

energy on which these disease-causing organisms survive until the environment is favorable for the organism. This situation results in a much greater inoculum available for rapid disease development on the living turfgrass tissues when a favorable environment occurs.

From the negative standpoint, the removal of clippings also removes both nutrients and a source of organic matter which, if not properly corrected through fertilization practices, could result in a weakened turf that is more prone to weed invasion as well as to disease, nematode, and insect injury.

CULTIVATION EFFECTS ON PESTS

Cultivation: Cultivation is defined as involving mechanical methods of selectively tilling an established turf without destroying the sod characteristics. The specific types of cultivation include coring, grooving, slicing, forking, spiking, and shattering. Cultivation practices have both negative and positive effects.

Beneficial Effects: Cultivation of compacted soils results in improved soil aeration and internal soil water movement. As a result, turfgrass health and vigor is enhanced which in turn reduces proneness to weed invasion, particularly knotweed, as well as being less susceptible to disease, nematode, and insect injury. A second associated positive effect involves the improved infiltration of water into the soil. This in turn reduces the occurrence of excessively wet soil surface conditions that are particularly favorable for disease development, especially Pythium blight and brown patch.

Detrimental Effects: Cultivation can serve as a means of disseminating turfgrass pests, particularly on contaminated soil. Thus, it is important to thoroughly clean and possibly even sterilize the equipment when transporting it from infected turfgrass soils to noninfested sites. A second consideration in cultivation is that it produces openings in the turf that are potential sites for the invasion of turfgrass weeds. In this case, the timing of cultivation is particularly important. It should be scheduled to avoid periods of optimum weed seed germination, particularly those more difficult to control species such as annual bluegrass and creeping bentgrass.

SUMMARY

This discussion demonstrates how mowing and cultivation can substantially affect the proneness of turfgrasses to weed invasion as well as disease, nematode, and insect injury. Too frequently we tend to think of turfgrass pests in terms of only chemical control and fail to recognize that the particular cultural practices utilized as well as the timing of the cultural practices employed can be just as important or more important in affecting the potential severity of pest problems.