

to provide employment. Conditions not improving in the spring of 1931, welfare labor was used. The workers gave one or more days per week in return for their welfare orders.

In the early winter of 1933 the CWA continued the work of improving the course, also supplying the labor to construct a fully equipped clubhouse. For this club, however, the city of Lynn supplied all material, the CWA the labor only. Under ERA the work of improvement of fairways and rough continued.

Many municipal golf courses are equipped with convenient clubhouses whose facilities are available during the winter months to clubs and other social organizations which otherwise could not have suitable places for their evening parties. I mention this because it is quite well known that such social functions can

be carried on in city-supervised property on a very much better and more wholesome atmosphere than is possible in many privately hired locations. Well conducted dances can be carried on in such city golf clubhouses which will offer a counter attraction to the ordinary dance hall or road house.

Winter sports on municipal golf courses is entirely feasible in New England and the more northerly states. Skiing and snowshoeing under proper snow conditions attract hundreds. Skating and tobogganing can be had at small expense.

The popularity of golf both public and private has been increased tremendously and the game has profited greatly by the activity of municipalities in the sport. No other single effort in recent years has done so much for community recreation as has municipal golf.

## Are Weeds Your Trouble?

By Fred V. Grau\*  
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**TURF** is man's attempt to clothe the soil with a covering of grass to suit his purpose. Weeds are nature's way of clothing the soil when man's turf covering is insufficient to compete with the forces of nature. Plants are weeds only in man's definition and as they interfere with his pleasures or cause him a loss of revenue in his vocation.

Grasses that are used for turf are really abused. They no longer develop as nature intended them to develop but are kept in an abnormal condition by constant bruising, maiming and mutilation. Under such circumstances many plants perish or are so weakened that weeds come in to take their places. To the spoiled eye of the golfer, this is unsightly—so weeds must go. That is the reason we have been forced to develop modern methods of weed control. In the past two decades a vast improvement has been made in American grasses by the discovery of improved strains for existing conditions, so when weeds show up it is an indication that something is wrong with the cultural methods.

Weed control is accomplished through,

and is synonymous with, sanitation. This word is all-inclusive of all the devices used to produce the perfect turf. At the start, the greenkeeper is looking for trouble if he uses topsoil or a seed bed that is not free of weed seed. Several methods are available to attain this end: sterilization with steam, dry heat or chloropicrin; exhaustion of the weed seedlings by fallowing or continuous cultivation; the growing of a cover crop to cause great vertical competition to smother out unwanted growth; and by maintaining the rational fertilizer level with accompanying maximum physical condition.

### Be Sure of Your Seed

The quality, purity and cleanliness of seed should be beyond question, for many weeds may be introduced by using unclean or contaminated seed. Time of seeding so the grass seedling will not enter into competition with the weeds must be considered, as well as the rate and method of seeding.

After the turf is up, sanitation requires that the strictest attention be paid to liming and fertilizer practices. The proper height of the cut for the area planted must be determined and strains developed

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which will adapt themselves to the different purposes desired. Insect and disease damage, which promotes weeds, must be carefully diagnosed and steps taken to remedy. Climatic conditions must be considered. Moisture should be controlled as close to the optimum as possible. This is but a brief outline of the many things a greenkeeper must know.

Considering all of these factors and practices as links in the chain of success, it is not surprising that one or more may be neglected, even when handled by experts, and any deviation from the right way tends to encourage weeds. Great advances may have been made in finding the "right way" in the past few decades and many more new things are bound to be discovered in the years to come.

### Healthy Turf Best Control Method

Our problem, at the present time, is to overcome an infestation in turf that has occurred through the operation or inoperation of some detail of sanitation. Our main thesis is that a healthy, well managed turf composed of well chosen, aggressive strains of grasses, is the best weed control method known. The use of chemical is only a means to an end—one step in the attainment of the goal. As chemicals are used for the control of insects and diseases, why not for weeds?

When one goes about destroying a crop of weeds in existing turf there are several things to consider. These are: (a) the cause of the weeds being there—drainage, fertility, insects, disease, clipping, etc.; (b) kind of weeds; (c) kind of grasses—the last two items control the choice of chemicals; (d) seasonal factors, and (e) soil type growth. Upon determining the cause, plans should be made to remedy it. The types of weeds must be determined in order to select the proper method of overcoming them.

The various grasses have definite reactions to chemicals. Therefore, it is quite

Life magazine, July 24 issue, contained a swell series of Monterey peninsula golf courses, and views of some of its course maintenance problems. Following the Monterey series was an amusing set of cartoons by H. T. Webster, showing his popular character Caspar Milque-toast as a green-chairman. Life's head on the cartoon series is wrong. It reads "Mr. Milque-toast is a Greenkeeper." Greenskeeper and greenkeeper both appear in Life's golf copy. "Chairman of the greens committee" also is used by Life. Greenkeeper and chairman of the green committee are correct.

necessary there be an intelligent adjustment of choice of materials so that the grass is not injured. Soil type plays an important part in the selection of the proper chemicals, for what may work on one type may not work on another. Moisture is another factor to be considered. The seasonal factor is also important, as too late an application, after seed has ripened, will not be as effective as one applied before ripening.

### Weeds In Two Classifications

In order to successfully apply control measures, weeds can be put in two classifications. The first grouping is as follows; annual—plants whose seed germinate in the spring, mature and produce seed the same season and then die (examples are crab grass, goose grass, etc.); winter annuals—plants that seed in the fall and which germinate and grow through the winter (examples are chickweeds, etc.); biennials—plants that seed in the fall but do not germinate until spring and require a second growing season before maturing a seed crop, and dying (examples are dock, plantains, etc.); perennials—plants that live year after year, usually producing a crop of seed annually (examples are thistles, etc.).

The other grouping, in accordance with growth habits and chemical control, is:

Rosette—plantains, docks, dandelion, thistle. Spot method of control, a bit of poison on each individual plant, may be used when the plants are scattered. In a heavy infestation a general application of spray or dust is used.

Mat-forming—mouse-eared chickweed, veronica, etc., modified spot or patch treatment if it occurs in scattered areas. Otherwise general spraying or dusting.

Grassy—crab grass, *Poa annua*, goose grass, etc. Only occasionally can the spot method be used. General application of dust or spray is employed.

Vining—annual chickweed, ground ivy, clover, etc. Only general application of dust or spray.

Before chemicals can be applied for weed eradication consideration must be given to the tolerance of the various turf grasses to the effect of the chemicals. Some are more tolerant and resist injury more than others. Heading a list of this description would be Kentucky bluegrass and fescue, which are extremely tolerant; perennial rye grass, Canadian bluegrass,

*Poa trivialis*, *Poa annua* (more tolerant to arsenite) and finally, the bents—velvet, creeping and seeded.

It would be ideal to kill the weed infestation at one application of chemical but this is not always possible. Injury and appearance of the grass must be considered so rates of chemical application must be adjusted to the grass as well as to the weeds.

The principal chemical used in weed control is sodium chlorate, crystalline salt that becomes highly combustible when mixed with organic matter. Care must be exercised in its use. Its killing effect is caused by the chlorate attacking and breaking down active chlorophyll so no food is manufactured, and the plant dies. It is most effective when applied during the warm parts of the year. The rapidity of effect is doubled with each 10 degree rise in temperature. In cool weather it breaks down very slowly and is apt to cause turf injury. Sodium chlorate is most effective on the grassy types of weeds such as crab grass, *Poa annua* (which is very susceptible) and goose grass, which is not so susceptible and very difficult to kill.

#### Check Sanitation Requirements

The rates of application depend on the grasses present. If there is a heavy crop of crab grass and it is not necessary to be careful of the other grasses present, 2½ lbs. per 1,000 sq. ft. is effective. If the turf is of bluegrass and it is desired to save it, 2 lbs. per 1,000 sq. ft. could be applied. If other grasses are present it might be necessary to scale down to ½ lb. per 1,000 sq. ft. and make two applications. Following the chemical treatment, sanitation requirements should be closely checked, such as lime supply, fertilizer practices, height of cut, etc., in order to determine the cause of the inroad of the weeds so it will not be repeated.

Sodium arsenite is also crystalline salt. Its killing action is not thoroughly understood. Differing from the chlorate, it is best used during the cool months and is adapted to the mat-forming and vining types of weeds. It can be used successfully on crab grass but not on *Poa annua*. Being a very powerful poison, it must be handled carefully. It is completely soluble in water and becomes quickly fixed in the soil. The rates of application depend on the tolerance of the grasses. Bluegrass and fescue will still stand applica-



Dick Bartell, Chicago Cubs' shortstop shot a one-over-par 74 at Mohawk CC, (Chicago district), July 10, to be medalist of the Cubs-Sox ball-players' tournament conducted by Lew Waldron, Mohawk's energetic pro. Jimmy Dykes, Sox manager, was second. In the above photo, Dizzy Dean, Cubs' pitcher, seems to be getting a big kick out of describing for Announcer John Harrington, a portion of the driving contest.

A match between sports writers and sports broadcasters also was a feature of the tourney. Special broadcasts from the tournament were put on by John Harrington and Charley Grimm of Station WBBM. A gallery of 500 attended.

tions of 4 to 6 oz. per 1,000 sq. ft. though it might be wise to start with a little less. The more tender types of grasses will not stand more than 2 oz. per 1,000 sq. ft. at an application, but several applications can be made. Don't expect one application to make a complete kill.

There are two methods of distribution—dry and wet. In the former the required amount of chemical is mixed with topsoil or sand, in order to obtain a fairly even distribution. About 12 qts. of bulk mixture is applied to 1,000 sq. ft. of area. This may be broadcast by hand or by machinery.

In the wet method the chemical is dissolved in water and applied either with barrel pump and power sprayers equipped with single, orchard, or multiple nozzles or boom sprayers, oil can (spot method on dandelions), sprinkling can (not so good, distribution too uneven), or knapsack sprayer (very good for medium-sized areas).

It is important that the spray equipment be accurately calibrated so you will know exactly the quantity it will spray on a measured area. Once this is determined it is easy to figure the amounts of solution for each application.

Be sure not to miss or over-lap. In the former, weeds will not be killed and the way is open for a fresh infestation, and in the latter, the grass may be killed by

the double application. Weeds which have dense root systems may have only the tops killed by the chemical application and will come back in a few weeks. Cases of this kind may take many applications to make a complete kill.

It is always wise, when one is not sure of results, to start with a low rate and use several applications rather than risk serious turf damage with one maximum application.

Excessive soil moisture slows up the action of the chemical. Clover in greens indicates unhealthy condition, the same as any other weed.

## Club's Drastic Treatment Brings Weedless Fairway

By Edward B. Dearie, Jr.

**M**ANY golf clubs have fairways that are in especially horrible condition. When a fairway of this sort is on a par-5 hole, where the shots of average players may go almost anywhere and, for the dues they pay, the members are entitled to fighting chances for their 6s, 7s and 8s, the aggravation of poor turf is bad for all concerned.

The 16th fairway at the Oak Park CC (Chicago district) was one of these bad stretches. It consisted of about 80% weeds—dandelions, chickweed and clover. None but the best or luckiest player could find a wood club lie on it. We tried chemical weed extermination, giving it treatments of 6 pounds per acre of arsenic acid on July 6, 18 and 26, 1938. The hole is 585 yards long and has a fairway area of 4 acres.

After the arsenic acid treatments, the fairway went out like a light. The weeds were killed but there wasn't enough grass left to provide for play. We had winter rules on a dust bowl fairway. Naturally there was distress and complaint from members who didn't understand our drastic action.

### Went After Grubs, Too

The fairway was then thoroughly disced, four different ways. Arsenate of lead was applied at the rate of 250 pounds an acre. I am convinced that grubs are responsible for the destruction of more grass than is commonly recognized and

the results of the arsenate of lead treatment seem to confirm my belief.

Milorganite and 6-12-4 at 1,200 pounds per acre and 300 pounds of seaside bent with 700 pounds of bluegrass, all was applied the same day, August 22. Milorganite was applied at three times the rate of the 6-12-4. The fairway was rolled and cut September 17 and three times a week thereafter until late October. By the middle of October this new fairway looked almost as though it were years old.

The entire job cost about \$410.

Now the fairway has heavy, firm turf. It is virtually weedless and without clover. A ball sits up like on a wooden tee. Widely travelled pros such as Horton Smith, Tommy Armour, Ralph Guldahl, Byron Nelson and "Dutch" Harrison consider it one of the world's finest stretches of fairway turf. Oak Park's members delight in it and brag about it.

It is one of those jobs that at first keep those responsible for course condition awake nights worrying, but later has a very happy ending.

## \$25,000 Prize Money for California Tournaments

**C**ALIFORNIA Association of Open Golf Tournament Sponsors have approved following tentative schedule for the coming winter season:

Long Beach Open—Dec. 30-31, \$3,000.

Los Angeles Open—Jan. 5-8, \$5,000.

Oakland Open—Jan. 13-15, \$5,000.

San Francisco Match Play—Jan. 18-22, \$5,000.

Rancho Santa Fe (Bing Crosby) Invitation—Feb. 3-4, \$3,000.

Western Open (Del Monte or Arcadia on new Santa Anita course)—Jan. 27-28, \$4,000.

Possibility of a tournament at Long Beach or Santa Barbara also was discussed. The Western Open switch to the winter circuit still is under consideration. Texas and California are both bidding.

California intends to give a special award to pro making highest showing in its 1939-40 tournaments. Sponsors favor not more than two practice rounds per tournament.

Clifford Rawson, sec.-mgr. L. A. Junior Chamber of Commerce, 1151 S. Broadway, Los Angeles, is chairman of the Tournament Sponsors' organization.