content when grown on soils deficient in nitrogen. Under good growing conditions (ample fertility) seed protein content made little difference.

POLLUTION FROM FERTILIZERS

Along with agricultural use of fertilizer, some homeowners have expressed misgivings about using needed fertilizer on lawns for fear of adding to stream pollution. In answer to this, a study at South Dakota State University indicates that only from one to two percent of all fertilizer nutrients applied to the land are lost in water runoff. Most of the stream pollution is caused by erosion of soil (sediment), and not by nutrients; indeed, fertilizer nutrients encourage vegetation that in turn helps control erosion.

BLUEGRASS SEED GROWING

Evans and Canode, Washington, report in the July-August Agronomy Journal on Experimentation in Seed Production With Newport Kentucky Bluegrass. Fertilization, as would be expected, increased seed yields, seed weight per panicle, and panicle numbers. Gapping (removing alternate sections of sod in the row in late summer) reduced panicle number but increased seed weight per panicle. Seed weights were increased by gapping at low fertility levels but not a high ones. Post harvest burning had variable effects. None of the treatments prevented drop in seed yields as the stand aged.

PURPLE NUTSEDGE IS ANTIBIOTIC

Studies reported by Friedman and Horowitz, in Weed Science, July, 1971, report that biologically active substances are found in below-ground parts of purple nutsedge which reduce germination of crop seeds and interfere with elongation of (barley) seed roots. Chromatographic studies indicate that the inhibitors are phenolic substances. Here is added evidence of natural inhibition of one plant by another, with a weed frequently a pest in lawns.

IS IT POLLUTION?

Study of a bay at Rochester, New York shows that salt used for deicing has increased the chloride content of the bay fivefold in the last two decades, and materially interfered with the usual spring mixing of bay waters. It is paradoxical that use of pesticides, even when having little or no effect on the environment, brings public cries of anguish these days, while the salting of city streets (which can have a much more pronounced influence) is overlooked!