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Annual Bluegrass as a Cool Season Grass For Bermudagrass Mixtures

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Annual bluegrass, Poa. annua, is a remarkable grass. It is found naturally around the northern hemisphere and does well in many areas with seasonal rainfall or short growing seasons because it can mature seed in a very short time. As the name indicates, if is an annual and does not have a permanent root system, although observations have been recorded on longer-lived types. Any person who has played on a golf course, not only in California but elsewhere, has probably seen it. It can easily be recognized by the unusual feature that regardless of how often or how closely it is mowed, it will always continue to set seed just above the ground. It is definitely a cool season grass and does not like heat. Mr. Charles G. Wilson of the U. S. Golf Association Green Section reports finding an unusually fine-leaved type in the Pacific Northwest.

During the cool season of the year, the large lawn at Exposition Park north and east of the Coliseum in Los Angeles consists largely of annual bluegrass. The large areas of turf used in the gardens in the annual California International Flower Show have consisted largely of Poa annua. It is often found in abundance under shade too great for most other turf grasses. It is shallow rooted and for this reason will often establish itself on compacted soils if sufficient moisture is present.

Since, in this area, bermudagrass comes in naturally, we do not need to worry much about bare spots if the annual bluegrass fades out. Thus, one of its serious disadvantages in the East does not necessarily apply here. It is true that sometimes annual bluegrass is something of a nuisance on golf putting greens or lawn bowling greens, from the point of appearance, because of its habit of excessive seeding regardless of height of cut. However, it makes one of the finest putting surfaces. If it is desired to eliminate annual bluegrass from a putting green, this can usually be done readily by applications of lead arsenate to the soil.

Several years ago at one of the national conventions of the Golf Course Superintendents of America a program was devoted to the subject "Annual Bluegrass, Friend or Foe?" In this discussion, most of the time was devoted to methods of controlling this grass, both in greens and fairways, since it is treacherous and may disappear quickly in warm weather. However, some favorable comment was made on this grass by those from Southern California, on the grounds that it furnishes most of the winter color on fairways of golf courses here.

Seed of this grass has occasionally been offered for sale commercially, but is usually unobtainable. We believe that this grass has sufficient possibilities for the regions using bermudagrass to justify an attempt to develop reliable and steady sources of the seed. Seed has apparently at times been imported from Germany. One area in which this might be done is in Southern California, where large expanses of fairways on some golf courses have nearly solid stands. Some orange groves also which ate maintained under the newly developed system of non-cultivation, using petroleum sprays for weed control, have large areas of this grass. However, one difficulty in harvesting the seed is that it ripens somewhat unevenly and may need to be harvested by special equipment, and the costs of harvesting in this manner may be prohibitive. We have harvested some seed for use on our experimental turf plots by cutting the tops off with a power mower and, after drying, flailing the seed out on a concrete floor. The germination of the seed improved greatly after months of storage, as might be expected of any bluegrass.

A possible low cost source of seed of this grass is in the grass seed growing areas of the Pacific Northwest, where it sometimes accumulates in considerable quantities from cleaning operations for other grass. Even when mixed with other seeds, it would be usable if free of noxious weed seeds.

When the seed of Poa annua was sown over an expanse of U-3 bermudagrass in November, a remarkably beautiful winter turf resulted which held color throughout the entire winter. The seed undoubtedly should have been sown a

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little earlier. Presumably this area produced much seed last year, and there was abundant germination on this area by the first of October. There is every reason to believe that with correct management, this simple and effective combination of a warm season and a cool season grass can be maintained permanently.

Work with plots is in progress, and the answers should be forthcoming later. Our observations indicate that perforation or aerification of the turf late in the season by mechanical equipment tends to bring in more annual bluegrass. It would seem logical to assume that frequent light surface irrigations of the turf after the weather becomes cooler would aid greatly in the early germination of seed of this grass. Our experience thus far also indicates that surface seeding without aerification or any covering gives perfect stands of annual bluegrass in bermudagrass. All turf grasses need more or less fertilizer, particularly nitrogen, and regular liberal feeding through the fall and winter will bring in more cool season grasses, including Poa annua. It will also tend to keep the bermudagrass greener.

Annual bluegrass needs to be tried as a companion grass for the zoysias as well as the bermudagrasses, since they tend to have the same fault of winter dormancy encountered with the bermudagrasses. It has the great advantage over some other cool season companion grasses that no effort need be made to keep it active and alive during the summer.

It would be hard to predict the future use of annual bluegrass in turf culture, but a number of its qualities must be considered to be promising and worthy of extended testing.

RECENT GIFTS

Ferro Corporation
Cleveland, Ohio
20 lbs. Fritted Trace Elements

RPM Manufacturing Company
Lamar, Missouri
4 Lawn Boy Rotary Mowers

Kellogg Supply Company
Los Angeles, California
300 Ibs. Big Six Fertilizer

Hardie Manufacturing Company
Los Angeles, California
Servicing of equipment

NORTHERN CALIFORNIA TURF GRASS CONFERENCE

For the first time, this conference was held on the Davis Campus of the University of California. The program was held on October 8 and was similar in nature to that of the conference the following week in Los Angeles. The registration showed a substantial increase over that of the previous year. The continued growth of both the Northern and the Southern Conferences is encouraging.

SOUTHERN CALIFORNIA CONFERENCE ON TURF CULTURE A SUCCESS

The recent Southern California conference on turf culture was successful, both in increased attendance and in participation of visitors in the discussions and problem clinics. A total of 151 persons registered for the course. The sessions of the first day were held at the Riviera Country Club on October 12, with Mr. Colin C. Simpson 3s chairman. Some new viewpoints in turf culture were discussed by Dr. V. T. Stoutemyer. Dr. James R. Watson, Jr., formerly of the Texas Agricultural Experiment Station and now with the Toro Company, discussed the problem of soil compaction in turf culture. Dr. J. C. Harper, now research agronomist in the U. S. Department of Agriculture, explained his newly established research program. He is the first person in the department to work on turf problems on 3 full-time basis.

Mr. 0. J. Noer of the Milwaukee Sewerage Commission discussed new turf problems, and Mr. Charles G. Wilson, regional director of the West Coast Section of the U.S. Golf Association Green Section, told how to control thatch and mat in turf.

Recently the local organizations concerned with turf culture initiated 3 survey of turf of all types in Los Angeles County. The survey is not yet complete, but will be presented in full later. At the present time the results indicate that there are approximately 700 square feet of turf area for each person in the county. The initial installation costs and the figure for annual maintenance will reach astonishing figures.

The afternoon session was devoted to four separate problem clinics for groups devoted to (1) parks, recreation and athletic fields, cemeteries, commercial grounds and school grounds, (2) golf courses, (3) landscape architects, landscape contractors, and government agencies, and (4) nurserymen and home owners. Rotating panels devoted to grasses, soils and irrigation, fertilization and turf pests visited the various groups in turn. These included visiting speakers, local college staff members, and others. This new idea for the conference proved to be highly successful and created an unusual amount of interest.

The sessions concluded with 3 dinner and 3 brief program summarizing the chief discussions of the day.

The second day was devoted to 3 chartered bus tour starting at the UCLA campus turf plots, going to the experiment31 plots and nurseries of the Los Angeles Country Club. Excellent results of 3 crabgrass eradication program were noted. The afternoon was devoted to seeing the new turf grass race track at Santa Anita and also to 3 tour of the turf plots at the Los Angeles State and County Arboretum conducted by the director, Dr. Russeil J. Seibert.

The success of the conference reflects the steady increase in interest of many different groups in the subject of turf culture. The distances traveled by some of those attending were notable. Among the places represented were New Jersey and the Island of Guam.

TESTS WITH CMU WEED AND GRASS KILLER

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CMU, a new weed killer manufactured by the DuPont Company, was tested at several application rates on the campus at UCLA during the winter and spring of 1952 and 1953. Comparatively little information is available on this material although it is known to remain in the soil for considerable periods of time.

The formulation used was the 80% wettable powder. The active ingredient is 3- (p-chlorophenyl) -1, 1-dimethy lurea. The present cost of the material is about $3.00 per pound. Four different per-acre rates were used in these tests with a control plot between each rate plot. The per-acre rates were 80, 60, 40, and 20 pounds.

The area chosen for this test was a non-use area which in the spring and early summer of 1952 was entirely covered with annual broad-leaved weeds and weedy grasses. There was 3 wide variety of weeds of both types represented in these plots, and although they were entirely dependent on natural rainfall for water, they 311 matured and set viable seeds.

Shortly after the first heavy rains in the fall of 1952, the weed seeds germinated in all plots but soon after germinating in the treated plots the seedlings died. The kill was slower but no less complete 3s the per-acre rate decreased. Weed growth in the control plots was just 3s lush 3s in the previous year.

In the late winter, a strip on 3 weedy vacant lot was treated at the rate of 50 pounds per acre, making the application in water, in 3 sprinkling can. The killing of both broad-leaved weeds and grasses was slow but complete, and at the end of the rainy season no living vegetation was left.

CMU has 3 low toxicity, is non-corrosive, non-inflamable, and non-volatile. It remains in the first few inches of the soil and if the soil washes, the CMU could be carried with it and damage plants where the washed soil settles. However, on the vacant lot the material was applied very close to shrubs without damage.

CMU has been used successfully on the U.C.L.A. campus to keep the base paths on the baseball field free of weeds and bermudagrass runners. CMU is a very effective soil sterilant so it should be used with care and only in areas where there are no plant roots that may pick it up. It may persist in the soil in phytotoxic amounts for several years, but further experimentation will be needed in order to determine the extent of residual effects under various conditions. CMU appears to be another promising new material for weed control.

In order that the information in our publications may be more intelligible it is sometimes necessary to use trade names of products or equipment rather than complicated descriptive or chemical identifications. In so doing it is unavoidable in some cases that similar products which are 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.

CHEMICAL CONTROL OF BROAD-LEAVED WEEDS IN LAWNS AND TURF

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Weeds have long been a problem in lawn and turf area. Only in recent years have good chemical control methods been developed. Various chemicals gave some control in the past, but hand pulling or digging of weeds remained most effective. This method still is cheaper and easier in home lawns, where scattered individual weeds occur. In large turf areas, however, general weed infestations are best controlled by chemical weed killers.

CONTROL IN NEW LAWNS. Chemical control of weeds usually is not advisable in a newly planted lawn. The chemicals act through the soil to some extent and affect the susceptible germinating seeds or young seedlings of most grasses. After an established lawn has been clipped two or three times it may safely be sprayed. Many common field weeds in young lawns can be controlled by the competition of grass and subsequent mowing.

CONTROL IN ESTABLISHED LAWNS. Control of most broad-leaved weeds in established lawns and turf is relatively simple. Dandelion, plantain, dock, bur clover, pennywort, spotted spurge, and heal-all can be killed by spraying with 2,4-D. More than one treatment will be required for complete elimination of these weeds. Chickweed is usually stunted by 2,4-D and may be controlled by a combination of repeated spraying, mowing, and lawn management. Oxalis was best controlled in experimental tests with 2,4,5-T, a relative of 2,4-D. This perennial weed often invades starved or shaded lawns, where it almost completely eliminates the grass. Repeated sprayings will probably be necessary to eliminate oxalis, but results with 2,4,5-T are much more promising than earlier attempts with 2,4-D.

APPLICATION. 2,4-D and 2,4,5-T are obtained from most garden supply stores and agricultural chemical dealers. Each is mixed with water and applied as a spray. A small knapsack or garden sprayer is suitable for the home lawn. A power sprayer is more efficient for large areas, such as parks or golf courses. High pressures are not necessary when applying these chemicals. A pressure of 20 to 50 pounds per square inch is ample. Uniform distribution and the actual amount of 2,4-D or 2,4,5-T applied to the turf are more important than the total volume applied. With a garden sprayer, 4 to 5 gallons per 1,000 feet of lawn can easily be applied, though less also will be effective. When a power spray is used on large areas, the usual application is 1 to 1½ pounds of 2,4-D per acre. The amount of active ingredient contained in commercial formulas varies, so directions on the package should be followed.

Mowing of the sprayed lawn should be delayed several days or a week, if possible, after spraying. Sprinkling should be held off for at least 12 hours after the spray is applied.

TIMING. One of the important factors in the successful use of 2,4-D or 2,4,5-T is in the timing of the spray. Annual weeds are more effectively treated when young and actively growing. Perennial weeds, such as dandelions, are more easily killed when in good leaf growth. Actually, it is well to wait until the first dandelion flowers are showing in the spring. Old, mature weeds often show little response to 2,4-D, and weeds growing in deep shade are likewise more difficult to control.

SUSCEPTIBILITY. Grasses vary in their susceptibility to damage from 2,4-D. Established bentgrasses and red top turf are easily damaged by 2,4-D. It therefore may be necessary to reduce the strength of the spray solution to about one half that recommended on the label for lawn. Bluegrass and ryegrass are relatively resistant. Bermudagrass is highly resistant. The more susceptible grasses should not be treated when young, nor with a heavy dose of chemicals. Clover may be damaged by 2,4-D, but usually not killed. If more clover is desired in the lawn it can be reseeded in the bare spots. With adequate irrigation, the old plants usually recover or new plants come from the freshly planted seed.

MANAGEMENT. Chemicals alone will not solve all the weed problems in a turf. Reinfestation of sprayed areas occurs unless the grass is encouraged. A thin starved stand of grass invites invasion. Bare areas will be taken over by weeds unless the grass is encouraged through reseeding, fertilizing, and proper irrigation. New weed seeds are constantly carried into lawn areas. In fact, the soil of most lawn areas has a high population of viable weed seed. Proper management of lawn and turf areas to help keep weeds controlled cannot be overemphasized.

PRECAUTIONS. These chemicals are highly effective plant killers and must be used carefully to avoid undesirable effects.

1. Do not spray a newly seeded lawn with 2,4-D.
2. Use care in spraying bentgrass and red top. These grasses are more easily damaged by 2,4-D and 2,4,5-T than are bluegrass, ryegrass, or Bermudagrass.
3. Do not allow the spray to reach other ornamental or crop plants. Even small amounts of drift may injure these plants some of which are highly sensitive.
4. Keep one sprayer exclusively for 2,4-D. Do not use it for insecticides or fungicides. If the sprayer must be used for other purposes it should be thoroughly washed with several changes of warm water and baking soda or sal soda. Rinse thoroughly several times. Rubber spray hose is particularly difficult to clean satisfactorily. Even small amounts of 2,4-D remaining in a sprayer may be enough to distort and damage sensitive plants treated with insecticides or fungicides from the sprayer.