



Integrated Pest Management (IPM) Considerations for Chapel Hill Athletic Fields

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Beginning in 2001, I began working with the Town of Chapel Hill to implement an athletic field management strategy which is both effective and environmentally sound. During the year I visit Chapel Hill's turfgrass facilities on a regular basis to consult with those persons responsible for maintaining those facilities. We discuss current management practices with an eye toward using the best management practices available for municipal athletic fields. The Town plans and schedules its management practices using an overall philosophy of Integrated Pest Management (IPM). IPM simply means that, rather than looking to pesticide application as the primary method of pest control, the Town instead bases its pest control strategy first on other non-pesticide approaches in an effort to reduce pesticide use. Pesticides are used sparingly, and only to manage problems which, if left untreated, might require even greater pesticide use if/when the problem worsens.

Most of the Town's turf areas are low maintenance lawn areas which receive little or no pesticide application. These areas are mown regularly and occasionally fertilized to keep them healthy and capable of growth. While overfertilization of turf is not desirable, some level of growth is essential in order to replace dying plants with new ones so as to maintain the usefulness of the areas. If some minimum level of maintenance fertilization is not upheld, the turf will decline to a point where it cannot provide protection against soil erosion and it will not be suitable for foot traffic during wet weather.

The Town maintains its athletic fields at a management level higher than that of the general lawn-type turf. It is important to note that athletic fields require greater maintenance because of the excessive wear and foot traffic they receive compared to general use turf areas. If they are not managed to maintain a dense turfgrass cover, they will not be suitable for their intended sports. Furthermore, thin, poorly maintained fields are a primary cause of sports injuries and also pose a major liability concern for the Town. The town's primary goal is to provide safe, useable fields for those persons using Town facilities. What follows is a summary of the overall management philosophy and typical practices used for the athletic fields at the Homestead Park, Meadowmont, and Mary Scroggs Elementary School sites.

Grass Species Selection

One of the most important considerations when attempting to utilize an IPM, minimum maintenance approach, is choosing a turfgrass species susceptible to few pest problems. The Town uses hybrid bermudagrass (*Cynodon dactylon* x *Cynodon transvaalensis*) for all of its fields in an effort to provide a grass which is tolerant of wear and is able to recuperate from the

traffic which the fields receive. Bermudagrass is very tolerant of heat and drought and resistant to most diseases. Thus, it is able to maintain a dense cover of plants suitable for an athletic field without a high level of care.

Disease and Insect Management

Some athletic field management plans specify preventative pesticide applications to the entire field to prevent disease or insect problems before they actually occur. The Town uses an established IPM technique known as "scouting" to determine if a particular pest problem is sufficiently serious to require pesticide application. Unless the problem is fairly extensive on the field, no pesticides are applied. These IPM strategies have been effective in eliminating the need for any insecticide and fungicide applications to Town athletic fields over the past five years.

Weed Control Programming

The Town's weed control philosophy is not to eliminate every weed present on the fields, but rather to keep weed populations at low enough levels that the weeds do not become a significant proportion of the field's vegetative cover. Weeds such as crabgrass and goosegrass, for example, are annual plants with shallow root systems. If these weeds become a significant problem on the playing surfaces, they cannot withstand the traffic and wear that the fields typically receive. Also, since these weeds are annual plants, they die each year leaving that portion of the field without sufficient plant cover. Because annual weeds are a recurring problem on athletic fields, preemergent grass herbicides should be applied when appropriate each year to prevent crabgrass or annual bluegrass from taking over the athletic fields.

When necessary, broadleaf weed herbicides are used for control of weeds such as dandelion, clover, and other broadleaf weeds. These applications are made using a spot-spraying technique that targets only the weeds themselves for pesticide spraying, rather than spraying the entire athletic field whether there are weeds present or not.

Finally, the herbicide glyphosate is occasionally required for control of weeds in shrubs, along fence lines, and in other areas where appropriate. Glyphosate is rapidly broken down by soil microorganisms and thus presents no source of long-term pesticide residues. It is commonly used in the landscape and turfgrass management industry.

Fertilizer Programming

As mentioned earlier, occasional fertilization of athletic fields is essential to provide an actively growing turf plant which can recover from any wear, disease, or insect injury it receives. Currently, balanced fertilizers containing nitrogen, phosphorous, and potassium are applied approximately every five weeks during the active growing season at a rate of 0.75 - 1.0 lb. N / 1,000 ft².