Fig. 2.—The effect of disking 1 week after chemical treatment and no disking following chemical treatment upon Kentucky bluegrass at five dates. (May 26 and September 7, significant at 5% level; all others at 1% level.)

Sodium arsenite caused considerable initial “burning” at all dates of application and at the three rates used. The bluegrass appeared to be dead within a few days after the chemical was applied. However, the regrowth of bluegrass observed was at times equal to or greater than the growth in plots receiving no treatment. A complete topwill was observed 11 days after application in September. Sixty-three days after application complete recovery had occurred at the 10- and 25-pound rates, although some permanent injury was apparent at the 50-pound rate.

Disking following chemical treatments, compared to no disking, was more effective in reducing the stand of the grass in May (50%) than in September (27%) (figure 2). These data present the average effect of cultivations for all rates of the chemicals and at all intervals after spraying. Disking treatments for June, July and October fell between these extremes. These results indicate that disking amplifies the effect of the chemicals more in spring when climatic conditions are favorable for the growth of bluegrass, than later in the growing season.

DISCUSSION

A chemical to be effective in eliminating such plants as Kentucky bluegrass preparatory to making a seedbed must satisfy the following four conditions:

1. It must be effective to kill the entire plant, including all vegetatively reproducing parts. Unless nearly a complete kill of the established grass is obtained, the resultant regrowth will be difficult to justify the substitution of chemicals for tillage operations except where heavy tillage practises are impossible because of steepness or roughness.

2. Of the three chemicals used in this study, sodium trichloroacetate comes the closest to meeting these requirements.

SUMMARY

Three chemicals, sodium trichloroacetate, isopropyl-N-(3-chlorophenyl)-carbamate, and sodium arsenite, were studied in the field at three rates each on a Kentucky bluegrass pasture. Of the three, only sodium trichloroacetate proved to be effective in eradicating Kentucky bluegrass.

A light disking one week after the chemical was applied resulted in a greater reduction of the stand than in midsummer and fall.—R. E. FRANS SPARGUE, Research Assistant and Associate Specialist in Farm Crops, respectively, New Jersey Agricultural Experiment Station, Rutgers University, N. J.

STOLON-PRODUCING CORN

Dent corn usually produces few if any tillers. Sweet, pop, and flint corn are characterized by numerous basal buds. Corn grass, an abundant-tiller producer, is a mutant of corn which differs from normal corn so extensively as to be scarcely recognizable. It more closely resembles certain species of grasses. It is conditioned by a single dominant gene. Its leaves are narrow, it produces numerous tillers, and a number of floral peculiarities. Vegetatively it has been reported where a clump of erect tillers from a single plant of corn grass was divided into 16 separate plants.

Normal corn usually produces numerous brace roots near the first and second nodes on both the central culm and tillers. The dent tillers of corn grass retain this adventitious root habit. Since under field conditions corn grass frequently assume a horizontal position due to the weight of their own inflorescences, it is to take root and function as stolons. The adventitious roots of corn grass tillers produce axillary shoots, adventitious roots at each node (figure 1).