

served that packers are attempting to make up for this lack of equipment by increasing the amount of concentrate that they put in their tanks and shortening the exposure time to well under 2 minutes.

Since pine oil has shown the ability to cause injury at high concentrations, it is recommended that formulators look for alternate materials to use in this application. It is also recommended that packers adhere more closely to the recommended use rates for color-add concentrates, and if deeper color is desired increase the exposure time rather than the concentration of the dye.

The causes of peel injury are many and complex (16). The injuries and discolorations noted by the authors appear to be closely related to growing area rather than to the use of color-add.

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"THE GUIDE": AN INDUSTRY RESPONSE TO NEW REGULATIONS

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Abstract. Growers in Dade County, Florida, like their colleagues in other parts of Florida and the United States, have had to learn about and begin to comply with new or more stringent regulations which have been developed by governmental agencies at the federal, state, and local levels during the past 2-3 years. Local Cooperative Extension Service

offices, the governmental agencies promulgating the regulations, and several trade organizations and trade journals have been active in the educational process. The Dade County Chapter of the Florida Foliage Association has compiled information on several current issues: pesticides, labor, hazardous materials, groundwater, safe nursery practices, 25 material safety data sheet (MSDS's), and upcoming topics. This has been published as a loose-leaf notebook entitled "The Self Help Guide to Regulatory & Information Agencies & Safe Nursery Practices", nicknamed "The Guide." The rationale, compilation process, possible future directions, and relevance of "The Guide" to other industries will be discussed.

Rationale

Government regulations affecting the agricultural sector have increased not only in number but also in complexity during the past few years. These regulations are of federal, state, and sometimes local origin. Some have arisen as rule making based on environmental legislation such as the Clean Water Act (8), the Safe Drinking Water Act (9), and the Endangered Species Act (14, 19), all enacted in the early 1970's. Others, such as the Occupational Health and Safety Administration's (OSHA's) Hazard Communication Standard (1) and the U.S. Environmental Protection Agency's (EPA's) Farmworker Protection Plan (6, 15) have been developed in response to concerns for

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worker safety. Still other legislation, such as the EPA's Emergency Planning and Community Right-to-Know provisions of the Superfund Amendments and Reauthorization Act of 1986 (SARA) (7, 10, 11, 12, 13, 16, 17, 18), has been written in response to disasters like the methyl isocyanate release in Bhopal, India, in late 1984, and a chemical release in West Virginia shortly thereafter. On a local level, Metropolitan Dade County's Department of Environmental Resources Management (DERM) has recently become active in developing Best Management Practices (BMP's) and/or Operating Permits (OP's) for various agricultural activities such as the disposal of culled produce (4) and the disposal of packinghouse effluent (3, 5).

Dade County growers, like their counterparts in other parts of Florida and in other states, have expressed concern at their inability to fully understand these new regulations, and they worry that they may be cited for failure to comply. The leaders of the local foliage industry, through the Dade County Chapter of the Florida Foliage Association (Dade FFA), chose to take a pro-active approach to this problem by trying to organize these issues into a single resource (2) and to educate the membership at large.

The Compilation Process

The Nursery Water Advisory Committee of the Dade County Cooperative Extension Service met in early 1988 to discuss DERM's interest in studying water quality in local nurseries. The Dade Chapters of the Florida Foliage Association (Dade FFA) and the Florida Nurserymen and Growers Association (Dade FNGA) felt that their membership would benefit from an intense educational program on regulatory issues prior to being subject to possible regulatory action. Several members of the Dade FFA Board of Directors also attended an Environmental Seminar organized by the Florida Fruit & Vegetable Association and several other trade organizations. This added to the impetus to begin an educational campaign for Dade FFA members.

A subcommittee of the Dade FFA Board of Directors plus an interested FFA member began discussing this issue and shortly thereafter, asked the Pesticide Trainer from the Dade County Cooperative Extension Service office to join the subcommittee. During the next several months, subcommittee members began compiling printed information from a variety of sources on regulatory issues in general. Once sufficient information had been gathered, the group identified key areas of concern. These were: pesticides, water, labor, permits/land use, safe nursery practices, the 25 MSDS's most commonly used by the nursery industry, and upcoming regulations.

Once the key areas of concern had been identified, the subcommittee began the process of choosing written material which gave a clear understanding of each topic. Material was drawn from several sources including Florida Cooperative Extension Service publications, articles in trade journals, written copies of talks, and so on. In addition, the subcommittee compiled a "Quick Guide to Agencies and What They Do" which is intended to highlight the regulations and resources which come under the auspices of various federal, state, and local agencies. A list of addresses and telephone numbers of these agencies is included at the end of the "Quick Guide."

The subcommittee reached the conclusion that a loose leaf notebook would be the easiest form in which to handle this rapidly changing information. This choice was based on (a) "Guide" owners' ability to update information easily and (b) giving them the capability of adding material of their own as desired. The highlights of the various sections are described in greater detail below.

Pesticides Section. The purpose of the Pesticides Section is to inform growers about: (a) the regulations governing the use of pesticides, specifically the Federal Insecticide, Fungicide & Rodenticide Act (FIFRA) and the Florida Statutes; (b) which pesticides fall into the restricted use category; (c) training for unlicensed applicators; (d) safety concerns and personal protective equipment; (e) conversions for small volume applications; (f) pesticide poisoning symptoms, first aid, and the effect of pesticides on the human body; and (g) groundwater advisory statements.

Water Section. The Water Section covers: (a) government regulations regarding groundwater; (b) irrigation regulations; (c) buffering practices for alkaline water; and (d) pesticides and groundwater.

Labor Section. The Labor Section deals with: (a) the Florida Right-to-Know Law; (b) OSHA's Hazard Communication Standard; and (c) the Immigration Reform and Control Act of 1986, including Employment Eligibility Verification.

Hazardous Materials Section. The purpose of the Hazardous Materials Section is to inform growers about: (a) local regulations pertaining to hazardous materials; (b) fuel storage tank regulations; (c) regulation of pesticides as hazardous wastes; (d) DERM's criteria for site assessment; and (e) SARA Title III.

Development Permits and Sensitive Land Use Section. The Development Permits and Sensitive Land Use Section covers: (a) dredge and fill permits; (b) water use permits from the South Florida Water Management District; and (c) water shortage restrictions as they affect agriculture.

Safe Nursery Practices Section. The Safe Nursery Practices Section deals with: (a) sample recordkeeping forms for pesticide applications; (b) Florida Department of Agriculture & Consumer Services (FDACS), Division of Plant Industry (DPI) fire ant regulations; (c) DPI nematode certification; and (d) DPI's Arizona quarantine.

Preliminary Information on Regulations under Review Section. This section covers: (a) EPA's proposed Farmworker Protection Standards; (b) the Florida Department of Environmental Regulation's (FDER's) pesticide waste degradation system permit; (c) the Endangered Species Protection Plant; (d) cholinesterase testing; and (e) Florida's G-1 rule.

Partial List of Material Safety Data Sheets Section. This section contains: (a) an MSDS interpretation guide; and (b) 25 MSDS's.

When the subcommittee finished the compilation process, a draft of the manuscript was sent to four reviewers: 2 University of Florida, IFAS Extension Specialists, an EPA Consumer Safety Officer, and a DERM Environmental Projects Coordinator. The reviews were favorable, so the document was printed and published by the Dade FFA.

Since the document has been printed, the entire Dade FFA Board of Directors has been active in collating and disseminating copies of "The Guide." These activities have helped Board members realize the extent of the informa-

tion available through this sourcebook. Board members have also become involved in promoting "The Guide" to other growers.

Possible Future Directions

The subcommittee which compiled "The Guide" and the Dade FFA Board of Directors recognize the value of updating the information on an as needed basis. Some of the federal regulations pending at the time of publication are now being finalized. In addition, new regulations, particularly local ones dealing with wellfield protection and other issues are being developed. A system to identify, review, duplicate, and distribute this information has not yet been put into place.

Another possible direction for the Dade FFA is more in depth training for their members on specific regulatory issues. The Board has begun addressing this need by selecting speakers for the monthly general membership meetings who are familiar with these issues.

Yet another direction, which is still in the exploratory phase, may come about through informal interactions of growers who are becoming familiar with these various regulations and their colleagues who are as yet unaware of them.

Relevance of "The Guide" to Other Industries

While some of the printed information contained in "The Guide" is specific to nursery growers, growers in southeastern Florida, or both, much of the information is general in nature and so is applicable to growers from around Florida and in other states. The loose leaf form allows for adaptation to specific needs as they arise.

For persons working in an educational capacity with growers confronted by these regulations, the process followed by the Dade FFA is a useful example (Figure 1). This group identified an issue of concern and developed a system for providing reference material on this topic to its membership. Those members who were involved in the subcommittee became very aware of the complex nature

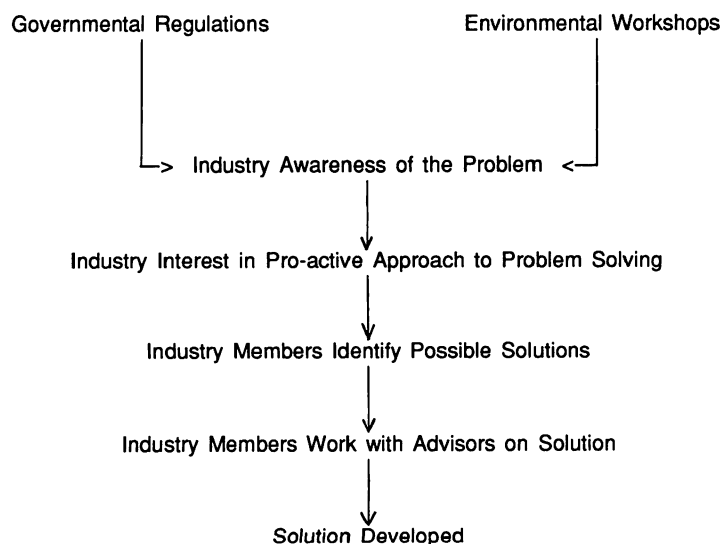


Fig. 1. Inputs into pro-active approach to problem solving as developed by the Dade Chapter, Florida Foliage Association.

of the issue and communicated this to other members. During the sessions where the FFA Board collated "The Guide", other members became aware of this resource as well.

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