

## Healthy Ecosystem

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## Need a Screen

I must admit, I am one of those Consumer Reports (CR) "geeks." Before I make a significant purchase, I am often scouring the web looking for reviews. CR is my foundation, but I also like to read user reviews often posted on less famous sites. I gather as much information as I can and try to make an informed decision. In most cases, I am pleased with the choice but there have been occasions when I had a unique need that the product could not fulfill and I realized a limitation.

Equipment and product selection in the golf turf industry can follow the same procedure. There are a variety of sources from our own TurfNet to University research as well as chatting with colleagues and of course the ability to "demo" a piece of equipment.

My experience is that golf course superintendents have a clear idea of what will work for them and often stick with what works. At the same time, there is a growing percentage of superintendents willing to try new products and practices that may offer enhanced savings or improved environmental compatibility.

As I look at this process for the selection of products, such as fertilizers and pesticides, there appears to be an omission. Of course, we all have a general sense of the economic and performance aspects although they are not always clear cut. For example, slow release nitrogen sources have different release patterns and dispersal

characteristics that may add value.

Environmentally speaking, we also have a good sense when we use a water-soluble nitrogen source that the release is rapid and may have a high leaching or runoff potential. We often tout our use of slow-release sources as a measure of environmental responsibility.

Selecting pesticides follows a similar approach to fertilizers. This is often referred to as the "Three E's", i.e., economics, efficacy and the environment. Unfortunately, while we have the readily accessible information on the first two "E's", there is a dearth of collected information on environmental effects of individual products.

Yes, there are Material Safety Data Sheets (MSDS) that provide general hazard information but they do not offer an easy to understand summary of the general environmental risk of a product. Why do we have this for most products and equipment but not for pesticides?

This does not appear to be an easy question to answer. To be sure, it is not exactly a straightforward situation such as with nutrients. That said, there is a great need for some method of selecting pesticides based on environmental effect.

The use of environmental risk models is not new to agriculture. There have been models published comparing the environmental risk of various production systems since the early 1980's. In 1992, Extension Scientists at the New York State

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*We have to be willing to step up to the table and justify what we do and make adjustments where it is needed to improve our environmental compatibility. It won't be perfect and there will be some challenges but that's how we grow.*

## Healthy Ecosystem

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IPM Program led by Joe Kovach, Ph.D., published the Environmental Impact Quotient (EIQ).

The EIQ was initially developed to compare fruit and vegetable production systems for the relative environmental risk. Interestingly, the greatest resistance came from the organic growers at the time. The organic production systems rely heavily on very frequent use of elemental sulfur and, when measured against a typical IPM approach to fruit production, posed significantly greater risk to the environment.

Recently, my colleague Jennifer Grant, Ph.D., Assistant Director of the NYS IPM Program, and I published a scientific paper using the EIQ adapted for use in turf. The goal was to compare the risk of traditional pest management programs with IPM and biologically-based pest management programs.

The EIQ is not perfect. There are some data gaps where assumptions have to be made. It is not adaptable to a specific site. For example, if you have a greater leaching problem than runoff, it will be difficult to adapt for that specific need. However, as an overall tool for assessing broad environmental impact that includes health effects, ecological effects, applicator effects, and even golfer exposure effects, it is an excellent choice.

Recently, the Quebec Provincial government published the Quebec Pesticide Risk Indicator model (QPRI). This model has two approaches, one for general human health and one for environmental effects. Again, one could easily find flaws with this approach but just like my

search through the web for consumer product information, it is one tool I might use to make an informed choice.

The question that lingers with me is why don't we have a more widely accepted tool for comparing products for environmental risk? The conspiracy theorist side of me thinks many in the industry do not want one. If we had a widely accepted model, would local communities use it as de-facto regulation? Of course we can always sit and do nothing and wait for another group to do it for us so we can avoid the law of unintended consequences, i.e., develop a tool to help superintendents that then is used against them.

We have to be willing to step up to the table and justify what we do and make adjustments where it is needed to improve our environmental compatibility. It won't be perfect and there will be some challenges but that's how we grow.

Frank Rossi, Ph.D.

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