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# Fitting the Short Course to Greenkeeping Needs

By H. B. MUSSER

Professor of Agronomy, Pennsylvania State College



Dr. H. B. Musser

WHEN the history of the development of the greenkeeping profession in this country is written it is certain that the short course will be recorded as an important contributing factor. It is an outgrowth of recognition by the man on the golf course that the practical art of greenkeeping definitely ties into that whole group of sciences which bear

directly on his business; and a realization that there is need, not only for the mutual study of practical problems, but also for a sound interpretation of fundamental scientific principles. In this respect the short course accomplishes its mission. It represents a step forward in a highly specialized professional field. But it is only a step and should be recognized as such. The entomologist has a four dollar word that comes in handy right here. There is a group of insects that grow up by periodically splitting their skins and emerging as bigger and better bugs. A single stage between two splitting processes he calls an instar. The short course is an intermediate instar in the coming-of-age professional golf management.

Acceptance of this basic premise does not imply that ultimately we are going to discard the short course as something that has outlived its usefulness; and so the simile ends here. On the contrary, it can become an even more important cog in greenkeeping machinery. But its limitations must be recognized. We should not expect it, in its present form, to do things impracticable. Which brings us to the brass tack phase of the subject—an exploration of the practical contributions which the short course is making or can make, and, as a corollary, a frank recognition of its limitations.

## Short Course Contributions and Limitations

As a background for further analysis it may be profitable to examine the generally

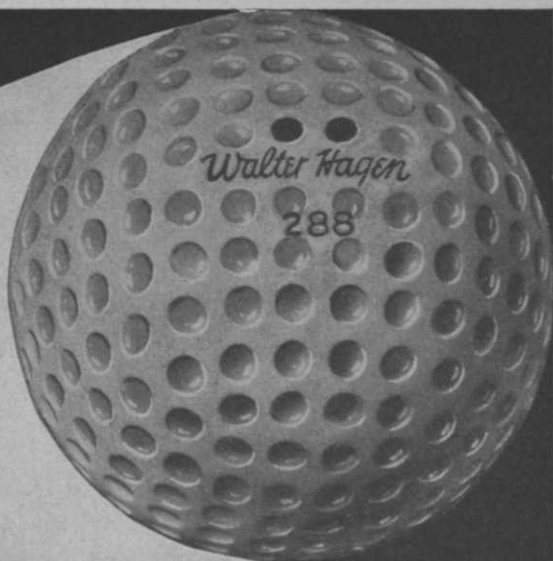
accepted organization of the short course, to determine just what kind of a tool we have. With one exception, the Massachusetts plan, the meetings run for a 2 to 5 day period; once a year. A study of the detailed programs shows that the average time devoted to an individual subject, such as disease control, fairway fertilization, drainage, etc., may vary from one to 3 hours. The titles fall, roughly, into 3 general classes: (1) Basic scientific principles (such as "Absorption of Plant Nutrients") (2) Experimental Results, (which to date are limited) and (3) Practical Golf Course Problems, (almost unlimited).

Anyone who has reviewed the list of subject matter of short course programs, or has listened to the discussions, cannot escape the conclusion that they are of a highly specialized and technical nature. In the large majority of cases they imply a broad background of practical experience and a quite thorough knowledge of basic principles. Thus, the presently constituted short course is not, in the strict sense of the term, a course at all. It is a conference among professionally trained men on subjects of mutual interest. This statement is made with no intention to "split hairs." It has a very practical bearing on the final decision as to how we can best secure maximum values. We will come back to it later as we examine the training problem.

## Types of Training

The subject of training cannot be considered intelligently without some preliminary definition. Do we mean additional training which is adapted to the needs of the individual who already has a broad background of fundamental and applied knowledge, and practical experience? Or do we mean training for the beginner, who must start from scratch? These questions create a whole series of policy considerations that provide food for thought. They are raised here, merely to point up the problem of attempting to evaluate the so called short course as a training medium.

It would seem to be fairly evident that the short course is, to a degree, adapted to the first type of training. It is of service to the man who already knows how to do a job but wants to know more about the



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why of it. He knows, for example, the effects of nitrogen, but he is ready to go deeper into the subject to learn what actually happens in the soil when he applies different forms of nitrogen. A well conceived and presented program will take care of such matters. Or he may need additional technical information or recommendations from an impartial source to aid him in evaluating a new product. It can also keep him up-to-date on the progress and findings of experimental work being done on turf and in related fields. Thus the experienced man can get additional professional training in concentrated doses and in a minimum of time.

### Lack of Coordination

To date there has been little effort to coordinate the subject matter of conference programs. Individual topics have been chosen for discussion with little consideration for their relationship to what is to follow in the next hour, or the next day. And this should not be interpreted as a criticism, but merely as a statement of fact. It is doubtful whether the system could or should be changed. Too many individuals are coming to the meetings with too many questions about too many different problems, to justify concentration on a too limited agenda.

If this is a fair outline of the situation with regard to our present type of short course, how, then, can the man on the job get additional technical training? Is there another step forward, another "instar" that will meet this need, and mark one more milestone in the progress of the greenkeeping profession?

In attempting to find an answer to this question certain possibilities immediately suggest themselves. The present conference type meetings can be expanded into short courses of 2, 4, 8 weeks or longer, duration. There are some serious objections to this. In the first place, there is the matter of cost. Many individuals who would welcome an opportunity for more intensive study of technical subjects have financial obligations which would preclude any extended attendance at short courses, if any material extra outlay for living expenses were necessary. The time involved is also a factor. The job must go on and sometimes it is not practicable to leave it. A third item which has a bearing at the present time, and which will probably continue to be a problem for the next few years, is the matter of facilities at the institutions conducting the courses. Class rooms and laboratories are filled to capacity with full time students and in many instances living accommodations for limited periods are practically non-existent.

There is an alternative. Why not eliminate all these objections at one stroke? Why not take the short course to the man?

Why not establish local study groups, so centered that they could be conveniently reached from home every day? All that is involved is a place to hold the sessions, a choice of subject matter, and a request to your state college for a competent instructor. It is relatively simple to take care of the first two items. It should be possible to arrange for the third through the College Extension services. If your college cannot provide an instructor find out why not. You and your club pay taxes! So here would seem to be an opportunity to go into technical subject matter much more thoroughly than is practical under the 'one-hour-to-a-subject-once-a-year' plan. I offer it for consideration.

### Training From Scratch

And that brings us to the second training problem—what about the beginner? Certainly a steady supply of young men is needed both for the practical course management jobs and the technical problems on which a pitifully few of us have been beating our brains out. How are these youngsters to get an effective type of training that will fit them to take over; as eventually they will have to do?

To answer this one, we must first have a pretty definite idea of what constitutes effective training. It would be bordering on the absurd to attempt to list in detail all the things which the competent superintendent must know in order to do an efficient job. But an examination of even the commonplace operations on the golf course will show that they are so closely related to basic scientific principles that often it is impossible to determine just where the science grades into the practice. Therefore, effective training certainly should include some knowledge of the basic sciences involved—botany, chemistry, physics, etc. But it must also include an understanding of how to put these fundamental principles to work. The theory of this can be learned in the class room, but actual practice is an essential, also. Which brings up a third requirement of effective training—practical experience under the direction of a competent and successful superintendent.

It is questionable whether winter short courses can be designed that will effectively meet these requirements. The type which we have been discussing (the conference, and local study group adapted for the experienced man) certainly does not. If it is made elementary enough to serve the beginner it loses its professional value, in large measure. Another serious difficulty under such a set-up is the problem of assuring adequate practical experience as a part of the training program. The necessary informal type of organization of the group would make it exceedingly difficult, if not impossible, to adhere to a definite set of experience requirements for

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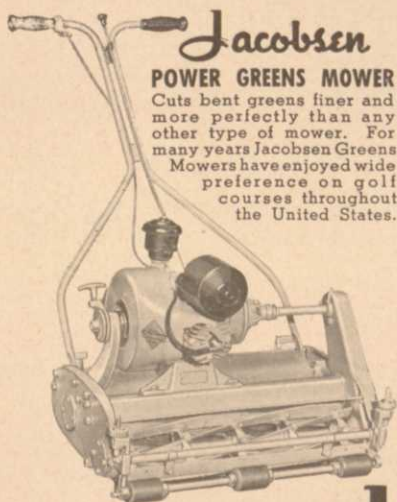
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each individual. But the time element is the most fatal objection. It would require too many sessions extending over too long a period to give anything worth while to the individual who must start in at the beginning.

### A Complete Training Program

An alternative is the establishment of a complete training program at the state college,—or anywhere else where facilities may be available. The essentials of such a program should receive some very careful consideration; not only from the standpoint of the individual who takes the course, but also in relation to its impact on the Greenkeeping profession.

On the first count, if such a course is to meet its obligations (to really train competent men) it must be broad enough and extend over a long enough period to cover the field. The 4, 8, or even 12 weeks annual short course will not do this, unless it is so organized that it can be followed in successive years by progressively advanced work. For a clearer picture of what is involved, consider the amount of fundamental knowledge which a greenkeeper uses in making a decision on as standard a matter as his fertilizer program. He knows his soil type and its condition, he has a working knowledge of the requirements of his grass species or strain; he knows the relationship of the weather to the action of the fertilizer; he knows about plant nutrients and fertilizer formulas; and their possible bearing on disease infections. He also has a backlog of basic principles to draw on—cause of soil acidity, solubility of plant food elements, the breakdown of organic matter—to list just a few. Added to all this he knows when and how to put the fertilizer where he wants it.

Multiply this example by the number of other management practices which are of comparable importance, and we cannot escape the conclusion that no abbreviated period of training can be expected to turn out a competent man from a standing start. Even though all this work could, in some way not presently evident, be crowded into a limited time, there would still be the problem of the inability of the individual to absorb it. Experience indicates that a minimum of 2 full years of carefully supervised training would be required to cover just the necessary basic and applied technical subject matter. And if 2 years in the classroom for the theory, certainly at least 2 full seasons, in addition, on the golf course, for the practice!

Is this proposal too radical? Does it aim so high that it will result in only a limited enrollment of those who are sincere and ambitious enough to be willing to "sweat it out?" From a professional point of view, perhaps this should be one of its strongest recommendations. Could such a

training program be tied into a plan for the active participation in, and even a measure of control over, the qualifications of prospective members by the greenkeeping profession?

I raise this question with no thought of attempting an answer. It would be presumptuous to do so. But these are abnormal times. The provisions of the G. I. bill have stimulated a tremendous interest in every field of education. Already, letters are coming in to us at the rate of 3 or 4 a week asking about the possibilities of training for turf management jobs. The state college is a public institution. Its first concern is to render the type of service its constituents demand, particularly when those constituents are veterans who deserve every consideration. It cannot refuse to recognize its obligations; but a superficial program that contemplates doing anything less than a complete job, is of no service to anyone,—least of all to the man whom it is attempting to help. It is this danger that must be avoided. If a longer and more systematically organized training period will do it, and at the same time put an effective tool in the hands of the greenkeeping profession, plans to perfect such a program and get it in operation should be a first order of business.


### Research Is Essential

The second part of this topic—The Short Course as a Source of Technical Information—is so closely interrelated with the first that I have made no effort to separate them up to this point. What has already been outlined should serve to sufficiently point up the possibilities and opportunities. One point, however, deserves additional emphasis. It is the necessity of supplementing any type of short course, if it is to provide adequate technical information, with a well rounded turf research program. It is true that much of the subject matter of the basic sciences can be presented without reference to current research. Many of these fundamental principles already have been established and are universally accepted. It is when we attempt to apply these perfectly good scientific facts to the practical job of growing turf that we begin to stumble. To illustrate:—The biologist understands the basic principle of growth by cell development. Similarly, the chemist can tell us much about the solubility of plant food elements in the soil. The trick is to properly interpret the combined effect of these, plus many other basic principles, on plant development under many varied conditions. This requires carefully controlled experiments. Such research has been so limited in the specialized field of turf production as to be almost fragmentary.

For this reason one of the jobs of the short course has been to attempt to apply

*(Continued on Page 52)*

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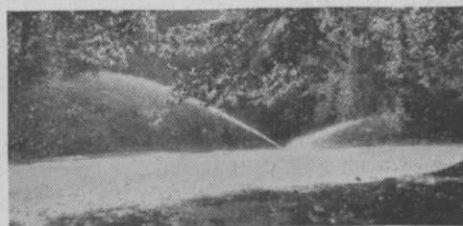
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## Report Lawn Sinox Effective in WEED CONTROL

By PAUL BURDETT

During the past three years course supts. in the Chicago district have made rather extensive and promising use of Lawn Sinox in control of clover, crabgrass, knotweed, chickweed, crabgrass, dandelion, plantain and buckhorn. In no case were players aware that a weed control project was being undertaken as there was no discoloration of fairway or greens grasses, bent or other varieties.

Lawn Sinox is one of the di-nitro-ocresalates, a material that has been used extensively in the west and northwest for control of weeds in small grains and flax. Its use on lawns for the control of weeds at the same strength as used in the grain fields caused great discoloration to the turf, even killed out the bent in greens where it was originally used.

Credit for discovery of the effectiveness of the material when applied in a mild solution at frequent intervals must be given to Fred Millies, gkpr., Hillside (Ill.) GC. Millies, plagued with the seemingly impossible task of keeping out clover, applied Lawn Sinox in September to his greens at the rate of 1 pint to about 250 gallons of water, just as he had applied his control material for dollar spot. He noticed a curling of the clover leaves and a thinning of the clover and within two weeks, repeated the application, and again about the middle of October. The clover went into the winter in a weakened condition and failed to re-establish itself the following spring.

During the next two years Lawn Sinox was used on several other courses and careful observation enabled the working out of the method of use and rates of application now suggested. During this time, observation was made on the effectiveness of Lawn Sinox as a control material for brownpatch and dollar spot. At that time mercury was not available and many courses used Lawn Sinox for this job. While not completely effective at the strength used for the control of weeds, Lawn Sinox had some merit at this job. When used at strengths needed to be effective as a fungus control Lawn Sinox sometimes caused some discoloration.

The method of using Lawn Sinox is simple. On bent greens 2 ounces of Lawn Sinox in 50 gallons of water is applied to 1000 square feet of surface. A power sprayer, McClain Hydromixer, or sprinkling can, can be used, and if a power sprayer is used, the pressure must be reduced so that the solution goes on as a coarse mist and the hose must be held up

so the spray is not driven into the grass but rather falls gently on the foliage. Treatment must be continued until control is established which usually takes about 8 applications at weekly intervals. During very hot weather use 1½ ounces per 50 gallons of water over 1000 square feet. For fairways and blue grass lawns the rate of application is 4 ounces to 40 gallons of water over 1000 square feet. This can be applied with any convenient equipment, power sprayer, sprinkling can, McClain Hydromixer. Treatment must be repeated at weekly intervals until control is established.

Andrew Heim of the Medinah (Ill.) CC devised an ingenious method for the application of Lawn Sinox to fairways. He rigged a valve and inlet under a fairway sprinkler, attached the hose of his power sprayer, turned on the sprinkler and valve from the sprayer and the force of the fairway sprinkler diluted the strong solution from the sprayer and carried the weaker solution over the fairway. Two men with the power sprayer and the fairway watering system covered 18 fairways in two days. Control was splendid. The same method was used on sprinklers on the greens and resulted in a greatly reduced cost of applying Lawn Sinox to greens. Other applications of Lawn Sinox to lawns and fairways have proved the effectiveness of the material. The material cost per fairway is estimated at \$14.00 per acre and for 18 greens at \$45.00.

Knotweed had presented a serious problem at the Oak Park (Ill.) CC. After some years of experimental work on small plots with mild solutions of Lawn Sinox, Edward B. Dearie, Jr., Gkpr., treated several fairways for control of this pest. Dearie had treated knotweed in the experimental plots and decided that the second week after germination was the best time to spray knotweed, so in April 1945, the work was done. Dearie used 2 quarts of Lawn Sinox in 100 gallons of water and applied the solution at the rate of about 150 gallons per acre. A second application was made a week later. Kill was complete and thorough; the permanent grasses in the fairway were not discolored and in May, the spots were seeded.

Crabgrass has been controlled on both greens and fairways with the recommended rates of application. After 5 treatments, the crabgrass plants seem to be heaved out of the ground and the plants can be pulled up without difficulty, in two more applications, the plants fade and disappear.

Leonard DeBruyn, Gkpr., Ridge CC, rid his greens of an extremely troublesome pest late in the summer of 1945 while treating his greens for clover control. DeBruyn has had to fight a small spreading red stemmed weed (identified as

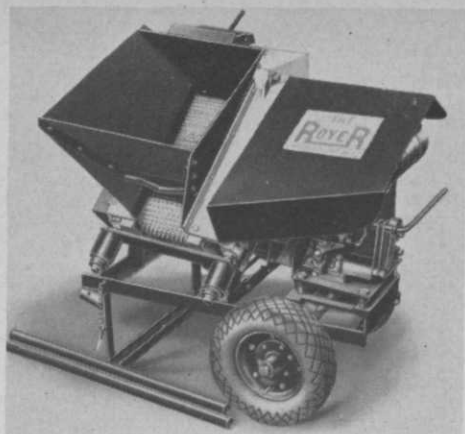
spotted spurge in the Chicago area) which appeared about August 1st. The first three applications of Lawn Sinox removed this weed and "Brownie" had no further trouble. The few plants of crabgrass that appeared on Brownie's greens also dried up during treatment.

In every case where a number of applications of Lawn Sinox have been made there has been a marked increase in the growth rate of turf. Bent grasses have grown over the spots as the weeds were dying, blue grass has been stimulated as though fertilized.

## New Royer Powered by Gasoline Engine

The lifting of wartime restrictions has again made Royer Compost Mixers available for golf courses, where one of the most popular models has been the Royer "Junior," hitherto furnished only as an electric motor driven machine. While this model is portable, it can be used only within practical range of an electrical outlet. There has been an expressed demand for a compost mixer of this size which could be used anywhere on the course.

The manufacturer, Royer Foundry & Machine Co., Kingston, Pa., has according-



ly developed the Royer "Junior G," shown in the illustration, which is driven by a 1½ h. p. gasoline engine. This portable self-contained machine handles material as fast as one man can shovel it into the hopper. No matter what compost materials are used, this Royer thoroughly shreds, mixes and aerates them, reducing the mixture to pea size. The machine automatically eliminates sticks, stones and trash, and discharges onto pile or truck the kind of top dressing which readily yields its nutrients to the grass roots.

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