



the urine was 18 ppb and the limit of establishing a quantitative amount was 25 ppb.

The results of their studies are summarized in Table 1 for those using granular applications and in Table 2 for those using liquid applications. Trace amounts, that is a level between 18 and 25 ppb were detected in one applicator of granular material and one bystander among those using protective gear (Table 1). Amounts ranging from a trace to 604 g were excreted in the urine of applicators not using protective gear and a trace in one bystander.

Exposure occurred more frequently among those not using protective clothing. Three applicators and one bystander showed trace or greater amounts of the insecticide in their urine

The use of a liquid formulation significantly increased the number of applicators showing a trace amount or greater of chlorpyrifos in their urine (Table 2). A trace or quantifiable amount was determined in three bystanders where the liquid formulation was applied. Where no protective clothing was used all 10 applicators had trace or greater amounts of the insecticide in their urine in contrast to three of the eleven applicators taking some degree of protection.

The highest level of exposure was with applicator # 1 who used no special clothing. His exposure level on one day was 0.798 mg which for an individual weighing 91 kilograms results in daily intake of .009 mg, close to the allowable average daily intake of .01 mg/kg body weight/day.

The study was primarily focused toward the home owner applicator and the risk of exposure of his immediate family. Nevertheless, the turf manager must recognize his personal exposure but also those who may be in the immediate vicinity, whether he is in parks, playgrounds and sports fields, and schedule his spray operations accordingly.

The low exposure resulting from the granular impregnated fertilizer appeared to be the safest system. The use of this product, however, requires the simultaneous need for a plant nutrient and an insecticide. This is not always the case in a well managed sports field.

# Caught in the Web - Using the Internet

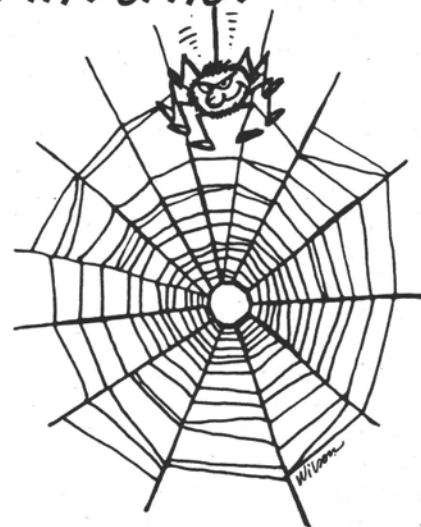
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Seldom a day goes by that the popular media doesn't include an article relating the benefits [and necessities] of being linked to the Internet. Major businesses and institutions have established "Web Sites" and increasingly, information is being transmitted, and business being conducted, over the Internet. A significant number of readers of this article may already be linked to this global network via computers at work and/or at home. For many others, the Internet remains a black box [or a black hole], clouded in mystery and confounded by the jargon related to its use. For those who have ventured onto the Web - the experience may have varied from enlightenment to total frustration. In 1996, the volume of useful information remains a minuscule fraction of the total information available. The purpose of this article is to provide for complete neophytes an introduction to using the Internet, and to suggest some useful or interesting sites to travel to for information related to turfgrass and turfgrass management.

## **What is the Internet and how do I get on it?**

The internet is a network of different intercommunicating computer systems funded by governments and commercial organizations and linking more than 40 countries around the globe. The network may be accessed in a variety of ways - probably the one we hear about most is the World Wide Web (WWW or W3) [also known simply as the Web]. The Web arranges information in documents with links between them. The links facilitate rapid movement between related documents.



## **What can I do on the Internet?**

Of the many uses which may be made of these global computer linkages, the most common activities include:

- Electronic mail (E-mail) - a method of communication between individual or groups (the latter route uses collective "mailing lists" where all members of the group receive all communications).
- File Transfer Protocols (FTP) - used to download files from other sites to your computer.
- Search functions - used to search the Internet for information, contacts and databases.
- Discussion groups/bulletin boards - groups with more or less targeted subject matter which allow general discussion and interchange. These groups may be mediated, allowing for some control of what is acceptable and what is not.

## **How do I connect?**

For most of us, access to the Internet will be via a "dial-up connection" through a modem and telephone line. If you are looking at the purchase of a modem, buy the "fastest" model available for your computer - no matter what the capacity, there will always be some days when it