action group will have coleaders, preferably an agent and a specialist that will serve for a 4-year period with the design team leader. The coleaders will report to FL107's team leader at regular intervals. Regular reports will include specific needs within the target area and possible support to be provided by FL107 (such as development of new bulletins, workshops, etc.). Action group leaders and design team leaders will decide upon the most efficient interval for reporting and will develop a reporting tool (i.e., electronic newsletter) that will be disseminated to all team members.

Regular meetings will be scheduled to hear action group reports and for FL107 planning. The FL107 design team will review each action group's recommendations, and specific support measures will be chosen. All members of FL107 will then be responsible for providing this support to county extension in a timely manner.

The team members will choose an evaluation tool that will best suit FL107. Special effort will be made to choose an evaluation tool that is practical and efficient for county faculty.

Conclusions

As funds for extension programs becoming more linked to performance-based budgeting and issues programming, state extension programs must adjust to this accountability. The process for making extension delivery more effective was valuable to the members of a SMP in Florida. The resulting action plan is currently being implemented statewide, and has already resulted in improved communication within the organization, better addressing current extension issues at county level while facilitating accountability reporting at the state level.

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Generating Private-Sector Funding for Extension Programs

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ADDITIONAL INDEX WORDS. extension funding, extension publications

SUMMARY. Delivery of modern extension programs involves considerable expenses that are becoming scarce from traditional sources. Successful extension educational programs will need to find additional revenue sources to fund educational materials, speaker costs, conferences, and other needs. It is important to become as financially efficient as possible and sometimes this means consolidating some programs and eliminating others. Charging fees to attendees is one means of covering costs of delivering programs. The University of Florida is partnering with the agriculture industry and trade journal publishers to provide resources and publishing for educational programs and materials.

The means to fund extension educational programs are more diverse today than ever before. Every extension educator knows the challenges facing us in carrying out a proactive and effective educational program in a time of reduced resources. Everyone must take initiative for providing funds for their programs and be innovative in seeking funding sources. Many senior extension educators recall when the needed funds and other resources came automatically and most of our time was spent conducting educational programs. Now we spend a significant amount of time searching for the resources to carry out our programs. Not only are the funds in short supply, but so are the support resources and personnel in some institutions. We must now look outside of our institutions for support resources such as printing, publishing, and distribution.

Many of us have had to reconsider how we conduct the business of educating our clientele. We all know the change that the electronic communication era has brought. Electronic communication and publishing have freed us from the cost, sluggish publication pace, and bulkiness of hardcopy education. However, electronic communication has raised the expectations for faster turnaround and more timely information. Overall, electronic publishing has reduced the cost of producing, storing, and handling bulky hardcopy educational materials. In an era of dwindling resources and personnel, many of us have searched for methods to combine efforts and consolidate projects. In Florida, the vegetable extension specialists and agents found it necessary to

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Fig. 1. Extension clients complete the weed identification Learning Zone. (photo from P. Gilreath).

Fig. 2. Disease identification is an important part of the Learning Zone. (photo from P. Gilreath).

consolidate many of these smaller programs into fewer, larger, and higher quality programs.

Even though we try to find ways to continue to deliver educational information on all related topics, sometimes we come to the realization that eliminating some programs is the best approach. Terminating programs is the last thing that extension educators desire, but, in a cost/benefit analysis, sometimes it is the most appropriate approach so those limited resources can be applied in a more efficient manner with more impact. Extension specialists and administrators must continually review programs and discontinue unnecessary efforts.

Under the more favorable financial conditions of past years, funding of extension programs was mostly derived from the university's general operation funds. Today, funds for our programs must be garnered from extramural grants, and in many cases, we have begun to charge fees for our educational programs and products. Many organizations charge a minimal \$5 or \$10 attendance fee for education programs or workshops. The fee is used to cover costs for handouts, publications, or travel expenses for invited speakers. Publications are very expensive to produce and disseminate, considering the overhead and production costs. Recovering at least a portion of the costs of producing a

publication is becoming standard practice for many university extension organizations.

We are finding the agricultural industry and allied companies in Florida are eager to enter partnerships for funding extension projects, including educational programs, in-service training, publication production, and even partial funding of extension personnel. One of the more common methods available to industry for raising funds is the check-off or box-tax program. These methods raise funds for research and extension programs based on an industry-determined and voted self-tax. Depending on the industry or commodity group, there are many options for providing the funds for research and extension, including competitive grants programs. Many commodity groups in several states have turned to self-taxing programs to direct funds for desired education programs in support of that industry. For example, in Florida, the tomato and citrus industries collect funds (on a per-box basis, i.e., box tax) from the growers. A portion of the proceeds is provided, on a competitive-proposal basis, to the university for research and extension programs. The main benefits of commodity financial support is that the industry can have a voice in the direction of the research and educational programs, and their funds expand the capacity of the university to provide support for that industry. One potential problem with this approach is that the funding level can fluctuate with the income of the particular industry, which is based on the commodity prices for that season.

Education program partnerships

In Florida, we have developed partnerships with allied industry organizations for special projects, including publications and educational programs. One example of a shared educational program effort is the yearly Florida Agricultural Conference and Trade Show (FACTS). One of the challenges of delivering regular educational programs is funding, which is sought from various industry organizations. Many companies find themselves being asked to provide funds for numerous programs every year, which becomes a financial burden for them. This was the situation several years ago for irrigation, chemical, equipment, seed, fertilizer, and other companies in Florida, who were being asked to provide funds and trade show involvement for numerous horticultural extension programs. Likewise, extension staff members were being asked to present information at numerous similar educational programs around the state. In 1995, an effort was made to consolidate the educational programs for vegetables and citrus into one large educational program and trade show. The administrative responsibilities for FACTS rest with an executive secretary of the Florida Irrigation Society.

FACTS provides two opportunities for extension educational programs. The Learning Zone provides interactive learning experiences for crop advisors, growers, and others. Vegetable and citrus insects; diseases; nutritional, physiological, and herbicide-induced disorders; computer tutorials; nematodes; postharvest disorders, weed identification, and water-nutrient management systems are included in the Learning Zone (Figs. 1 and 2). Each learning experience requires 30 min to complete, including a short self-assessment of the knowledge gained. Successful completion of each zone provides 0.5 continuing education units for pesticide licenses and for certified crop advisor certification.

Fig. 3. The Florida Agricultural Conference and Trade Show (FACTS) proceedings provide take-home reinforcement of oral presentations.

Fig. 4. The Florida Tomato Institute Proceedings provides take-home information from one of the largest Florida vegetable extension activities.

Fig. 5. *Scouting Diseases of Tomatoes and Peppers* provides information and visuals for field identification.

About 40 extension agents and specialists participate in establishment and operation of the Learning Zone.

Two half-day oral presentation sessions which focus on timely topics for vegetables and citrus comprise the second educational opportunity. A published proceedings (Lamb and McAvoy, 2000) provides take-home reinforcement of the oral presentations (Fig. 3). Other publications that assist in extension educational programs are the annual *Proceedings of the Tomato Institute* (Vavrina, 2000) (Fig. 4), and *Scouting of Diseases of Tomatoes and Peppers* (Pernezny and

Kucharek, 2000) (Fig. 5). Vance Publishing Co. (Lenexa, Kans.), publishers of *Citrus and Vegetable Magazine*, *The Grower*, *The Packer*, etc., cooperates in publication of these educational materials.

The FACTS program generates several \$1000 of income from the trade show and registration fee that can be used for extension programs throughout the year. Programs funded from the proceeds of FACTS include agent in-service training, agent or specialist travel, and other educational programs.

Publishing partnerships

Partnerships with industry are also used in Florida for production of other extension publications. Traditional methods of producing hardcopy extension educational materials are time consuming and expensive. Many extension faculty members are proficient enough in publishing in electronic format that most publications in Florida are being placed in an electronic database accessible on the World Wide Web. Although many farmers can access electronic information, many still desire and need information in hardcopy format to use in the field. In 1995, the vegetable specialists and agents developed a partnership with Vance Publishing Company to produce the annually revised *Vegetable Production Guide for Florida* (Maynard and Olson, 2000) (Fig. 6), our main source for all vegetable production information and pest management recommendations. The

Fig. 6. *Vegetable Production Guide for Florida* provides cultural and pest management information for Florida growers and crop advisors.

commercial publisher seeks sponsorship (amounting to several \$1000) for the book and prints it, using color, in time for distribution in conjunction with the FACTS. The *Vegetable Production Guide for Florida* has become one of the most popular extension educational tools in Florida.

The production guide example above is a major publication project, but there are other smaller publication projects undertaken with private funding support. For example, many county agents publish newsletters with private

financial support, often rotating the support among several sources. Often, the funding source is permitted to place a small selected educational advertisement in the newsletter.

One of the concerns expressed over the involvement of industry in the production of educational materials is the neutrality of the resulting information and presentation of that material. We have not faced any conflict-of-interest issues pertaining to the presentation of educational materials in an unbiased fashion. We have allowed appropriate and educational commercial advertising in the industry-sponsored publications.

Extension has a large responsibility to provide education to our stakeholders, however, the costs, the need for high quality, and the need for short turnaround time of projects are challenging for the extension service. We must continually search for innovative methods to fund and carry out our extension programs. We have found considerable success in Florida with partnering with commodity organizations and allied industries and their associations. Other states are beginning to use this approach in covering the costs of their extension publications. In the southeastern U.S. (North Carolina, South Carolina, Alabama, Mississippi, and Georgia) state's commercial vegetable recommendations will be produced with industry support.

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A Survey of Professional Turfgrass Managers in Southern California Concerning Their Use of Turfgrass Best Management Practices

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ADDITIONAL INDEX WORDS. survey, best management practices, turfgrass industry

SUMMARY. Turfgrass management best management practices (BMPs) encompass a wide variety of activities, including fertilization, irrigation, mowing, pest control, and soil management. Little attention is given to determining just how effective information regarding BMPs is being assimilated and used by professional turfgrass managers. The objectives of this study were to assess the current perception and implementation of selected turfgrass BMPs and to determine whether or not those perceptions and implementations differed 1) between turfgrass advisors and managers and 2) between general and sports turfgrass managers. Professionals from the turfgrass industry, with an average of 13 years of experience and largely comprised of decision-makers (88%), were surveyed at the University of California, Riverside, Turfgrass Research Conference and Field Day in Fall 1998 and 1999. Turfgrass managers, especially sports turfgrass managers, were found to be the most committed to implementing the BMPs in the survey. Overall, survey respondents considered BMPs to be important and not highly difficult to implement. Limitations to the adoption of BMPs were a lack of financial backing, employee education, and necessary time—all of which could be remedied with a sufficient commitment of resources by the turfgrass industry.

There are numerous definitions of the phrase best management practice, which vary depending on the specific context involved, as well as the currently accepted standards and goals of agronomic management. In general, BMPs are considered to be a set of guidelines or procedures which have been determined, as part of an overall program, to be an effective and practical (technically, socially and economically) method for reducing, preventing, or controlling undesirable effects of management; promoting or maintaining beneficial effects of management; and/or protecting the environment or natural habitat (Campbell, 1996; Hubbard et al., 1998; King County, Wash. Dept. of Transportation, 2000; Lindsey et al., 1998; Logan, 1990; Ohio State Univ. Ext., 1996; One Plan, 2001; South Carolina Forestry Commission, 2001; U.S. Environmental Protection Agency, 2000; Yergert et al., 1993).

Turfgrass-related BMPs encompass a wide variety of activities, including fertilization, irrigation, mowing, pest control, and soil management. There is a great deal of

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