



The Value of the Best Management Practices Outreach Education Program

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Sarasota County was one of the first to require professionals who apply fertilizers in landscapes to pass a 5-h class entitled “Best Management Practices for Florida Green Industries” (BMPs). Since then, other counties and municipalities have passed similar education code requirements. The state target audience is 100,000 landscape management professionals statewide. Sarasota Extension is actively measuring the overall value that the BMPs program has on the individual and environment. Measurements are made using pre-class and post-class tests, voluntary evaluations, and an annual follow-up survey. The process includes: 1) statewide leadership in the fertilizer ordinance/BMPs facilitation with University of Florida Extension and Florida Department of Environmental Protection; 2) guidance to stakeholders and several adjacent counties and cities regarding similar fertilizer ordinances; 3) information dissemination through more than 3000 mailings; 4) maintenance of a BMPs website calendar; 5) creation and maintenance of an online registration system for the 5-h class; 6) creation and maintenance of an online annual follow-up survey; 7) production of a 63-page class reference manual and a 12-min county television public service announcement; and 8) development of a computer database, “Hort Stats,” that tracks the BMP participants and publishes results on the county Extension website. More than 1250 professionals have attended the training in Sarasota, and more than 85% have received the mandatory BMP certification. A 2008 follow-up survey of 383 participants showed an overall improvement in recommended fertilizer practices. One of the most significant was a 27% increase in the number of professionals who use slow-release nitrogen products.

Fertilizer runoff may be a major contributor to water quality degradation both in Sarasota County and statewide. Regulating the use of fertilizers containing nitrogen and/or phosphorus is a major component of a law enacted by Sarasota County requiring professionals engaged in fertilizer and landscape management to pass a one-time course entitled “Best Management Practices for Florida Green Industries (BMPs).” Sarasota County was one of the first to require green industry professionals to take and pass the one-time 5-h class. The Sarasota County Extension commercial horticulture agent was charged with conducting and managing the educational outreach program previously developed by the Florida Department of Environmental Protection (FDEP), University of Florida IFAS, and the green industry.

Other counties and municipalities have expressed considerable interest in the BMPs and the program is expanding. The potential positive impact of this program on Florida’s environment is enormous. More than 4000 professionals represent the potential Sarasota County candidates for BMPs certification and statewide potential candidates are estimated at over 100,000. Benefits to the extension community are also significant as its agents play a major role in the actual delivery of the outreach program to green industry professionals. Sarasota Extension has been a leader in helping educate and support fertilizer ordinance/BMPs development and implementation in adjacent counties and municipalities.

The Sarasota Program

Sarasota’s BMPs consist of five 1-h presentations complemented by a pre-class test, a post-class test, a voluntary class evaluation, and an annual follow-up survey of prior attendees. In addition, the Sarasota class incorporates a local ordinance review presentation highlighting a variety of local rules and essential ordinance information required by surrounding counties and municipalities, five additional demonstration exhibits, and four computer animation demonstrations.

The program is advertised through various mailings (numbering in the thousands) and maintenance of a BMP website calendar. It also consists of the creation and maintenance of an online class registration system and creation and maintenance of an online, annual follow-up survey. A 63-page class reference manual has been developed together with a 12-min county television public service announcement entitled “Do’s and Don’ts of the New Ordinance” airing regularly since 2008, fact sheets, brochures, two-pocket folders containing local ordinance information, a calibration kit for aiding irrigation practices, and a computer database that tracks all class participants, providing running statistics on such measurements as number attended and certified, knowledge gained, and class evaluation results. The computer database also assists in publishing class results on the county Extension website and supports a variety of regular customer service requests.

In early 2008, a special Spanish language version of the BMP program was developed and specialists were employed to instruct the class on a regular basis. The BMPs program became mandatory within Sarasota County in Mar. 2008.

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Sarasota Result

Eleven hundred sixty-eight (1168) professionals have attended 31 Sarasota BMP classes ending in 2008, with over 82% receiving BMP certification. Approximately 82% of the students took both the pre- and post-class tests, resulting in a 15% increase in knowledge. Just over 80% of the students participated in the voluntary class evaluation with over 93% reporting the program as either excellent or good. Over 98% reported that they will use, or already use, the practices and principles prescribed by the course. Ninety-seven percent (97%) of those providing evaluations reported some level of knowledge gained. These results include six special classes (107 participants) held for Spanish-speaking professionals.

Student participation has markedly increased from 60 attendees in 2006, to 245 in 2007 and 834 in 2008. Even during a period of economic hardship, a total of 136 students attended a BMP class during the first 5 months of 2009 (Table 1).

A 44-question follow-up survey of 383 participants attending the program during the first 4 months of 2008 showed an overall improvement in recommended fertilizer practices (Table 1). The response rate was 14% (53 participants) and one of the most significant findings was a 27% increase in the number of professionals who now use slow-release nitrogen products. The majority of the participants (78%) were employed in the lawn care and/or pest control industry. As with the class evaluations, these survey respondents overwhelmingly (98%) reported being either satisfied or very satisfied with the information provided by the BMP program.

Other significant results for the 2008 follow-up survey include:

FERTILIZER UTILIZATION. A 27% improvement was reported by those who stopped fertilizing before heavy rains as a result of the information received from the program, while a 37% improvement was reported by those who now avoid fertilizing in the unique buffer areas around bodies of water. Over 50% of the respondents reported using less fertilizer per year, with the reductions ranging from less than 49 lb of actual nitrogen (15%) to more than 4000 lb (4%).

PEST MANAGEMENT. Approximately 72% of the respondents reported using an IPM program (either often or always) after tak-

ing the BMP class, a 24% increase. Significantly, a 100% increase was reported by those who went from using an IPM program "often" to "always" after completing the program.

IRRIGATION. St. Augustinegrass and bahiagrass are the most common types of grasses serviced by the participants (60%) with 75% of the respondents reporting irrigation times occurring prior to 8:00 in the morning and 88% reporting an irrigation schedule as either only when water restrictions allow or on an as-needed basis to apply one-half to three-quarters inch of water. Irrigation practices follow accepted guidelines with 82% reporting adjusting water amounts according to rainfall and season. Over 52% reported monitoring water distribution and efficiency using the calibration kit provided to participants and 68% reported monthly inspections of their irrigation systems. Of those participants using the calibration kit, over 35% reported water savings ranging from 1000 to over 300,000 gal per year. More than one-third of the respondents reported reducing irrigation run times by 10% to 14% after attending the program.

CLIENT PRACTICES. This survey included several questions addressing relationships the participants have with their clients, particularly with respect to four areas: fertilization, pest management, irrigation, and mowing. At least 88% of all respondents reported that they teach their clients about proper practices in these areas. Respondents (86%) also reported they inform their clients about the environmental benefits of the BMP program.

BMP VALUE. Over 70% reported that they train existing or new employees in BMPs. Over 70% reported that the BMP program helped create a positive public image for their business, saved money, reduced liability, and was useful in maintaining pesticide applicator continuing education units. Over 90% of the respondents felt that the program increased their knowledge, while some 66% to 68% felt it afforded better employment opportunities, job security, and higher income (Table 2).

The State Experience

Since 2006, a total of 108 BMP classes (Table 3) have been held throughout the state, with 3542 individuals participating. Since 2008, some 2564 attended the program with 2246 receiving certified status (88%) and reporting a knowledge gain of slightly over 16%. Both these results closely parallel Sarasota's experience. Also, as of May 2009, some 43 Extension agents have been certified as BMPs trainers.

While program impacts are not available for 2008 and 2009, several were collected for 2006 and 2007. These include an average of 44% who reported they would use the BMP recommendations, 46% who would recommend BMPs standard to their employees and clients, while 62% reported an increase in learning as a result of taking the class. Note that since 2006 Sarasota's program represents 31% of all BMP classes taught

Table 1. Follow-up survey of Florida green industries BMP seminar for 2008 (N=53).

Five selected questions from survey on fertilizer use	Before certification	After certification
Slow release sources of nitrogen usually applied	40% (20)	67% (33)
Never fertilize when heavy rain is forecast	29% (16)	53% (28)
Fertilization is based on results of soil test		
Never	29% (16)	19% (10)
Often	9% (5)	15% (8)
Always	7% (4)	15% (8)
Avoid fertilizing in the buffer zone		
Never	11% (6)	7% (4)
Occasionally	13% (7)	2% (1)
Always	(44%) 24	80% (42)
Use deflector shield or spreader		
Always	(59%) 32	77% (41)

Table 2. Economic related question responses (N=51).

Value of the BMP program to your company?	Important/very important
Creative positive public image	86% (43)
Reduced liability	76% (38)
CEUs to maintain (pesticide) certification	84% (42)
Helps with marketing to the public	82% (42)
Cost savings	72% (37)

Table 3. 2006–08 Best Management Practices.

	No. of classes	Attendance	No. certified	Certificate of completion %	Overall % knowledge gain
Sarasota County	31	1168	957	82	15
Florida (statewide)	148	4226	3841	91	16

throughout the state and 37% of the total people trained. As the BMP program increases throughout the state, additional impact measurements will be obtained.

Conclusion

There is little doubt that the impact of the Sarasota's BMP program has been positive and has had a significant impact on

the landscape management and the professional green industry in the county. Continued certification of these professionals will help reduce fertilizer runoff from lawns and landscape, thereby improving local water quality in accordance with the new Sarasota County Fertilizer and Management Code. Continued expansion of the program statewide can only further help to improve our waterways and environment.