

insects, Dow technicians suggest aeration of the area prior to treatment.

Passing over the area with a shallow spiker after fumigation prepares an excellent seedbed. Tests conducted by Dr. W. H. Daniel at Purdue showed that spiking both before and after seeding greatly improved grass stand.

Precautions Suggested

Until more is known about some of the problems related to MC-2, the Dow company recommends caution in completely fumigating in close proximity to shallow rooted plants growing in light soil. Some protection may be afforded these plants by thoroughly irrigating the area where roots are located prior to treatment. Red cedar, Swedish and Pfitzer junipers growing in light sandy soil have been damaged by MC-2, but where treatments have been made to within two feet of shrubs, no ill effects have been noted. Large areas under old black locust, maple and apple trees have been treated without the trees having been damaged.

MC-2 also is highly toxic to warm-blooded animals and people. Only persons familiar with the safe uses of gases and vaporizing liquids are qualified to use it. This would include greenkeepers, gardeners and greenhouse operators, many of whom are well enough acquainted with fumigants similar to MC-2 to safely apply it after studying methods recommended by the Dow's company technical staff.

There are several advantages to treating undisturbed sod for turf renewal. In many cases, such as around golf greens, it is possible to allow traffic to continue over the new grass seeding. This is due to the protecting effect of the old grass and roots which hold the soil together and protect the new grass seedlings until they become established. The old grass acts as a mulch to maintain a moist seedbed and the decaying roots from old sod aid in aeration of the soil, favoring good grass growth.

A typical example of the fine results obtained with MC-2 is the Notre Dame University football field. Dissatisfied with its condition in 1954, Supt. Chester Keeley decided to renovate the field for the 1955 season. The entire area was cultivated and organic matter and sand added before the fumigant was applied. On Apr. 29th of last year, the field was seeded with Merion and Kentucky bluegrass. First mowing came 34 days later. The grass was mowed twice a week for five weeks and then three times a

week for ten weeks thereafter. By this time the grass roots had grown to a depth of 9-in. and was entirely free of undesirable grasses and weeds and new turf had developed uniformly. In Keeley's estimation, the turf held up amazingly well throughout the entire football season, probably better than it had at any time during his 25-year tenure at the South Bend school.

Turf authorities who have carried on extensive experiments with Dowfume MC-2 and aided in its development include Dr. W. C. Elder of Oklahoma University and Dr. W. H. Daniel of Purdue.

Used in Nursery

William E. Lyons, supt. of Firestone GC, Akron, O., and owner of a turf grass farm, also has done some interesting work with the Dow product. Lyons first used MC-2 to kill quackgrass in a home vegetable garden. Later he reclaimed a 5-acre tract of muckland for a turf nursery, successfully growing Pennlu, Meyer Zoysia, Z-73, Hall's U-3 Bermuda and even Tifton 127 Bermuda after fumigating the area.

Planting of the grasses was started 24 hours after the cover had been removed. "We were well pleased and a little amazed at the rapid rate of growth," says Lyons. "Dowfuming enabled us to plant continuously from June 1 to Aug. 1. Even stolons planted in August in 3-ft. rows covered the ground in short time and were sold late in the fall."

Lyons annually Dowfumes his nursery before planting a new grass crop since it eliminates old sods from regrowing unwanted seedheads. According to the Akron turfman's observations, only clover and buckhorn plantain are impervious to MC-2, and require hand weeding. Lyons has built portable covers for convenience in fumigating his nursery. They are made of 1x3-in. spruce strips, 14-ft. long and 7-ft. wide with 12-in. ridge poles in the center to keep the covers off the ground and enable the gas to circulate underneath them. A one-pound can of Dowfume is just right to fumigate the 98-sq. ft. area under each cover. After one plot is fumigated, Lyons' portable cover can be easily dragged to a new location.

Iowa Short Course

Iowa GCSA will hold its annual turf-grass short course at Iowa State University's Memorial Union, Ames, Mar. 12-14. Dr. O. J. Noer and Dr. William Daniel will be the principal speakers.