

Fertilizer/Pesticide Combinations Offer Relief

By Bruce F. Shank

Economic and environmental concerns are high on nearly every sports turf manager's and golf course superintendent's list today. It naturally follows that they welcome technology which offers relief. Applying granular fertilizers impregnated with needed pesticides is that type of technology.

Well-timed fertilizer and pesticide applications will always be needed for high-use recreational turf. The stress on golf course and athletic field turf gives the edge to weeds, insects, and diseases. Cultural practices, including a well-planned nutrition program, and selection of turfgrass cultivars with superior traffic tolerance and pest resistance can decrease pest pressure on athletic turf. But, breakdowns in natural defenses do occur frequently and require treatment.

Rather than making treatments separately, you can build them into your turf fertilization program by using fertilizer/pesticide combinations. The key is timing, especially if the fertilizer contains a high percentage of soluble nitrogen.

Most modern turf fertility programs are based around granular slow-release products. This basic nutrition package is then supplemented as needed according to soil and tissue sample analysis.

Fertigation and spraying (spoon feeding) are two methods of supplementing a fertility program. However, they require either specialized equipment or labor. Many turf managers don't have the necessary equipment at their disposal and are operating under tight manpower constraints.

Advantages Of Combinations

Rather than forgo supplemental fertilization and needed pesticide treatments, consider the advantages of combination products. "Combination products offer many advantages to turf managers," states Dr. Bruce Augustine, fertilizer product manager for Lesco, Inc. "Not only are they convenient because you can perform two jobs at once, but the bags are relatively easy to store and don't require rinsing or have disposal restrictions.

Because they are in granular form, they have less odor than liquid formulations and are applied with spreaders, which are relatively easy to calibrate. Yet, they are as effective as sprays in most tests."

Augustine is quick to point out that sprays, especially herbicides, produce visible results faster than dry formulations. "For example, you don't see leaf curl within minutes as you would with phenoxy sprays. That doesn't mean they are less effective."

The success of granular combination products is tied to getting the active ingredient of the pesticide off the carrier into the plant, explains Dr. Dean Mosdell, manager of product development for O.M. Scotts. For contact products, such as postemergence herbicides and fungicides, the carrier must adhere to the leaf surface long enough to deliver the pesticide. Smaller particles adhere well to a damp leaf surface. Once in place, they should not be washed off foliage by rainfall or irrigation for roughly 24 hours. On the other hand, soil-active materials, such as preemergence herbicides and insecticides, must be watered in following application. "Read and follow the application directions carefully for maximum effectiveness," says Mosdell.

Particle Type and Size

The fertilizer carriers are either homogenous or blended products. The advantage of homogenous products is that each particle contains all ingredients. For this reason, all ingredients are dis-

tributed evenly by the spreader. Homogenous products tend to be more expensive than blended products.

Blended products contain separate particles of a nitrogen source, a potassium source, and a phosphorous source. Nitrogen sources might be urea, methylol urea, and sulfur-coated urea. Diammonium phosphate is the standard source of phosphorus while the potassium source might be either potassium chloride or potassium sulfate.

Both homogenous and blended products can be impregnated with herbicides, insecticides, fungicides, and growth regulators. Another option is to impregnate an inert carrier, such as corn cobs or clay, with the pesticide and mix it with the fertilizer particles.

Formulators offer a choice of particle sizes of their combination products. Larger particles are typical for home lawns and utility turf areas. "Particle size becomes important when grass is cut short," states Augustine. Smaller size provides more particles per square foot. Better coverage is important for pre-emergence herbicides, contact herbicides and fungicides. "Particle size is less critical for soil insects since they move around," he adds.

Mosdell reports that combining fertilizer with certain pesticides can improve their performance. "We've seen better activity with broadleaf herbicides and our growth regulator when they were combined with fertilizer," he states. "Synergism is something we are looking at closely."

Mosdell urges turf managers to check results of university tests for combination products. "Formulation can make a difference in performance," he said. "There can be a difference in effectiveness between brands. You can't go strictly by the ingredients."

Properly timed fertilizer/pesticide combinations can cut the number of applications you make in half during the year. This saves labor and enables you to make necessary pesticide treatments to keep turf in play without criticism from those critical about pesticide applications. Both provide some important relief. □



Fertilizer/pesticide combinations can be applied with spreaders, which are easier to calibrate than sprayers.