

# Southern California Turfgrass Culture

A Quarterly Publication devoted to the activities of the Experimental Program in Turfgrass Culture  
of the College of Agriculture, University of California. Los Angeles 24, California.

JULY, 1955

VOLUME 5 - NUMBER 3

## ZOYSIAS AS TURFGRASSES FOR SOUTHERN CALIFORNIA

C. Gordon Wyckoff

Senior Laboratory Technician

Department of Floriculture and Ornamental Horticulture  
University of California · Los Angeles, California

The zoysias are not commonly seen in California although they grow well in many areas. Several articles in nationally circulated magazines have told of their virtues and one "big name" television show recently displayed a square of zoysia sod to its audience. Publicity of this sort arouses the interest of home owners and as a result many inquiries have come to the University concerning the use and adaptability of zoysias to southern California conditions.

There are only three species of zoysia that have been used to any extent as turfgrasses in this country. They are all native to other parts of the world and were introduced into the United States around the turn of the century. They have so many desirable characteristics that considerable interest is developing in them.

The zoysias have been under test on the turfgrass plots at UCLA for several years. The majority of the work has been done with named clonal strains rather than with seeded grass. There are a number of reasons for this. Zoysia seedlings are highly variable and hence it is difficult to get a sod of uniform appearance from seed. These seedlings vary in texture, vigor, drought resistance, and tolerance to cold weather. In addition to the variability, zoysia seed is slow to germinate and the germination percentage is very low, although it can be improved some by hulling and scarifying the seed. The seedlings are also very slow growing and have difficulty competing with weeds. All of these shortcomings have led to the selection of superior seedlings within each species. These selections are then propagated vegetatively and lawns and turf areas are started from vegetative divisions. Many new zoysia selections are being made as the interest in them increases and the most promising of these will be tested for adaptability in this area, but since it takes a number of years to fairly evaluate any grass, this report deals only with one selection or clonal strain in each species. Fortunately, these include the best known zoysias to date and those that have received most of the publicity.

Vegetative planting need not be expensive or difficult. In the Gulf Coast area, successful large scale plantings have been made by chopping up sod in an ensilage cutter and spreading this material with a manure spreader. It was then covered lightly by using a disc harrow set straight. Regular and frequent watering was needed to prevent drying of the stolons.

Zoysia japonica, sometimes called "Korean lawngrass" or "Japanese lawngrass" is the coarsest as well as the hardiest species of the three. It would probably withstand any winter temperature in California. From this species, Meyer zoysia has been selected.

Meyer zoysia, originally known as the Z-52 selection of the U.S. Golf Association Green Section, is finer in texture than the parent species. It is upright in growth and forms a very dense and wear resistant turf. It has a beautiful deep green color during its growing season, and no serious insect or disease troubles have yet been reported as bothering it. It will withstand cutting as low as 1/4 inch and seldom grows higher than 6 or 8 inches if left unmowed. In summer weather and in pure stand it leaves very little to be desired as a general purpose turfgrass. Zoysia japonica and all selections from it usually start their dormant period in the latter part of November and remain dormant and dead looking through March. All our attempts at overseeding Meyer zoysia with a cool season companion grass, for winter color, have failed. Conversely, Meyer zoysia plugged into pure stands of cool season grasses has always slowly but surely eliminated the cool season grass in every case thus far tested. However, in other sections of the country Merion bluegrass and Meyer zoysia have made an excellent combination, particularly in the great "crabgrass belt" ranging from Washington, D.C. and Philadelphia to St. Louis and Salt Lake City.

A large planting of this selection on poorly drained soil died out. This experience, together with many similar experiences by others, seems to indicate that zoysias will not grow in soil where the root zone remains satur-

(continued on page 4)

**ADVISORY COMMITTEE FOR THE  
RESEARCH PROGRAM IN TURFGRASS CULTURE  
at the  
University of California, Los Angeles**

- Mr. **Colin C. Simpson**, Chairman  
Southern California Golf Association
- Mr. **F. W. Roewekamp**, Secretary  
Superintendent of Park Development  
Department of Recreation and Parks  
305 City Hall  
Los Angeles 12, California
- Mr. **Joseph Beeler**  
California Landscape Contractors Association
- Mr. **William Beresford**  
Golf Course Superintendents Association of America
- Mr. **Arthur S. Hicks**  
Athletic and Recreational Turfgrass Association
- Mr. **Leo Davis**  
California Fertilizer Association
- Mr. **Harold A. Dawson**  
Southern California Golf Association
- Mr. **Roy Eaton**  
Interment Association of California
- Mr. **William G. Hay**  
American Lawn Bowling Association
- Mr. **William Johnson**  
Notional Golf Foundation
- Mr. **E. B. Marzolf**  
Implement dealers
- Mr. **David M. McFadden**  
Seed Dealers
- Mr. **Raymond E. Page**  
Southern California Chapter of American  
Society of Landscape Architects
- Mr. **Frank Post**  
Interment Association of California
- Mr. **Gomer Sims**  
Public Links Golf Association
- Mr. **William W. Stewart**  
Southern California Golf Superintendents Association
- Mr. **Charles Wenger**  
Los Angeles City Schools
- Mr. **Richard Westcott**  
California Association of Nurserymen
- Mr. **Verne Wickham**  
National Golf Foundation

**HONORARY MEMBERS:**

- Dr. **Fred V. Grau**  
West Point Products Corp.
- Mr. **Charles K. Hallowell**  
Agricultural Extension Service  
Pennsylvania State University
- Prof. **H. B. Musser**  
Department of Agronomy  
Pennsylvania State University
- Mr. **O. J. Noer**, Agronomist  
Milwaukee Sewerage Commission
- Mr. **Charles G. Wilson**, Regional Director  
U. S. Golf Association Green Section

This publication "Southern California Turfgrass Culture" is sponsored and financed by the Research Advisory Committee. Communications should be sent to the Secretary, or to Dr. Victor B. Youngner, Department of Floriculture and Ornamental Horticulture, University of California, 405 Hilgcrd Avenue, Los Angeles 24, California.

## NEW APPOINTMENT FOR WICKHAM

Verne Wickham, for the last 18 years Golf Director of the Los Angeles County Department of Parks and Recreation, has been appointed West Coast field representative for the National Golf Foundation's project to develop new golf courses.

Wickham will help communities develop new golf facilities in California, Washington, Oregon, Idaho, Utah, Nevada and Arizona. He has been a member of the Advisory Committee for the Research Program in Turfgrass Culture since it was first organized.

Verne will make his home at 42 West Floral, Arcadia, California, his headquarters for the time being and will be available for consultation by any group now operating golf courses or planning new facilities. Prior to going into county service, where he supervised golf operations for Los Angeles County at Santa Anita, Altadena, Lakewood, Western Avenue, and Eaton Canyon (now under construction), Wickham managed Recreation Park and Lakewood in the Long Beach area. He is the author of many golf stories and articles in national publications. He recently took a leave of absence from county service and wrote the Golf Foundation book, "Municipal Golf Course Organizing and Operating Guide" which is available through the Chicago office of the Foundation at \$3.00 per copy.

In 1950 he enrolled in the Summer School Abroad of the University of California at Los Angeles, and did six weeks golf research in England and Scotland, and on the continent.

---

## RECENT GIFTS

West Point Products Corporation  
West Point, Pennsylvania  
Servicing of equipment

B. Hayman & Company  
Los Angeles  
Servicing of equipment

---

## AMERICAN SOCIETY OF AGRONOMY

The national annual meetings of the American Society of Agronomy will be held in Davis, California, August 15 to 19, 1955. This society has a committee for turfgrass culture and is the major scientific society which operates in this field. A program of technical papers devoted to this subject will be presented in one of the sectional meetings. Many of the top authorities on the subject will attend.

We believe that many people in the field of turfgrass culture could profitably belong to this society. Those interested should write to the secretary, The American Society of Agronomy, 2702 Monroe Street, Madison 5, Wisconsin. Two monthly journals, one technical and one popular, are published by the society.

# ATHLETIC AND RECREATIONAL TURFGRASS ASSOCIATION

The first purpose of the Athletic and Recreational Turfgrass Association is to seek solutions of specific turf problems pertaining to the construction, renovation and maintenance of turfgrass areas. Secondly, through the medium of a common interest in turfgrass, it provides opportunity for discussion of other phases of park and school maintenance, or of any other general problems which are keeping the individual park superintendent or member from doing his job most efficiently.

Meetings are open to all persons interested in turf grass and recreation. Leading men in various fields speak to the group. Subjects have included fertilization, irrigation, spray materials, equipment, grass seed, and soils. A question and answer period follows each lecture. Some of our meetings are educational field trips which provide study of turfgrass areas such as the Rose Bowl, the Los Angeles Coliseum and U.C.L.A. turfgrass plots.

School systems, city and county parks, colleges and universities, cemeteries, bowling greens and driving ranges are represented in the ever-increasing membership of the Turfgrass Association.

Dues have been set at \$3.00 per year for membership, and \$10.00 annually for associate members (commercial companies), and should be sent to the secretary.

The present officers are:

President - Jack Provine,  
Los Angeles County Parks

Vice President - Robert Berlin,  
Rose Hills Memorial Park

Secretary - Harold Greek,  
California State Polytechnic College  
(Kellogg Unit)  
Route 2, Pomona, California

Treasurer - J. A. Coogan  
Los Angeles City Parks

## NEW ROTARY MOWER

Certain features of the rotary mowers should not be overlooked. This type of mower is undergoing a constant development in design. One rotary mower with several radically new features of design is the McCulloch, which is made in Los Angeles by McCulloch Motors Corporation. This mower has very small replaceable cutting blades mounted on twin hollow cutting wheels. The wheels for movement are within these, which makes the outfit more suitable for irregular ground. Grass is carried to a catcher by vacuum action. One other interesting feature is that the height of cut is adjusted by a dial setting without the use of tools.

(In order that the information in our publications may be intelligible it is sometimes necessary to use trade names of products or equipment rather than complicated descriptive identifications. In so doing it is unavoidable in some cases that similar products on the market under other trade names may not be cited. No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.)

## BOOK REVIEWS

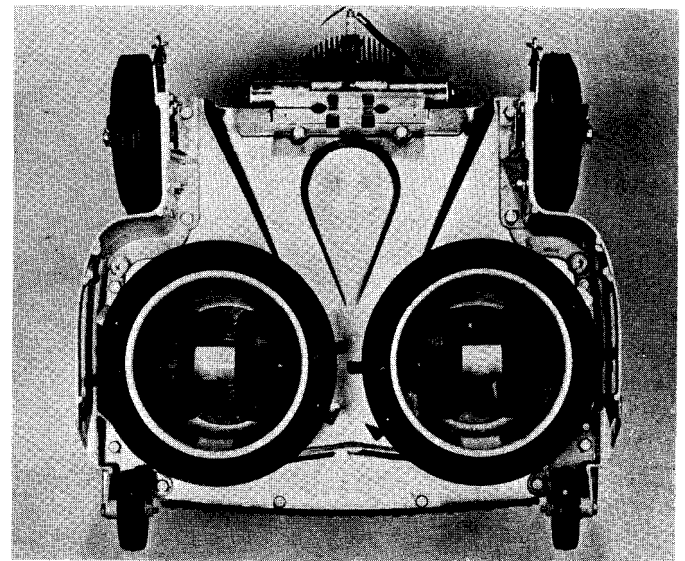
Ditner, Howard J.- Lawn Problems of the Southwest.  
University of New Mexico Press,  
Albuquerque. 1950. 76 pages.  
Price \$1.00

The author discusses lawn making and maintenance with particular reference to the alkaline soil conditions of the arid Southwest. This is mostly a compilation of standard information, but some experiments are reported.

White, L. W., and Bowles, W. H. -Practical Groundsmanship  
English Universities Press, Ltd.,  
St. Paul's House, Warwick Square,  
London E.C.4. 1952. - 258 pages.

This is a very comprehensive and detailed manual on the construction and maintenance of turfgrass areas for sports of many types, including cricket, tennis, lawn bowling, grass track, hockey, and football. The applicability of the recommendations is naturally chiefly for British conditions; but due to the lack of American books on this subject, some may wish to obtain it. At current rates of exchange, books published in England are quite inexpensive, and will be ordered by most booksellers. At the rate of 9 shillings and sixpence, this book should be available here for less than a dollar and a half.

Mr. Bowles founded the National Association of Groundsmen in England. The scope of this organization is somewhat comparable to that of the Athletic and Recreational Turf Association which is, however, as yet confined to Southern California.



CUTTING AND TRANSPORT MECHANISM  
OF THE McCULLOCH MOWER

## ZOYSIAS AS TURFGRASSES FOR SOUTHERN CALIFORNIA

(continued from page 1)

ated with water. It has been grown on well drained soil where it received water at monthly intervals and an occasional mowing at a height of about 2 inches. Under these conditions it formed a beautiful weed free turf. It has been maintained as a putting green where it received frequent waterings, close mowing and heavy feedings. This type of management encouraged weed invasion after the first year and at the present time this plot is heavily infested with crabgrass and bermudagrass. Meyer toysia is probably the best selection to date from *Zoysia japonica*. It is difficult to predict how successful it will be as a lawngrass in southern California. The lawns here are almost always watered frequently and mowed closely so it is doubtful if this grass will become very popular in this area. To those who want to conserve water and who do not object to a lawn area 1 1/2" in height, or higher, and one that will be dormant for about four months out of the year, Meyer zoysia would be a very wise choice.

The second species in this group is *Zoysia matrella* or "Manilagrass." *Zoysia matrella* might be called the intermediate zoysia. It ranges in texture between *Zoysia japonica* and the third species, *Zoysia tenuifolia*, which is fine-leaved. It is intermediate in its tolerance to cold and in its retention of winter color, and it comes from a climate intermediate between the climatic zones of the other two.

In this species, as in *Zoysia japonica*, selections have been made and one named "Flawn" is one of the best of those tested at UCLA. Flawn has a texture similar to that of Kentucky bluegrass. It forms a very dense turf, is disease free, and has thus far shown no damage from insect attack. It will stand as close mowing as Meyer zoysia; but if this is coupled with frequent watering, crabgrass and weeds invade it more readily. Flawn has a longer growing season than Meyer zoysia and in frost-free areas it will retain some green color through the entire winter. It is a tough and almost wiry grass that is difficult to mow with a hand mower. It looks best when mowed closely but performs best when mowed considerably higher. The appearance of Flawn is improved by fertilization, but under starvation its green color is superior to that of any other grass tested under similar conditions. There are a few large plantings of Flawn in this area which have made very satisfactory lawns. Flawn is slow growing and takes about two years to cover an area planted from sprigs. It grows in shade and has been used to advantage as a ground cover around stepping stones. The Los Angeles State and County Arboretum at Arcadia has some promising new selections of Manilagrass.

The third species, *Zoysia tenuifolia*, is a very fine textured grass, its common name in California being "Korean Velvet Grass." It is the least hardy of the three, and is grown chiefly in Florida and the warmer

areas of California. Plantings of this grass are seldom mowed in California but like the other two species, it will stand close mowing. It would be more correctly classed as a ground cover. It is a very slow growing grass, and while it eventually makes a dense cover it is extremely humpy, the humps varying in height and diameter, which presents a very unusual appearance. In some of the older residential areas of Los Angeles there are a number of plantings of this grass. *Zoysia tenuifolia* retains a beautiful deep green color the year round in frost-free protected areas of southern California.

*Zoysia* grasses have been reported as preferring a pH of between 5.5 and 6.5, and the report from the Federal Experiment Station in Puerto Rico further states that in alkaline soils the competition from bermudagrass might be too great for zoysias. This might explain why bermudagrass is invading our closely mowed zoysia plots. At present the more vigorous bermudagrasses seem better adapted to this climate, but since zoysia seedlings are quite variable and since all three species can be hybridized readily, they cannot be ruled out. If one could be produced which incorporated all the desirable features of the three basic species, it would indeed approach the ideal grass. Zoysias require less water than most turfgrasses; they will grow on infertile soils; they will grow in shade; they are almost free of disease and insect troubles; and they are wear resistant and slow growing.

A turfgrass survey recently completed for the County of Los Angeles conservatively estimated the annual maintenance cost of all turf areas in this county at ninety millions of dollars. In view of this staggering sum, a thorough investigation into the possibilities of zoysias as grasses for this area seems very much in order. Although we cannot now recommend them for more than cautious trial on a small scale, with sufficient breeding and selection, they may well prove to be the grasses of the future.

Commercial sources of stolons of the better types of zoysia appear to be non-existent in California at the present time. The nearest source of supply is

The Turfgrass Farm  
4961 East 22nd Street  
Tucson, Arizona

Other well established nurseries located in the Midwest are:

Henry C. Glissman & Son  
4705 Cass Street  
Omaha 3, Nebraska

Link's Nursery  
R.F.D. 1  
Clavton 5, Missouri