

## OPERATION ZOYSIA

Since 1945, the Green Section, under Fred Grau's leadership, has made a concerted effort to further study the Zoysia grasses at Beltsville. There in the heart of the "crabgrass zone", the Zoysias were consistently making good turf cover even under conditions of indifferent management. Some strains performed better than others. Among these are the Meyer (Z-52) Zoysia strain and the Zoysia (Z-73) Japonica strain which is a seedling selection from the Meyer strain. The Z-73 strain is one which is a heavy seeder, the percentage of seed germination is high, and the seedling plants produced are extremely vigorous. While turf forming qualities produced by Z-73 seed appears to be outstanding at Beltsville and in a few other locations to date, more data is needed from many parts of the country. With this in mind, the USGA Green Section in cooperation with the Golf Course Superintendents of America jointly are sponsoring the project "Operation Zoysia" which will not only provide more information from the research standpoint, but it will also allow men in the practical field to work with Zoysia and to appraise its performance under their specific conditions. It will also provide that all important individual, the golfer, with the opportunity to test Zoysia turf and to appraise it from the players standpoint. In effect, "Operation Zoysia" is a three way cooperative project between the research man, the practical man and the man who uses the turf. In the Mid-Atlantic region, the first cooperative "Operation Zoysia" project was carried out successfully in 1952. This was sponsored jointly by the Mid-Atlantic Association of Golf Course Superintendents and the USGA Green Section. The success of this project paved the way for the National "Operation Zoysia" project in progress now.

On April 22, 1952, fifty-five representatives of the Mid-Atlantic Association assembled at the Fairfax Country Club to plant the Zoysia seedlings under the supervision of the Green Section. The fairway area was prepared by first aerating with the West Point Aerifier with 1" spoons. Individual seedlings were then placed in every 4th aerifier hole within a row and every fourth row was so planted which made spacings between plants approximately 24".

Each and every seedling plant was carefully set into an aerifier hole so that the roots were covered and only the foliage of the seedling plant could be seen. This was done by first placing the root system carefully into the hole and then a core of soil was forced back into the hole to firm the root system in place. Then the seedling was "heeled-in". (The harder you heel the plant in place, the better—once the plant is set there is no danger of overdoing it—step on it hard!)

If for any reason an aeration tool is unavailable or doesn't penetrate well, each man should have an asparagus knife to make the hole for the seedling plant.

The Mid-Atlantic project took a total of 275 man hours to complete. The size of the fairway area planted was 3½ acres, therefore one acre should consume about 80 man hours.

The Midwest Association of Golf Course Superintendents is embarked on such a project at the present time. We now have Zoysia growing in the greenhouses at the Drug Plant and Horticultural Experiment Station of the University of Illinois at Downers Grove. We hope to have enough seedlings to plant ½ acre. The site will be on one of the fairways at Silver Lake Country Club and the time will be Monday, May 18. It has been suggested that some seedlings be given to Superintendents from other courses to try out under their conditions.

## CONTROLLING WEEDS WITH SPRAYS

T. B. Robertson, Jr.

The chemical control of weeds is one of the most important forward steps in the science of agriculture. Golf Course superintendents, farmers, orchard men and plantation operators can now keep weeds under control—simply, easily, with chemicals. Chemical weed killers can be applied by standard spraying methods that require a minimum of time, labor and money.

The control of weeds has been a vexing problem since the dawn of agriculture.

Unwanted vegetation reduces the yield of crops, steals nourishment and water from the soil, harbors insect pests and plant diseases. The control of weed growth is a major maintenance cost on golf courses, city parks, and state preserves. Until the newly developed methods of controlling weeds with chemical sprays proved successful—weeds were only kept in check by time-consuming mechanical methods. The new techniques are faster, easier and more effective.

The chemicals used for weed control may be roughly divided into two types:

(1) translocated type weed killer — 2,4-D and 2,4,5-T (selective weed killers)

(2) contact weed killers such as — Pentachlorophenol, technical (entire kill)

*Translocated type compounds* (1) are absorbed by the foliage of the weed and spread throughout the entire plant. Although they are absorbed only in minute amounts, certain translocated types destroy the entire growth including the roots.

*Contact weed killers* (2) are compounds which kill weeds by "burning" off all above ground growth. In most cases, excepting perennials, the contact destroyer causes so much damage to the portion of the weed above ground that the root also dies.

The strength of the solution (the amount of 2,4-D added to the water) is not a factor affecting results. The amount of 2,4-D applied is *all important*. Rates of application quoted by most manufacturers of weed control chemicals refer to actual amounts of 2,4-D and 2,4,5-T applied per acre except when spraying fence rows and woody plants.

The concentration of the spray solution should be made to apply the desired amount of 2,4-D or 2,4,5-T per acre, regardless of the amount of water used. Five gallons per acre appears to be the least amount of solution that will assure adequate coverage. More water will be needed when spraying dense and heavy vegetation.

A 40 per cent amine contains approximately 4 pounds of 2,4-D acid per gallon, and 40 per cent ester varies from 2.65 to 3.34 pounds per gallon, depending upon the type. Suggestion: Before purchasing 2,4-D read the label to determine the type and amount of 2,4-D in the package or container.

A few years of consistent spray control will materially reduce the amount of weeding required per season. Consequently, the cost of spray control should be pro-rated over a four to five year period; each season's costs drop lower as the weed population dies out. Chemical weed treatments, season by season, eliminate the viable weed seeds in the soil.

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The hungry pilgrims from Illinois missed out on Dick Ryerson's dinner on April 16. Oh, well, some of them are on a diet anyway. However, they missed the good time they always have with the Wisconsin boys.