

SOIL TO GROW GOOD TURF

NOER

cerned. By producing a scarcity of manure, the automobile compelled the use of other substitutes. So far as turf is concerned, manure is not very efficient. On old green section fertilizer plots, manure was third from the bottom. It ranked next to the "lime" and "no fertilizer" plots.

Chemical weed control is a comparatively new development, yet we must not lose sight of the fact that fertilization and other practices go to make a good dense turf. By a sensible feeding program, we can eliminate weeds, too.

All Grasses Spread

All permanent grasses spread by themselves; some by underground rhizomes, and others by surface runners called stolons. Provided needed food and enough moisture are available, grass will spread and develop dense turf. On the other hand, on some areas weed population is so heavy that it is a slow process to eliminate them by feeding alone. In the old days, such turf was plowed or spaded and the area seeded.

In England the old standby for weed control is lawn sand, made up in this fashion: Approximately 35 lbs. of ammonium sulphate, 15 lbs. of iron sulphate (calcined), and about 50 pounds of sand. It was used at the rate of 2 to 4 lbs. per 1,000 sq. ft. The iron sulphate and ammonium sulphate have a direct toxic effect on the leaves and the nitrogen of the ammonium sulphate encourages growth of the grass. These mixtures have worked quite well over there, where it is comparatively cool throughout the entire growing season. Temperatures around 76 degrees are considered high in Britain. So they can use these materials during the summer months when we have to be rather careful because damage to grass is apt to be severe in hot weather.

Recently there has been a flare for the use of arsenicals—arsenic acid, sodium arsenate, and for sodium chlorate also. With these materials, the principles underlying their use is to defoliate the plants and then there is some toxic effect as well. The arsenicals work through the leaves; sodium chlorate through the soil. This latter is explosive, so it must be

handled carefully and must not come in contact with organic materials, such as clothing. Slight friction is sufficient to ignite this explosive mixture.

The arsenicals are especially good in spring and fall, whereas the chlorate is looked upon as a hot weather weedicide to be used when temperatures are somewhat higher. Chlorate, when used properly, seems to do a very fine job on crab grass, but probably is not as good for other weeds. Usual rates of application are from 1 to 2 lbs. per 1,000 sq. ft. It can be used as a spray or applied dry. Arsenicals—sodium arsenite and arsenic acid—are applied at 1 to 8 oz. per 1,000 sq. ft. With either, discoloration of grass is more severe with the spray method than with the dry method. Since arsenic acid is a liquid, it can be used only as a spray. Sodium arsenite can be used by dry, or as a liquid spray. The dry method calls for 4 or 5 oz. per 1,000 sq. ft. Both materials are effective against clover, buckhorn, chickweed, plantain, and even dandelion, although dandelion is the hardest weed to kill. On all these weeds plants are defoliated within 24 to 72 hours, depending upon outside temperatures and humidity. It is more rapid when temperatures approach 80 degrees, and slower when below that. Within a week the leaves dry up. Then new ones begin to form from latent buds. After these new leaves attain a length of from 1 to 3 inches, it is necessary to treat again and to continue enough times to exhaust the tap root or other storage organs of stored food. The plant eventually dies from starvation. With dandelions it takes from 3 to 4 treatments, whereas with plantain and buckhorn two treatments are often enough. For clover 2 treatments are enough, provided too much water is not used, then it may take 3 to 4 treatments to effect a complete kill.

'43 Is Better—Hinsdale (Ill.) GC has a net profit of \$7,567 this year against \$2,397 for same period last year. Course maintenance is \$4,000 less than last year and the dining room is making a record by breaking even. Pool and tennis income is approximately three times the 1942 figure.