

Arsenate of Lead

By JOHN BABBAGE

THE invasion of the Japanese beetle in the Eastern sections of this country threatened the destruction of turf grasses on golf courses. The problem became so serious that the Green Section realized the importance of devising effectual control measures. Investigations were made by Mr. B. R. Leach of Riverton, New Jersey, and as a result of his research effective measures are now available for combating the grub of both the Japanese and June beetle.

The results of his work showed that the application of dry powdered arsenate of lead to golf courses gave good control of these pests and also retarded and stopped the growth of certain weeds.

Grubs in the soil are a serious menace to turf. They feed on and destroy the root system of the grass. The turf soon dies leaving the unsightly bare areas.

In some instances the ravages of the grubs are so complete that the turf loses contact with the soil and can be lifted or rolled with little effort. Until efforts are made to control the grubs it is a waste of time and money to attempt any turf improvement by reseeding or the application of fertilizers.

When arsenate of lead is used for controlling grubs in golf courses, the process is usually referred to as "grub-proofing" the golf course. There are several different methods of grub-proofing a golf course.

Grub Control

NEW tees and greens are "grub-proofed" in the process of construction but before seed or stolons are sown by applying five pounds of arsenate of lead to each 1,000 square feet of soil surface and raking it in with a short-toothed rake to the depth of one-half inch. Apply arsenate of lead after all grading, smoothing and contouring has been completed.

In established greens and tees where a serious infestation of "grubs" is present, thoroughly mix 25 pounds of arsenate of lead with a cubic yard of top-dressing material and apply it uniformly to 5,000 square feet of turf. Use a broom or rake to work in. Apply when the grass is dry to permit working down through the grass without sticking.

Another method is to mix 5 pounds of arsenate of lead with a bushel of screened moist sand or soil and scatter this over 1,000 square feet of turf. If the second method is used, apply the arsenate of lead only when the grass is dry.

In cases where no "grubs" are present in the greens or tees but damage by them is anticipated, mix 5 pounds of arsenate of lead with a cubic yard of top-dressing and apply it to 3,000 square feet of turf. Repeat with the next four top-dressings.

Once a green or tee has been "grub-proofed," the top-dressing with unpoisoned soil should not be practiced, otherwise, the layer of poisoned soil will be buried and the turf will no longer be "grub-proofed."

As top-dressing is applied to the surface of a "grub-proofed" green or tee, arsenate of lead should be applied in proportion. Use one-half pound of arsenate of lead to each 1,000 square feet of turf, assuming that the top-dressing is applied at the rate of one cubic yard to 5,000 square feet of turf.

How to Apply to Fairways

FAIRWAYS that are infested with grubs should also be "grub-proofed." Arsenate of lead applied at the rate of 250 to 300 pounds to the acre controls "grubs" and worms in fairways and controls certain weeds. Mix it with fine soil or sand and apply with a fertilizer spreader. This initial application should last for at least two years on fairways where no soil washing occurs.

This treatment should insure "grub-proof" fairways for at least two years and thereafter an application of 100 pounds of arsenate of lead per acre applied annually should keep the fairways in "grub-proofed" condition.

Arsenate of lead should be applied to the turf preferably before June 1 if an infestation of "grubs" is anticipated. Where "grubs" are present in the turf, apply arsenate of lead at once regardless of the time of the year provided the ground is not frozen or muddy.

Arsenate of lead when applied to greens and fairways not only controls grubs but also seems to eliminate such weeds as chickweed and crab grass. Although arsenate of lead is a deadly poison there is no evidence of toxic soil condition developing as a result of its use even from repeated applications.

Because arsenate of lead is such a deadly poison it is also used to control many of the pests that infest the trees and shrubs around the club house and on the course. Chewing insects such as worms and caterpillars can be controlled by spraying the foliage with arsenate of lead.

The dilutions to be used varies with the kind of insect to be controlled on the plant being sprayed. This is because it takes a stronger dosage of arsenate of lead to kill some insects than others.

Usually three pounds of arsenate of lead to 50-gallons of water will control most chewing insects. Arsenate of lead is more important to the greenkeeper than his fertilizers because what use is it to have a fertile productive soil that will grow fine turf and beautiful bushes unless we control the pests which ravage them?