

TIMELY TURF TOPICS

from the USGA Green Section

The "Yearbook of Agriculture, 1948" is entitled "Grass." It contains a wealth of information on all phases of grass culture, and a rather large portion of the text is devoted to the turf uses of grass. The title of this section is "Grass for Happier Living."

Clinton P. Anderson, Secretary of Agriculture at the time, says in the Foreword:

"Grass can make beautiful the hillsides, schoolyards, roadsides, farmsteads; in doing so it brings greater utility and efficiency.

"Beauty also brings serenity, and serenity is a quality we and the troubled world need."

The following abstracts and quotations are taken from articles in the Yearbook:

Sod Is Ideal for Playing Fields

By FANNY-FERN DAVIS, GEORGE E. HARRINGTON

This article points out the unsightliness of athletic fields not covered by turf and the dangers of injury to the players on bare ground or on cinders and other types of surfaces.

Some of the difficulties of growing grass under conditions of constant, hard usage are discussed. Three problems are listed which must be solved before satisfactory turf may be maintained:

"First, the soil must be put into satisfactory condition before planting.

"Second, a wise selection of the grass species to use must be made, consideration being given to climatic adaptation, planting season, planting method, and maintenance practices to be followed.

"Third, the recreation director and grounds manager must cooperate to meet the requirements of the turf."

Under the heading of choosing the grass the authors say:

"The grasses that will survive under turf conditions are more or less limited in the climatic conditions they will tolerate. Con-

sequently the correct selection of the species of grass may determine success or failure.

"Some of the characteristics that should be sought in selecting a grass or grasses to be used on a playing field are:

"It must develop a good root system in spite of almost constant defoliation throughout the growing season.

"Its leaves should be erect, of a good color throughout the playing season, and reasonably fine in texture.

"It should spread laterally and produce a dense, tough, wear-resistant ground cover either by the production of an interwoven mass of roots and rhizomes underneath the soil or an interwoven mass of stolons on the surface of the soil.

"It should show a marked resistance to diseases and insect attacks.

"All other conditions being equal, low-growing species and strains are more desirable than the tall strains because of reduced mowing costs."

Pointers on Making Good Lawns

By FRED V. GRAU, MARVIN H. FERGUSON

The authors list the steps necessary in building a good lawn and the steps necessary for the proper maintenance of a lawn. Fertilization, liming, mowing, watering, rolling, weed control, insect control and disease control are maintenance practices discussed.

Grasses suitable for lawns in the various areas of the country are listed together with the requirements of those grasses. The authors point out:

"To keep weeds out, grow good grass—that is, proper management of the turf is the most important phase in the growing of a weed-free lawn. A good, healthy turf will not allow weeds to encroach. Any weed-control measure must be accompanied by appropriate fertilizer practices, and reseeding where necessary to fill in bare spaces."

Greenswards in the Cooler Regions*By H. B. MUSSER, J. A. DEFRENCE*

Grasses adapted to the cool, humid regions are discussed thoroughly.

With reference to seed mixtures, the authors have this to say:

"It has been demonstrated repeatedly that the ultimate turf population resulting from a seed mixture depends to a greater extent upon the soil and climatic environment than upon the relative quantities of each species in the mixture. The best mixture is that which contains species best adapted to the particular location, in quantities sufficient to provide permanent turf at normal seeding rates. Because of the more rapid growth rates of the temporary grasses, it is generally accepted that they will seriously retard development of the permanent species when present in quantities exceeding one-fifth of the total."

Fertilization and liming practices, mowing requirements and the proper use of herbicides also are discussed.

Greenswards in the Warmer Regions*By G. W. BURTON, D. G. STURKIE*

The authors stress the importance of making the proper choice of the grass species to use for any given purpose. Soil preparation for the lawn, watering practices, and lime and fertilizer requirements are discussed. They state:

"A good rule to follow in building the lawn is to prepare all the soil as if it were to be a flower bed. Pennies spent in such preparation will grow to dollars in savings in maintenance costs."

Concerning maintenance, the authors say:

"Perhaps the most important maintenance requirement and certainly the one most frequently neglected is adequate fertilization.

"If the lawn received a good application of complete fertilizer when it was established and if the clippings are left on the lawn, nitrogen becomes the element most needed for satisfactory growth of the grass. Nitrogen improves the color, greatly stimulates the growth, and enables the grass to choke out competing weeds. Many nitro-

gen fertilizers are available, but nitrate of soda, cyanamid, and cottonseed meal are among the easiest to use. From 2 to 4 pounds per 1,000 square feet of nitrate of soda or granular cyanamid may be uniformly broadcast like seed over the lawn.

"These materials should be applied when the grass is dry and should be watered in to prevent burning of the foliage. Five to ten pounds of cottonseed meal per 1,000 square feet supplies the same amount of nitrogen and will not burn the grass. These materials should be applied only when needed to thicken the sod and improve the color of the turf. Grasses like Bermudagrass, having high soil fertility requirements, will require more frequent applications than species like carpet and centipedegrass. Putting too much nitrogen on carpet and centipedegrass may prove detrimental and cause them to give way to Bermudagrass.

"On the poorer soils, a spring application every third or fourth year of a complete fertilizer such as 4-8-6 at a rate of 10 to 15 pounds per 1,000 square feet is desirable. Adequate fertilization develops a dense, attractive sod in which weeds cannot become established."

Safety and Beauty for Highways*By FRANK H. BRANT, MARVIN H. FERGUSON*

"By improving appearance, bringing about economy of maintenance, and contributing to safety, grass is a prime item in the development of the modern complete highway. . . .

"The ideal grass cover for use areas is a low, dense, closely knit turf that will exist on stabilized soil on shoulders, survive any reasonable wear, and withstand the force of drainage runoff. . . .

"Mulch overcomes several difficulties usually encountered in a new seeding. It provides protection against heavy rains which would cut rivulets and gullies in the seeded area. It prevents the soil from drying rapidly and baking on the surface, and it reduces the fluctuation of soil temperatures. Thus it protects the young seedlings and enables them to become well established even under adverse conditions. . . .

"It is better to take some chances on stretching the seeding seasons or better to

seed twice than to lose the soil — or even the entire pavement and roadbed — by waiting for just the right time to seed or sod or sprig. . . .

"Along highways the shoulder area requires sufficient stability to carry occasional traffic. Grass cover on a highway may be beautiful and it may control erosion perfectly; nevertheless, it should not hide a shoulder soil that is soft or slick to the extent that vehicles forced to the shoulder will be endangered or inconvenienced. This is one of the most important points to be considered in the establishment of a turfed shoulder because it affects the vital factor of highway safety as well as beauty."

Airfields and Flight Strips

*By RALPH H. MORRISH, ALTON E. RABBITT,
EDWARD B. CALE*

"The establishment of adapted grasses and grass mixtures is the most effective and economical means of checking dust and erosion on airfields and flight strips where soil and climate are favorable. . . .

"Local soil and climatic conditions will govern the composition of the seed mixture to be planted and the rates and dates of seeding. The most desirable grasses are those that are adapted to local conditions; that can form a dense sod; resist wear, heavy use and abuse, and drought; recover quickly after periods of hard use; bear heavy loads; require relatively low fertility; and be maintained easily and inexpensively. . . .

"The use of domestic ryegrass in seed mixtures has been a common practice as a means of insuring a quick cover. The competitive nature of this species for available plant food and moisture is such that its presence is usually harmful and interferes with the rapid establishment of the desirable perennial species in the mixture. Where adapted, redtop is recommended in preference to domestic ryegrasses for inclusion in seed mixtures where a temporary or semipermanent species is required to provide quick cover. Domestic ryegrass, if it is used, should not be more than 10 percent by weight of the seed mixture. Cereal grains, such as rye, oats, or wheat, as well as Sudangrass, may be used to provide temporary cover and dust control

when the grading work is completed during the months when seeding with desirable perennials is not advisable. . . .

"The expense of top-soiling airfields and flight strips is seldom justified in the establishment of desirable species of perennial grasses. Frequently the existing surface soil on an airfield site is of no higher fertility than the subsoil material. If it has suitable physical structure, the graded subsoil material, although it may be infertile, can be made to produce a wear-resistant cover by the timely planting of adapted species and the heavy application of commercial fertilizers of the correct analyses.

"Any airfield or flight strip that warrants the expenditure of funds for the establishment of adapted perennial grasses also warrants the expenditure of additional funds to provide practical management and maintenance. A well-established sod represents a sizable investment and unless this investment is protected by timely maintenance operations, the turf soon deteriorates; dust and erosion problems become evident; flight hazards in the form of ruts and gullies develop; weeds become dominant, and expensive renovation and reseeding projects become necessary."

Golf Is Played on Grass

By FRED V. GRAU, O. J. NOER

"The best and most satisfactory turf is self-healing and produced from stoloniferous grass (creeping surface stems or runners) or from rhizomes (underground creeping stems). . . .

"We need new and better tee grasses, however. The grasses now available cannot survive, as well as we should like, the terrific punishment from heavy play on the small tees of the daily fee courses. The public courses particularly need better grass.

"In building new tees, or rebuilding old ones, it is good practice to follow these principles:

"Make the tee large enough so there is time for the turf to recover before play is resumed from the same spot. Tees on iron-shot holes (the short par-3 holes) should be one-fourth to one-third larger

than the others to permit more frequent change of tee markers. . . .

"Modern golf demands weed-free fairways. A weed in golf turf is any plant that interferes with the accuracy of play and the enjoyment of the game—a definition that makes clover a weed on a golf course. Herbicides like arsenic acid, sodium arsenite, and 2,4-D can keep weeds out. . . .

"No specific recommendations can be made for watering putting greens. The use of water must be based upon the need for it, common sense, and judgment. Prevailing conditions, such as normal rainfall and drainage on the green, both surface and subsurface, will determine the amount and frequency of watering. The proper use of water is the key to good turf.

"Many of the difficulties on putting greens can be traced to poor soil conditions which were either built into the green or have developed by compaction by foot and maintenance-machinery traffic." . . .

CONFERENCE DATES

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| November 8-9, 1948.....West Virginia Dr. Edward Tyner, University of West Virginia, Morgantown, West Va. |
| December 13-16.....New York American Association of Economic Ento- mologists, Hotel New Yorker, New York City. E. N. Cory, University of Maryland, College Park, Md. |
| January 13-14, 1949.....Maryland Mid-Atlantic Association of Greenkeep- ers, at Lord Baltimore Hotel, Balti- more, Md. E. N. Cory, University of Maryland, Col- lege Park, Md. |
| February 7-11.....California Greenkeeping Superintendents' Associa- tion, Alexandria Hotel, Los Angeles, Calif. A. L. Brandon, St. Charles, Ill. |
| February 21-24.....Pennsylvania H. B. Musser, Pennsylvania State Col- lege, State College, Pa. |
| March 7-9.....Indiana G. O. Mott, Purdue University, Lafay- ette, Ind. |

BELTSVILLE TURF FIELD DAY

The first annual post-war open-invitation field day at the Beltsville Turf Gardens will be held Friday, October 15, 1948, starting at 9:30 a.m., E.D.T. The program will be of broad general interest but special emphasis will be placed on grasses, mixtures and fairway turf management. Visitors will see these features:

1. A 17-acre lawn of Alta fescue one year old.
2. Urea-form fertilizer trials on Alta fescue and on bent fairway turf.
3. U-3 Bermudagrass turf alone and in combination with cool-season grasses.
4. *Zoysia japonica* turf alone and in combination with cool-season grasses.
5. Evaluation trials of strains of bent-grasses under putting green and fairway management.
6. *Zoysia* turf established from seed.
7. Management studies on important grasses.
8. Strain testing of red and tall fescues.
9. Bentgrass fairway studies.
10. Nursery of Z-52 *Zoysia japonica* parent and seedlings.

11. *Zoysia japonica* progeny nursery and seed production studies.

12. Results of methods and time of seeding *Zoysia*.

13. Q-10 creeping red fescue progeny nursery.

14. Weed control.

The Beltsville Turf Gardens are located at the Bureau of Plant Industry Station on U. S. Highway No. 1. The Plant Industry Station lies on the west side of the highway and is approximately four miles north of College Park, Md. Markers on the Station grounds will guide you to the plots.

If you should lose your way, call the Green Section office and we can set you straight. The number is TOWER 6400, branch 277.

Green committee chairmen are urged to attend with their superintendents. We suggest that clubs consider the expense involved in attending Field Days to be legitimate club expense. Savings in maintenance expense through the adaptation of new ideas gathered at Field Day meetings will be many times the expense of attendance.

CONTROL OF WEEDS IN SPECIAL-PURPOSE TURF WITH 2,4-D

H. B. Musser, Professor of Agronomy, Pennsylvania Agricultural Experiment Station, State College, Pa., has prepared Progress Report No. 1, July, 1948, which is abstracted as follows:

The value of 2,4-D for the control of weeds in turf is generally recognized, but because of the fact that 2,4-D is regarded as a panacea, there is a lack of appreciation of the part that good management practices play in a weed-control program.

Fall is the best time to kill dandelions, buckhorn, broadleaf plantain and white clover. The various formulations of 2,4-D are equally effective when they are used at this season.

Liberal fertilizer applications are val-

uable in insuring success in the weed-control program. Fertilizer may be applied before or after a spray operation, or the 2,4-D may be mixed with the fertilizer.

Clipping heights of $\frac{3}{4}$ inch and $1\frac{1}{4}$ inches did not influence the effectiveness of the 2,4-D.

Spray treatments of more than $1\frac{3}{4}$ pounds of acid equivalent to the acre were not justified nor were more than 3 pounds to the acre applied dry. There is a considerable margin of safety.

One treatment is not satisfactory. The control program should include 2,4-D in the fall of two successive years, supplemented with liberal fertilization (and lime where needed).

INTERESTING READING

"Insect Pests of Lawns." E. G. Kelsheimer, Entomologist, Vegetable Crops Laboratory, Florida Agricultural Experiment Stations, Bradenton, Fla. Press Bulletin 642, February, 1948.

This Bulletin describes the insect and the control methods for chinch bugs, false chinch bugs, sod webworms, fall army worms, leafhoppers, grubs and mole crickets:

"Many insects, both sucking and chewing, may be controlled by the use of a 3 or 5 percent DDT dust applied at the rate of 30 pounds per acre* with a crank duster. Where isolated areas are infested, a puff duster may serve the purpose. Treat the infested area and several feet of the surrounding area.

"If spraying is preferred, use 2 pounds of 50 percent wettable DDT powder in 100 gallons of water and apply at the rate of 100 gallons per acre.[†]

"The fall armyworm is an exception in that DDT is not effective after the worm reaches a certain size (third instar). There are a number of compounds that may be used for this insect, such as methoxy DDT,[‡] chlordane and cryolite. Methoxychlor and chlordane are sold as wettable powders and may be applied as sprays, at the rate of 100 gallons per acre, of two pounds of 50 percent material to 100 gallons of water. If they are to be applied as dusts, use the methoxychlor as a 3 percent dust and chlordane as a 5 percent dust. Both are relatively expensive materials and if the owner can be satisfied with a slower but effective kill, the use of cryolite as a 30-70 dust or as a spray at 6 pounds to 100 gallons is suggested.

"Mole-crickets also require a stronger dose than the 3 or 5 percent DDT dust. A 25 percent DDT in emulsifiable oil, one pint to 100 gallons of water, is effective. Apply one gallon of the diluted mixture to 10 square feet of lawn space with a sprinkling can.

"Chlordane also controls mole-crickets, $\frac{1}{4}$ pint of a 50 percent emulsion mixed with 100 gallons of water being satisfactory. It, too, is applied with a sprinkling can, one gallon to 10 square feet of area.

"Rhinoceros beetles can be killed by dropping a fumigant, such as cyanide gas or carbon bisulphide, down the holes where they are working and then sealing the holes with a press of the heel."

* Roughly, $2/3$ lb. per 1,000 sq. ft.

† Roughly, 2 gallons per 1,000 sq. ft.

‡ Now known as methoxychlor.

TURF FIELD DAYS

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| September 8-9..... | Rhode Island For Greenkeepers, at Kingston, R. I. |
| September 10..... | Rhode Island Second Annual Lawn and Garden Field Day. J. A. DeFrance, Rhode Island State College, Kingston, R. I. |
| September 20-21..... | Pennsylvania H. B. Musser, Pennsylvania State College, State College, Pa. |
| September 27..... | Indiana G. O. Mott, Purdue University, Lafayette, Ind. |
| October 15..... | Maryland Turf Gardens, Plant Industry Station, Beltsville, Md. F. V. Grau, USGA Green Section, Beltsville, Md. |