Curing disease is one thing, but changing hearts and minds is another

by Chris Sann

WILL EXPERIENCED turfgrass managers examine the "brave new world" of biologically based products, and say, "sorry, but I will stick with what has worked for me in the past." Obviously, such a reaction would be as narrow-minded as the school of thought that says turfgrass management is a major creator of environmental mayhem. Use of chemicals isn't an automatic foul, and using new biocontrols won't be the end of the world as we know it.

Man has used microbes since he baked the first loaf of bread and brewed the first beer to wash it down. Today microbes help fight diseases in people, animals, and plants. They digest toxic pollutants, and produce food and beverages. Any feeling that the "brave new world" of biocontrols is either brave or new is just wrong.

In fact, there is a lot of interest in biocontrols among turf professionals, but there are a lot of uncertainties—about what microbial biocontrols are, how they work, how well they work, their costs, how they are used, and—for some people—a big question about why they are needed in the first place. All of these concerns need to be answered.

As Dr. Nelson points out, we are years away from many of the answers. At this point, however, we can answer one of the basic questions: Are biocontrols just an environmental version of political correctness? The answer is—no, they are not. They are real new tools designed to reduce real problems, some of which are of our own making. They undoubtedly will lead to new problems of their own.

Even a good new tool takes getting used to, but many professional turfgrass managers are already well along in the process. We are comfortable with, and have confidence in, chemical controls, which gave us greater effectiveness and more precision than traditional materials and methods, but we also know that the replacement of "tried and true" with "new and improved" is neverending. What throws a lot of us off is that the improvements somewhow aren't what we expected, and our skills and fortunes tend to become tied to particular stops along the way.

Modern science is leading us to deeper levels of understanding and ever more refined levels of precision—deep enough for us to see that biological and chemical controls aren't opposites. In fact, they aren't just related: they're family. Future practice is not likely to be based on an inaccurate and unrealistic either/or decision. If we do our jobs right, it will reflect the benefits of our ceaseless search for all kinds of new and improved disease controls. ■

TERMS TO KNOW

aerobic/anaerobic . . . With and without oxygen

binucleate . . . Cells with two nuclei. [OKAY?]

biological suppression . . . Preventing or reducing disease activity using microbial antagonsists.

cross protection or induced resistance . . . Use of a biocontrol agent that enhances the development of natural defenses against pathogens.

humification . . . The formation of humus or humic acid in soils or composts..

inoculants . . . Micro-organisms that are introduced into soils or onto plants for a variety of purposes.

mesophilic . . . Moderate-temperature conditions

microbiological . . . Of or pertaining to living organismd that can only be seen with a microscope.

milky spore disease . . . A bacterial inoculant used to control grub species. This bio-insecticide has been used for over 30 years.

mycoparasites . . . Fungi that are parasitic on other fungi.

pathogen inoculum . . . The mass of infectious fungi present at a site.

pathogen propagules . . . Bodies or forms of disease-causing fungi that allow the fungus to survive and to form new plant infections.

particulates . . . Small pieces of material.

phytotoxic . . . Poisonous to plants.

selection . . . The evolutionary process by which individual members of a species develop one ore more characteristics that help the species to adapt to changing conditions.

soilborne . . . Of or residing in the soil. Usually used in reference to micro-organisms.

suppressiveness . . . The characteristic of minimizing disease activity or reducing the amount of pathogen inoculum.

thermophilic . . . High temperature conditions

v:v . . . Volume to volume. ■

ASK THE EXPERT

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