

## Good news for triazole users

Continued from page 33

bon dioxide, which increases the rate of photosynthesis, or food production. Schmidt reported stimulated root development as well, with best results occurring with applications to new seedlings at the two- to three-leaf stage.

Schmidt also reported "promising results" using extract from seaweed, "a very rich, natural source of cytokinin, a hormone that naturally develops in plants and which incites budding development."

Combining cytokinin and triazoles could produce the best effects, he said, citing an example of a turfgrass grower who came to Schmidt a year or so ago concerning problems he had with several acres of tall fescues.

"I recommended a blend of Banner and a fortified seaweed product. He came back later with a check to support our turfgrass biostimulant research," Schmidt said.

He added that superintendents can use seaweed and reduce the amount of triazoles and still get the same results. "It's an impact on IPM [Integrated Pest Management] and also has economical benefit," he said. "When a sod grower is that pleased with results, he must have benefited economically."

Schmidt warned that dozens of new seaweed-based products are on the market and "you have to be careful. Most on the market are fortified — mixtures of humic acid and seaweed extracts and maybe something else; some are straight seaweed; and then there are different extraction methods used to obtain the seaweed. They could be concentrated by boiling, freeze-drying, or mechanical processing. If it's boiled, it has less value because heat de-natures the proteins."

He also warned not to overdose the grass.

"These do have a hormonal effect. And they have an optimum application rate. Once you go over that, it starts decreasing in effectiveness," he said. "Too much activity gives detrimental effects."

Overloading can mean overkilling, he said. "What happens is, a superintendent comes out in the spring and uses Scott's Paclobutrazol [a triazole turf-growth regulator] to control seeding of *Poa annua*, then he puts down Banner to control dollar spot, then he puts Banner on again as a growth enhancer/conditioner. Then he gets summer patch disease and he calls a pathologist who tells him to put on a triazole fungicide 4-X twice. And his green dies and he wonders why.

"What he has done is over-

dosed the green with triazole compounds which cause hormonal reactions within the plant."

Mike Mongon, superintendent at Arcola Country Club in Paramus, N.J., testified to the effectiveness of a triazole's improvement on seedling turf.

Facing heavy winter damage in 1994, Mongon applied Banner and reported: "It certainly looked like it helped tremendously. Other areas of the course also had winter damage and didn't respond as favorably as the Banner-treated turf."

## Dr. Schmidt suggests mixing in seaweed product

BLACKSBURG, Va. — By using fortified seaweed with triazoles and other fungicides, golf course superintendents can greatly reduce the amount of fungicides they use, according to Virginia Tech Professor Richard E. Schmidt.

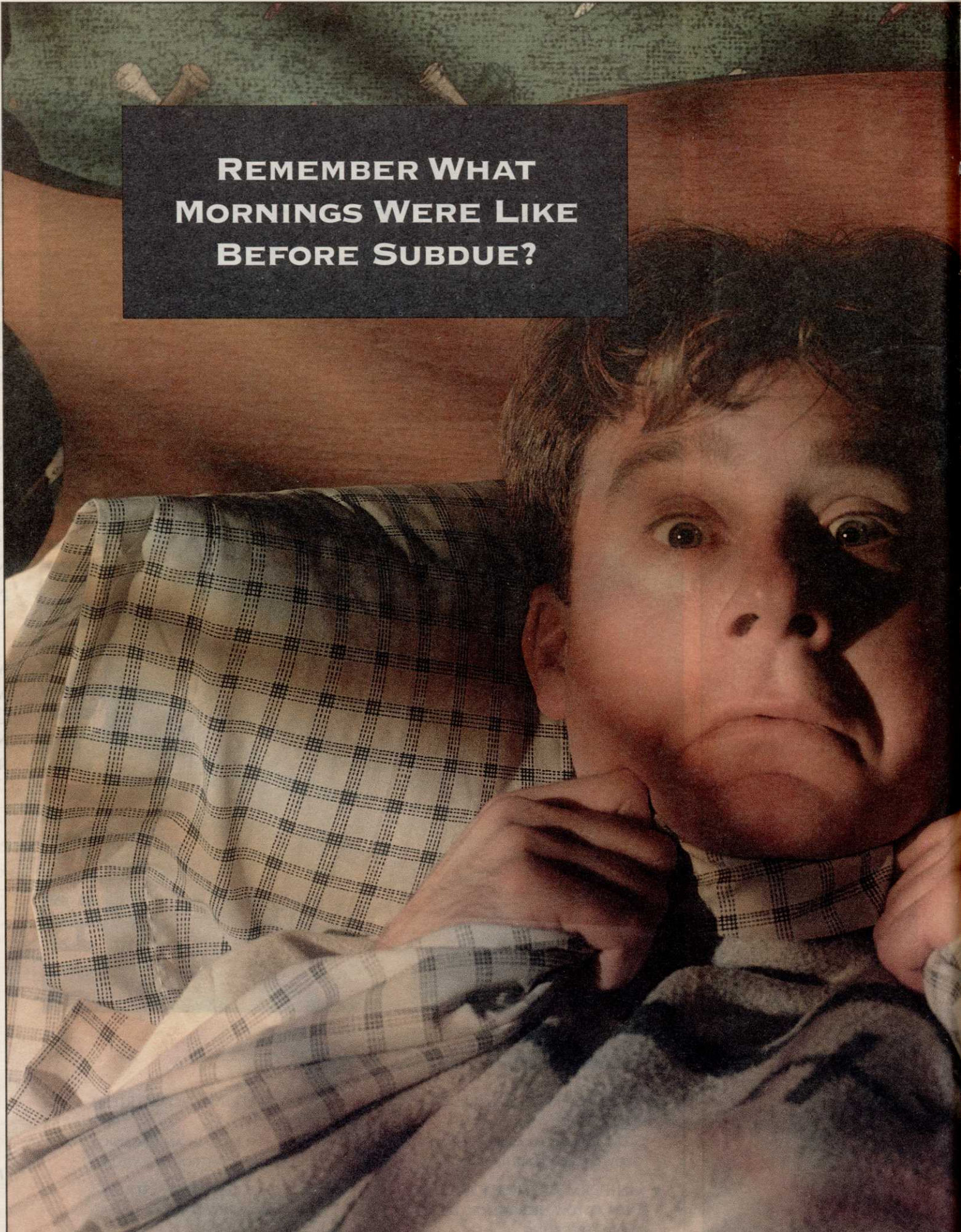
"It's an education of how to use them in concert, but over a year's time you can probably reduce the amount of fungicides needed by 40 percent when the materials are properly used," Schmidt said. "We have data permitting me to say that. It not only works with the triazoles, but other fungicides as well."

The Virginia Tech researcher pointed to

not only the economic impact but the "more important ecology impact."

"We're making the plant more healthy," he explained. "For example, we have real strong data showing we can condition plants to resist the invasion of nematodes. To control nematodes chemically is not only expensive but very caustic. So if we can get away without using a nemacide, we reduce environmental hazards."

The turfgrass industry is "bombarded with innuendoes about not being ecologically sound," Schmidt said. "But we are. And here is a case where we can improve plant vigor and also show that we are good stewards of the environment."



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