

The Effect of Watering on Brownpatch

THE development of brownpatch on greens is influenced by a number of soil and climatic conditions, including texture and fertility of soil, drainage, temperature, humidity and rainfall. Many of these conditions cannot be controlled, but some which affect this disease can be controlled or at least somewhat modified. Probably the most important of this latter group is watering.

From the standpoint of the health of grass, most greens are overwatered. A good share of overwatering is due to the demands of golfers for excessively soft greens.

A few years ago the Green Section conducted tests on watering greens at different times and with varying quantities of water. Records were kept of the development of brownpatch in connection with the different treatments.

It was found that where only sufficient water was used to keep the grass in good condition, brownpatch could be readily kept in check. Where heavy watering was practiced (five times the quantity used in the lighter watering), the disease was from three to seven times as serious as in the areas receiving the light watering. Where only a small amount of water was used,

twice as much disease developed where the water was applied in the evening as compared with turf watered in the early morning. Where an excessive amount of water was applied, the disease was about equally severe in the areas receiving the water in the evening and in the morning.

Therefore, where greens are watered moderately, early-morning watering is preferable to evening watering. On the other hand, where greens are watered in excess, it doesn't make much difference at what time of day the water is applied.

Much damage caused by brownpatch could be avoided if water were used more sparingly. Reduced watering schedules should be started, however, in the spring. If greens are overwatered early in the season the roots will remain shallow and the greens will therefore quickly suffer in dry periods. On the other hand, if a moderately dry green is tolerated during the spring months there is a tendency for the grass to develop a stronger root system, with the result that less water will be required to keep the turf in good condition during the summer.

Prolonged periods of excessive rainfall during the spring or the summer months make it necessary to adjust watering schedules to take care of the reduced root systems. Contradictory though it may sound, it is advisable to water more frequently after long excessive rains than during periods of normal rainfall.

Spread of the Japanese Beetle

IN THE past 22 years since the Japanese beetle is supposed to have been first introduced into the United States, it has spread until it now continuously infests an area about 11,400 square miles, most of which is in New Jersey but extends into New York, Pennsylvania, Delaware and Maryland. Isolated colonies occur in many other States.

Turf on greens and fairways often has been ruined in the continuously infested areas. Arsenate of lead is applied to the soil either to control this pest or as a safety measure to prevent an almost certain infestation and resulting injury to the turf. This treatment is expensive, costing from \$20 to \$50 an acre, and may have to be repeated after four or five years. In many instances this arsenate of lead has been used as a precautionary treatment against Japanese beetles

on golf courses where there was no immediate threat from these insects. It is therefore important to know something about the distribution of this pest before applying the remedy.

The natural spread of the pest is by the short flights of the adult beetle. Thus, the spread of the continuously-infested areas is only a few miles a year. Isolated infestations scattered in the other States presumably were started by a few beetles that were carried there in shipments of fruits or vegetables.

During the past few years the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture has enforced strict regulations on the shipments of fruits and vegetables from the infested areas. This Bureau also keeps a careful lookout for adult beetles in different parts of the country. Insect traps baited with substances that give off odors attractive to the beetles are set up in various sections. The