

in its maintenance requirements and in its tolerance of weather extremes compared to the cool-season grass alternatives. Simply stated, the chance for periodic failure with *Poa annua* is high, and consistently great fairways cannot be dead fairways.

2. When the weather turns hot and *Poa annua* roots take their customary place at the surface of the soil or in the thatch layer, *Poa annua* fairways will inevitably be *wet* fairways. Shallow rooted turf requires frequent irrigation or syringing, and great fairways cannot be *wet* fairways.

Deciding that *Poa annua* should be eliminated is one thing, but establishing a more desirable grass in its place is something else. Over the years, superintendents have had varying degrees of success in reducing *Poa annua* and keeping it out of their fairways by manipulating cultural practices to favor the desirable species. It was a painstakingly slow process, however, and many superintendents simply gave up and decided

to live with or cultivate *Poa annua*. Today, results of the use of lightweight mowers and of the newer plant growth regulators offer more of a promise for controlling *Poa annua*. Very briefly, the following should be taken into account in establishing programs to promote or keep desirable turf species at the expense of *Poa annua*. Specific recommendations would vary depending on location and the species being grown.

- Use irrigation water carefully and prudently.
- Carefully time and use light to moderate rates of fertilizer.
- Time cultivation practices to avoid primary *Poa annua* germination periods.
- Monitor pH. Bentgrass, for example, competes better against *Poa annua* at pH levels below 6.0.
- Overseed desirable species on weak fairways.
- Establish a lightweight mowing program and collect clippings, if possible.

- Investigate the use of the newer plant growth regulators.
- Limit golf cart use on fairways when the soil is wet and subject to compaction, and when the temperatures are high and the turf is likely to wilt.

It really doesn't matter what species of grasses are being grown. Taken together, the essential principles and important practices outlined here form the framework for successful fairway management programs regardless of the species of grass.

For the majority of golf courses that perhaps lack the resources but nevertheless want better fairway turf, aiming to upgrade their facilities and programs in each of the categories discussed here will give them an opportunity to enjoy very respectable fairways most of the time. For golf courses with the resources, commitment and desire, following these guidelines faithfully can result in fulfilling their quest for consistently great fairways.

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## More on "Pesticides — Changing an Image"

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by GARY A. WATSCHKE

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**QUESTION:** I read with interest your article "Pesticides — Changing an Image" in the January/February issue of the GREEN SECTION RECORD. What are the legal ramifications of such a pesticide disposal system? Also, is there more information about how to build and install a micro-tank pesticide treatment system such as the one described in the article? (New York)

**ANSWER:** With regard to legal concerns, the best place to start is by checking with your state and local EPA and DEP offices that are concerned with pesticide and toxic wastes. Treatment systems, such as the micro-tank, appear to be illegal in some states, while other states have adopted federal regulations of pesticide disposal as developed by the U.S. EPA. Currently, the U.S. EPA is recommending the storage of excess dilute pesticide mixtures and equipment

rinsates for use with subsequent spray operations. Toxic wastes are not generated using this approach. Nevertheless, the EPA looks upon micro-tank type systems as a possible solution, depending on such factors as location, type of chemicals involved, and what testing methods and procedures are being provided.

At least one commercial water treatment company is developing a charcoal filtration system that could allow limited reuse of tainted water. The proposed system would be relatively inexpensive and licensing would be much more economical than that of a hazardous waste treatment facility. Some agencies have taken the position that a micro-tank, such as the one mentioned in the article, are hazardous waste treatment facilities rather than pesticide disposal systems, thus making licensing cost prohibitive.

As far as the micro-tank mentioned in the article is concerned, Iowa State University's Horticulture Department is said to be working on a bulletin that should provide more details as to the construction and installation procedures. With the micro-tank system, more emphasis may be placed on providing a means of sampling and testing the system, where it is best located, what evaporative requirements are imposed and perhaps what license, if any, will be required. The Federal EPA is fully aware of the Iowa State University system and believes it to hold potential.

As more is learned about the micro-tank and other new methods of handling dilute pesticide wastes, the EPA may, in all likelihood, develop new regulations to keep up with technology. For now, it may be better to hold off doing anything until the regulating agencies can catch up with industry advancements.