THE

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CONNECTICUT ASSOCIATION OF GOLF COURSE SUPERINTENDENTS

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ANTIDOTE FOR HERBICIDES

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The very quality of selectivity in herbicides may on occasion be a disadvantage. Farmers use atrazine in corn because it is selective—it kills weeds and does not damage the corn. If cabbage follows corn in the rotation, traces of atrazine in the soil will be troublesome. Similarly, if strawberries follow ornamental nursery stock in a field where simazine has been applied for several years, residues in the soil may interfere with growth.

The problem is to make selective herbicides even more selective by "turning them off" when they have done their job.

Years ago we faced a comparable problem in Connecticut. Growers needed a way to clear potato fields of benzene hexachloride, a slective insecticide. Scientists at this Station found that activated carbon applied to the soil adsorbed the insecticide and solved the growers problem.

Herbicides Widely Used

At that time selective herbicides for commercial crops were few and little used. In recent years many highly selective herbicides have been developed. Among the most effective are those that act through plant roots to kill weeds in their early stages of growth. These herbicides, notably two of the triazine group called atrazine and simazine, are used to control weeds in thousands of acres of field and weet corn, ornamental nurseries, and many other crops. A small amount of these triazine herbicides may persist in the soil for more than one season and

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TURFGRASS RESEARCH AT UNIV. OF CONN.

The Connecticut Association of Golf Course Superintendents is supporting a turfgrass research project at the University of Connecticut. The CAGCS feels that the work being done at UConn is vital to our industry and is a positive step forward for the University as it becomes more engaged in the turfgrass field.

The turfgrass research project has been initiated to study the influence of cultural techniques and soil properties on the growth and development of annual bluegrass (*Poa annua* L.)

A considerable amount of effort has been directed toward means of controlling annual bluegrass, but research in regard to it as a turfgrass species has been limited.

The research project includes field and greenhouse work.

The field work is studying the combination of nitrogen application scheduling and phosphorus levels on development of annual bluegrass seed head populations and growth over summer stress periods. The experimental area for this phase of the work is on the 7th fairway at the Wethersfield Country Club through the cooperation of the club and Superintendent Fred Bachand. The work will take two years to complete.

The greenhouse work will study the influence of pH and calcium-magnesium status of the soil as factors for the development of annual bluegrass. This phase of the project will start in October 1971 at the Agronomy Research Farm in Storrs, and take one year to complete.

THE GRASS CATCHER

by Charles G. Baskin

The Watertown Golf Club opened its six new holes on September 11. They replaced 6 holes that were taken by Taft School for its expansion program. The new holes add over 950 yeards to the total length of the layout and change the par from 68 to 72. One of the new holes measures 618 yards with three water hazards. The new holes have added to the degree of difficulty of the Watertown links as shown by the opening day's play where a 76 was the best score posted.

The National Safety Council points out that golf cars have introduced a new element of risk to the game of golf. With 200,000 golf cars in use and sales booming, the accident rate is expected to grow. The drunken driver is creating a problem on the golf course as well as on the road. Of course, all these problems are compounded if Spiro Agnew is close-by!

It is interesting to see the number of highly educated and trained individuals who are attracted to the golf course superintendent profession. Many of these individuals are presently seeking jobs as golf course superintendents or as assistant superintendent. Our association has a list of young men who are seeking employment as an assistant superintendent.

A recent article in a trade publication mentioned that rinsing pesticide containers and pouring the material back into the spray tanks gives the operator use of the residual material normally left in the container and also reduces the pollution potential in ultimately disposing of the container. Laboratory tests show that about 6 ounces of pesticide remain in a

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CONNECTICUT ASSOCIATION OF GOLF COURSE SUPERINTENDENTS

The object of this association is to promote research, education and an exchange of practical experiences in the field of turf grass culture so that the increased knowledge will lead to more economic and efficient management of golf courses and related turf areas.

The CONN CLIPPINGS is an official publication of the Connecticut Association of Golf Course Superintendents.

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CAGED BEES PUT TO WORK

Red-budded mountain laurel can now be produced in quantity using a technique devised by Dr. Richard A. Jaynes of The Connecticut Agricultural Experiment Station.

He caged bees with selected parent plants and the bees pollinated the laurel flowers effectively. Pollination of individual flowers by hand is tedious and time consuming. One or two bumblebees in a cage, however, keep working throughout the laurel blooming period. Honey bees are also good pollinators, the study showed, but they live only a day or two away from their hive.

The new technique proved to be effective in propagating red-budded selections of mountain laurel. For the first time, Dr. Jaynes reports, nurserymen can now produce seed of this selection and market the plants as a known color form before the plants have bloomed. Cuttings for propagation can also be taken from young seedlings before they have bloomed. Such cuttings root better than those from old plants.

The caging technique was also effective in making crosses between mountain laurel and sheep laurel, and in producing seed of white-flowering sheep laurel.

Color photos of laurel selections, and a report of Dr. Jaynes research, are given in Circular 240 of the Station. Connecticut residents may address requests to Publications, Box 1106, New Haven 06504.

BRANCH CROTCHES THAT SPLIT

Splitting at the crotch is most likely to occur when in the early life of a tree two leaders develop and, growing upright and nearly parallel, form a narrow angle between the two stems. As the stems increase in diameter they become closly appressed well above the point of original development, but the bark that covers the two branches prevents the growth of strong, connecting woody fibers. This seam of bark usually is quite visible after splitting occurs. Narrowly V-shaped branch crotches always are weak in structure and may split under any abnormal strain.

Aside from the mechanical injury, the split forms a pocket in which water is retained after every rainfall and a situation is created that is favorable for invasion of the tree by wood-rotting fungi. Under natural conditions a split crotch seldom if ever, heals.

Shade trees should be inspected occasionally to detect potentially weak, V-shaped branch crotches while the branches are still small. To prevent future trouble, treatment then usually consists of removing the branch of lesser importance to the shape of the tree.

When branches springing from a V-shaped crotch have been allowed to develop to the point where removal of either would mar the shape and beauty of the tree, recommended treatment to prevent splitting consists of installing one or more sections of rigid brace rod at the crotch and placing a system of flexible cables in the crown of the tree. These cables "tie" all major branches together and give them additional strength to resist sudden strains. When actual splitting has occurred at a branch crotch, the two branch stems are drawn together with block-and-tackle until the crack closes, and then the brace rods and cables are installed. Treatment of weak or split crotches is economical and may prolong the useful life of a fine shade tree for many years.

TOURNAMENT COMMITTEE REPORT

Following are the results of the Connecticut Championship, played this year over the 36 hole route of the Golf Club at Aspetuck and New Haven Country Club. Both courses were in exceptionally fine condition and Bob Osterman and Jim MacDonald are to be congratulated.

Class A Championship Flight

1st Gross (tie)	Ed Bedus, Frank Lamphier	155
2nd Gross (tie)	Leon Kowalski, Dick Cook	165
1st Net	Ben Kowalski	146
2nd Net	Bob Viera	148

Class B

1st Gross	Bob Osterman	195
2nd Gross	Joe Bidwell	202
1st Net	George Christie	162
2nd Net	Harry Meusel	165

Seniors

1st Gross	Henry Sherman	177
2nd Gross	Sid Terhune	206
1st Net	Andy Lentine	150
2nd Net	Chet Jenkins	171

Associates

1st Gross	Bob Scully	164
2nd Gross	Bill Somers	179
1st Net	Frank Downey	154
2nd Net	Carl Wallace	159

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injure non-tolerant crops that follow in the rotation.

We have found that activated charcoal can be used to inactivate residues of the triazine herbicides when non-tolerant crops are to be grown in these fields.

In our work on inactivation of residues we followed the lead of Gast, a researcher with the company manufacturing the triazines in Europe. He showed that activated carbon tied up herbicides just as it had tied up the benzene hexachloride insecticide in our potato fields. Experiments this year and last confirm his results under greenhouse and field conditions in Connecticut.

Initially we set out to determine how much activated carbon is required to inactivate a known level of herbicide in the soil. Known rates of simazine and atrazine were applied to soil and incorporated to simulate residues. Activated carbon was then applied and incorporated into the soil. Then we planted various indicator crops.

An amount of activated carbon approximately 200 times that of the herbicide residue protected seeded snap beans, and transplanted cabbage and tobacco planted immediately after treatment. Garden beets and oats, even more sensitive to triazine residues than beans, may require twice this amount of carbon for complete protection. Thorough mixing of the carbon into the soil containing the herbicide residue is essential for good results. The treatment was most effective in the field when the amount of simazine or atrazine was ¾ of a pound per acre or less. Fortunately this is about the range of residues left in the soil one year following applications of 2 to 3 pounds of simazine or atrazine to the acre.

Granular Forms Less Effective

The carbon used in our work is a water purification grade called "Aqua Nuchar A," the same as that used to tie up the benzene hexachloride in potato fields in the late forties. Granular forms of activated carbon, with much less surface area, are not apt to be as effective. Finely divided activated carbon is dusty and dirty and dry applications are possible only in the still of the early morning or evening. However, spray applications with high gallonages and large nozzle tips now appear promising.

In experiments with other methods of applying carbon, we discovered that suspensions of carbon in the transplant water (½ to 1 pound in 6 gallons) prevented injury to cabbage and tobacco plants grown in soil containing residues of simazine or atrazine. Since many plants develop resistance to herbicides as they grow, such a "root zone" treatment can forestall or eliminate serious plant injury from herbicide residues. In our experiments root zone treatments were most effective in protecting transplanted cabbage and tobacco where atrazine residues were a half pound or less to the acre. Root zone treatments in transplant water greatly reduce the amount of carbon required per acre and they are easily applied.

Dipping Roots Suffices

The transplant water method can provide protection to marginally sensitive plants from post-planting applications of herbicides. We also found, however, that merely dipping the roots of strawberry plants, forsythia, and privet cuttings into activated carbon before transplanting reduced or eliminated injury from applications of simazine after planting. Since activated carbon also adsorbs other herbicides, treatments of this type should improve selective applications of herbicides in general. For example, by including activated carbon in the sand-peat media surrounding chestnuts in a field planting, we have protected them from the herbicide diphenamid.

The action of activated carbon in protecting plants from herbicides is envisioned as simple adsorption. The charged carbon particles hold the herbicide so tightly that plant roots cannot take it up.

Studies with activated carbon and herbicides continue, for there are many questions left unanswered. Results obtained thus far, however, show that activated carbon is an effective antidote for herbicides in soils, thereby making these useful materials even more selective.

Editor's Note: This article was published in 1964. It contains valuable information for today's superintendent.

SOIL TESTING, HOW AND WHEN TO SAMPLE YOUR SOIL

Soil test results are an excellent aid for planning your fertilizing and liming program or for analyzing problem turf areas on your golf course. However, how to take the soil sample is important if correct interpretations are to be made.

The sample should be taken from the same soil type. Do not mix different soil types. Soil maps are available for many Connecticut counties from the Soil Conservation Service, United States Department of Agriculture, in your area. These maps will help you to know the soil types you are working with. Greens, tees, problem areas, and steep slopes should also be sampled separately.

The coring tube is the best sampling tool available. Take 20 or 30 cores at random over the area and mix thoroughly. It is important that this step be followed so that the final sample is representative of the area. (The sample is small when you realize that an acre of soil at an 8" depth weighs approximately 2 million pounds and some samples represent 5 to 10 acres and sometimes more.) The cores should be of equal volume, and the composite sample should weigh about one pound. From this sample, send approximately one cup to the soils laboratory for testing.

If the soil has excess moisture, dry the sample before shipping. This helps to expedite processing the soil sample when it reaches the soil testing laboratory.

Place the soil in a clean container to avoid contamination and label the sample so it may be properly identified.

The best time for taking soil samples is in the Fall season. It offers several advantages:

1. Areas of poor growth over the past senson are fresh in your mind.

2. It is at a time of the year when the Superintendent has more time to sample properly.

3. It gives the soil testing laboratory a chance to spread out their work load, thereby processing your samples faster.

4. It allows the Superintendent a chance to study the soil test results, plan ahead for the next season, and order his lime and fertilizer needs well in advance of the busy season of Spring.

If a critical turf problem arises anytime during the growing season and a soil test is needed, every effort is made to process the sample and return the results as quickly as possible.

From: Univ. of Conn.
Plant Science Dept.
William M. Dest

IN CASE OF ILLNESS

Please pass the word around anytime you hear about illness striking any of our members. Also, give our welfare chairman, Mike Ovian, a call. We would appreciate the help of the wives in this matter.