



An Annual Meeting, Turf Reports — and Perspectives about California Agriculture

By Dr. Gayle L. Worf

I've just returned from participating in the plant pathologists' national meeting (technically, the American Phytopathological Society) in San Diego. And before that I spent two days on an optional tour of commercial ornamental production along the southern California coastline. Both left some strong perceptions with me about what is likely in store for Wisconsin agriculture — turf included — first from the standpoint of general agriculture overtones, and also, from the research reports that were shared at the meeting. I'd like to comment on both subjects.

Even those of us who have not visited in California must know of its dominance in agricultural production. Though we pride ourselves as the nation's dairy state, for instance, the projections say that California will overtake us even with that statistic by the beginning of the next century. They dominate the majority of fresh fruit and vegetable markets, and they are probably on top in ornamental production, too. In Los Angeles County alone, their annual wholesale ornamentals value is \$150,000,000 (almost one-fourth of Wisconsin estimated total turf value). So what happens in California — even if it's 2,000 miles away — influences the sociological, philosophical, bureaucratic and economic trends in agriculture — and turf — in a very profound way.

On the tour I felt almost as a stranger in my own land. I couldn't understand what was being said by all the workers — they're Hispanic! So the migratory and labor laws affecting agriculture are coming out of California experiences. And I never saw such a delicate and precarious ecological structure in my life — virtually all of their agriculture is supported by a very limited amount of water coming out of the Colorado River, supplemented a bit by reservoirs up north. Small wonder that people are becoming more concerned than ever about agriculture and water. I couldn't help but think of the experiences that Mark Kienert and Bull's Eye Country Club had this summer, and to sense

that even though our water problems should never be as acute as the great southwest, they'll have their impact upon us.

The recent Superintendents' symposium was right on as a critical and timely topic. Nurseries in California now are being required to prevent all runoff from their properties, and to recycle completely. At the Monrovia Nursery, they have built a multimillion dollar facility that includes catch basins that double as sedimentation tanks, supplemented by anthracite coal and polymer additives for further flocculation of particulates and followed by treatments of chlorine gas, ammonia, nutrients, and 50 percent fresh water to meet local needs! It's a facility that would do most Wisconsin municipalities proud. I understand that golf courses there face similar requirements. It's not just the amount of water they use — it's quality — including groundwater — that is at issue. Will we be far behind? And when it comes here, how will our turf industry be able to cope with it? Are there some steps we should be taking now to assure both ourselves and the people we serve that our industry is already policing itself from waste of water and pollution of the resource?

My first instincts were that we are fortunate with turf to have a ground cover

and a modicum of thatch that minimizes the problem. This may be true, but interestingly, as I was preparing this article I had to stop for an appointment across campus, and as I was walking along, I noticed that the buildings and grounds personnel had just made a fall fertilizer application. There were lots of granules on the sidewalk, a problem which can lead to wash-off into gutters and lakes. But in this case it appeared innocuous and okay to leave the granules there. The rain should wash it off onto the adjacent grass. But then I noticed the gutter drain down the sidewalk just a few feet away, with direct access to Lake Mendota!

Perhaps we need to have a "committee of the whole" soon to outline the simple things we know right now that we could do to minimize environmental problems and set ourselves straight for the future, such as the use of buffer zones, kinds and types of fertilizers that can be applied when and where, etc. Our own state is now mandating the development of acceptable "best management practices" for several crops to protect groundwater — alfalfa, corn, cranberries, potatoes among them. Can we be very far behind?

California is also the land where grocery chains advertise that they have contracted with NutriClean, a commer-

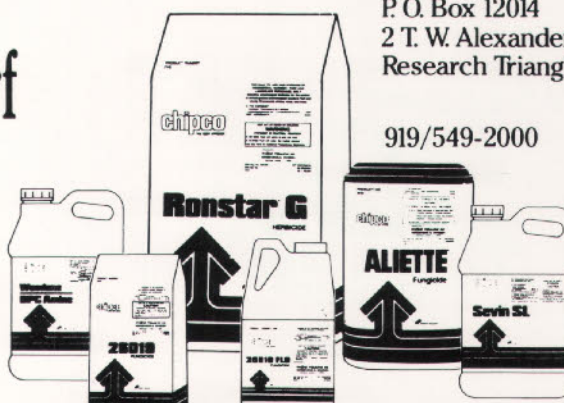
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cial laboratory for guaranteeing freedom of their produce from pesticide residues — even though the EPA and FDA already attest to food safety; where all pesticide recommendations must now be given in writing; and where 75 percent of pest management information now arrives to the 80,000 farmers through licensed Pest Control Advisors. In other words, pesticide issues are very evident and political. Perhaps in Wisconsin we need to be placing more emphasis in our pesticide applicator training programs, to recognize this potential, and try to emphasize even more IPM practices and justification steps when we make decisions about fungicides and other pesticides. And we might also be doing some serious thinking about what kind of research we should be including regarding environmental issues at the O.J. NOER RESEARCH CENTER.

There's considerable research taking place with biological control methods generally, including some in turf. Perhaps the most significant trend there is, is the interest that Industry appears to be showing now in taking

some of the organisms that have demonstrated some potential and developing techniques to grow and to package them. Moreover, the EPA and USDA have retreated from some of their earlier restrictions upon releasing microorganisms in the environment. As long as the organisms have not been genetically engineered, the pathway is now much easier for their release. Several turf pathologists have included biocontrol as an important component of their research programs — Hank Wilkinson (patch disease control) and Lee Burpee (snow mold control) among them. And resistance to turf diseases is being emphasized by Eric Nelson at Cornell (Dick Smiley's replacement) and Phil Colbaugh in Texas. Improved disease prediction schemes are being emphasized by Bill Shane at Ohio State, including both epidemiological and pathogen detection systems. The Agridiagnostics turf disease detection kits are a component of the latter, which may also become useful in time for some courses to defend or justify their selection and use of fungicides.

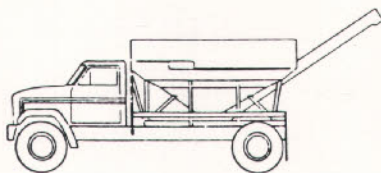
What's significant to me is that all of these people are young researchers,

really just getting started, and reading these directions as the wave of their future.

We probably should recognize that it will take awhile before profound benefits occur. Useful resistance to dollar spot and other pathogens were reported (informally), for instance, but it may take some genetic engineering to implant them into culturally acceptable golf course grasses. And researchers report some progress in learning how to do that with monocots — most of the successes are still confined to dicots.

And one word of concern. We are really vulnerable right now to miracle claims with products that supposedly destroy thatch, control diseases, make nutrients, or perform other ecological miracles without introducing supposed problems. Unfortunately, many of these have already been introduced in the "buyer beware" mode. At the least, these products should be subject to the same efficacy protocols as chemicals, e.g., replicated testing in several locations for several years. But most of these are offered up under "testimonial" process. The current public attitude will probably increase these problems for us!

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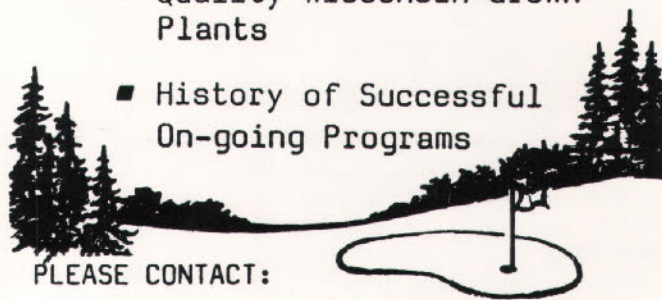
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