

In general plants with leathery leaves are more likely to have a long vase life, and branches cut when a new flush of growth has matured will probably last longer than those cut when new leaves have just formed. Vase life is also affected by the treatment of the foliage after cutting. The best time to cut is when the leaves are full of water rather than in the middle of a hot dry day. Commercial producers usually cut into a bucket of water, and the stems are usually recut, with the cut end under water, as they are being arranged. Smashing the bottom inch of the stem with a heavy weight is often recommended with the idea of increasing water uptake, but not everyone agrees that this is

effective, and it may actually impede uptake by damaging the cells through which the water enters. All containers should be washed thoroughly between uses to prevent the growth of bacteria that can interfere with the entry of water into the stem and leaves. Some of the materials recommended as treatments for the water for cut flowers may be worth trying—a little sugar, an aspirin tablet, and proprietary substances such as 'Chrysal' have all been used, but their effect is not predictable, and there is still room for a lot of experimentation on the variety of foliage waiting to be tried.

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## THE FLORIDA MASTER GARDENER PROGRAM: HOW SPECIALISTS CAN TAILOR TRAINING CLASSES

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**Abstract.** State extension specialists and county extension personnel with commercial extension responsibilities are often asked to participate in training classes for the Florida Master Gardener program. Slide-tape sets have been prepared for some aspects of the training, but others need to be adapted to the specific needs of the county in which the training class is being held. Dade and Monroe Counties, for instance, have unique soils and a climate which allows gardeners to cultivate subtropical and tropical species which do not grow well in other parts of Florida. Master Gardeners are frequently asked questions about the production of these species and so would benefit from specially tailored training programs. State extension specialists and commercial horticulture agents in Dade County have begun to meet this need for Dade County's Master Gardeners.

### Program Overview

The Florida Master Gardener program enters its seventh year, having trained over 1,800 volunteers in horticulture science to assist county Cooperative Extension staff with their increasing homeowner load. Once trained, Master Gardeners (MGs) volunteer 50 to 100 hours of service per year to the county Extension Service through various projects, ranging from telephone duty to community gardens (3). The reported number of contacts from Master Gardener activities was 62,000 for 1985 in the 34 counties that have held MG training.

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The MG program has proven to be a tremendous asset to the Extension Service by providing the county agent or MG coordinator with a method of structuring specific activities for the homeowner target audience through MG training and their subsequent horticultural programs and activities.

### Materials and Methods

The information for this paper was gathered by formal telephone interviews with county Master Gardener coordinators as well as by mail-out questionnaires and routine files on county MG program. Thirty counties were contacted by telephone survey and, of those, 22 had trained more than one group of Master Gardeners. Thirty-three questionnaires were mailed to supplement the telephone surveys, resulting in 15 responses. Due to a variety of reasons, some MG coordinators did not provide data on training hours; however, 19 county programs are reported in Tables 4, 5 and 6.

### Instructors Change

During the beginning years of the program, both instructors and instruction material for the MG basic training consisted of IFAS extension specialists from Gainesville and the Agricultural Research and Education Centers and selected IFAS Extension circulars and fact sheets.

Slide-tape sets have also been prepared for the majority of the 13 subjects covered in the basic training. These teaching materials were also prepared by IFAS extension specialists. Greater attention to specific local horticultural conditions had been identified by MGs and coordinators as a training need for the program. Thus, the local county MG coordinator (an agent or paraprofessional) began teaching most of the classes. Expansion of the program into a greater number of counties, and limited travel budgets for state specialists also exacerbated the need for local instructors.

Today, county Master Gardener coordinators (extension agents and/or paraprofessionals) present the majority of the MG basic training, supplemented by various local experts. By horticultural specialists or experts, we are re-

ferring to: 1) county and state extension personnel, including state specialists (faculty from Gainesville and the research stations serving as a link between IFAS research and county agents) and county agents other than the MG county coordinator and 2) local horticultural experts (Garden Club members, plant nursery operators, etc.)

The high demand in preparation and presentation time for MG training classes led many MG county coordinators to seek local assistance with their classes. Also, many new agents were insufficiently prepared to address the specific conditions for gardening in their area. In Dade County and some of the other south Florida counties, MG coordinators local extension personnel with commercial responsibilities to present specific material for MG classes. An example of their type of specificity is illustrated by courses taught by Dr. Mary Lamberts, commercial vegetable and agronomy agent for Dade County Cooperative Extension. These classes address the location of propagation material, cultivation, including soil fertility requirements and pest management practices, and postharvest procedures for tropical vegetables. Because south Florida and particularly southeast Florida has unique growing conditions, with reference to soils and adaptability of tropical plants, tailoring MG classes based on this concept can assist in providing MGs with the most appropriate information for use in their work advising residents about local horticultural conditions.

In addition to county extension personnel with commercial agricultural responsibilities serving as MG instructors, other county agents, including 4-H and water specialists, have taught classes. Also a wide range of specialists have been recruited from the local gardening community to assist in the classes (Table 1). Local instructors have included: Florida Federation of Garden Club members, horticultural industry personnel (nursery and garden center), consultants, landscape architects and contractors, turfgrass industry personnel (propagation and maintenance companies), Department of Agriculture plant specialists and urban foresters. A growing number of Master Gardeners are also participating as instructors in MG basic training. With this additional responsibility, MGs have enthusiastically included personal experience with particular questions posed by the homeowner audience with which they interact.

The training is often complemented with locally produced reference material. Many MGs and other instructors have written publications on their particular subject for dissemination at training classes and for future reference and distribution by MGs.

The concept of tailoring the MG training to suit the local growing conditions deserves much attention. Over the long run, it may point to the need for extension specialists to develop training material more specifically geared to local conditions. With Extension's limited budget and time allocation for new MG training materials, the use of local expertise will most probably remain a vital cost-effective component of the MG program.

### Pooling Resources

Pooling of instructional resources has involved regional trainings in several areas of the state. Two to 5 counties have taught their MGs together in central locations, thus saving on instructors' time and funding for separate

Table 1. Instructors with specialties involved in Master Gardener training.

<i>Extension Personnel</i>
Resident county agent (MG County Coordinator).
County agent from contiguous counties.
Urban horticulturist.
IFAS Specialists from U of F, Gainesville.
Specialists from nearby University Research Centers.
County Extension Directors.
4-H leader.
Water specialist.
Master Gardener state coordinator.
Paraprofessionals.
Master Gardeners.
<i>Other</i>
Urban forester (Fla. Dept. of Ag.).
Soil conservationist (USDA).
Horticulture industrial personnel (nursery and garden center).
Landscape architects and contractors.
Turfgrass industry personnel (Propagation and maintenance companies).
Members of gardening community (i.e., Florida Federated Garden Club members).

Table 2. Three-county regional MG training schedule (agent instructor emphasis).

Hours	Topic	Specialist title
½	Orientation	Agent, County 1
2	Basic Plant Science	Agent, County 2
2	Basic Pathology	Agent, County 3
1½	Basic Nematology	Agent, County 3
3	Soils and Fertilization	Agent, County 2
3	Basic Entomology	Agent, County 3
3	Foliage Plants	Agent, County 3
3	Annuals	Agent, County 1
6	Turf	Agent, County 1
3	Woody Ornamentals Culture	Agent, County 1
3	Woody Ornamentals and Pest Management	Agent, County 3
6	Vegetables	Fla. Div. of Plant Ind. Specialist
3	Fruit	Extension Specialist
1½	Household Pest Control	Extension Specialist
1½	Pesticide Safety	Fla. Dept. of Ag. Specialist
6	Field Trip to Campus	Agent, County 1

county trainings (Table 2 and 3). Eighteen different counties have participated in regional training sessions (3).

Table 2 illustrates how agents from neighboring counties have shared MG basic training thus reducing preparation and training time. This is often not a substantial reduction in agent time commitment because agents frequently accompany their Master Gardeners to the other agents' training classes. An obvious advantage in regional training is the utilization of each agent's specific expertise.

Table 3 shows that 7 experts were used in this county's training. The 7 experts only represent 17% of the training time; 10 topics were covered, however. Two agents participated in 83% of the training; however, they taught only 5 different topics.

Despite the greater training time requirement for the MG county coordinators, additional training time has been donated by the various local horticultural experts (Table 3).

### Time Commitment

According to the Master Gardener Sprouting Kit, the first group of Master Gardeners should take about 40% to

Table 3. Single county Master Gardener training (specialist instructor emphasis).

Specialist hours	Agent hours	Topic	Specialist Title
3		Woody Ornamentals	Urban Forester
1		Soils, soil chemistry	Soil Conservation Service Specialist
	4	Annuals	Agent from neighboring county
2 <sup>z</sup>		Safety, equipment, pesticide	IFAS research station specialist
2 <sup>z</sup>		Native plants	IFAS specialist
3		Household insect — basic entomology	IFAS specialist
	50	Review—current problem solving	Resident Agent I
	19	Plant Pathology	Resident Agent II
		Basic plant science	Resident Agent II
		Ornamentals	Resident Agent II
		Turf	Resident Agent II
		Vegetables—general	Resident Agent II
1		Vegetables—setting transplants	Commercial expert from local garden center
3		Citrus and other fruits	Commercial expert from local garden center

<sup>z</sup>For these classes, 2 contiguous counties shared the specialists by training together.

60% of a county coordinator's time (training and management time) while time commitment for subsequent groups should drop from 20-30% (1). Preliminary research, however, suggests that during the training phase this drop is not always taking place (Table 4). Forty-seven percent of the county coordinators reported that this time commitment remained the same between the first and second training sessions while 13% actually experience increased

Table 4. Hours expended in MG basic training by MG coordinators and county agents (by training session and county).

County Agents Basic Training Session (%)					Agent total	Agent <sup>y</sup> %
1	2	change	3	4		
160	83	-32	83	83	409	84
95	—	—	—	—	95	79
50	50	0	50	50	200	80
86	—	—	—	—	86	89
54	—	—	—	—	54	87
94	50	-30	—	—	144	69
100	240	+70	—	—	340	85
166	160	-2	—	—	326	89
160	160	0	160	160	640	87
146	126	-8	73	—	345	83
150	150	0	150	—	450	94
175	175	0	—	—	350	100
80	80	0	80	—	240	100
148	64	-40	96	72	380	80
120	50	-42	—	—	170	100
150	200	+14	64	—	414	80
144	144	0	144	—	432	92
72	72	0	72	—	216	96
— <sup>z</sup>	86	—	86	—	172	91
Total hours:						
2150	1890		1058	365	5463	87

<sup>z</sup>No data available for first session.

<sup>y</sup>Percentage of total instructor hours.

Table 5. Hours expended in MG basic training by university specialists (by training session and county).

University Specialists Basic Training Session (%)					Specialist total	Specialist <sup>y</sup> %
1	2	change	3	4		
40	12	-54	12	12	76	16
25	—	—	—	—	25	21
50	0	-100	0	0	50	20
10	—	—	—	—	10	11
0	—	—	—	—	0	0
50	16	-52	—	—	66	31
50	10	-66	—	—	60	15
12	0	-100	—	—	12	03
55	4	-86	0	4	63	09
50	4	-86	7	—	61	15
10	10	0	10	—	30	6
0	0	0	—	—	0	0
0	0	0	0	—	0	0
48	28	-26	0	12	88	18
0	0	0	—	—	0	0
32 <sup>z</sup>	24	-14	24	—	80	15
32 <sup>z</sup>	0	-100	0	—	32	7
4	0	-100	4	—	8	4
—	6	—	0	—	6	3
Totals:						
468	114		57	28	667	11%

<sup>z</sup>In this case specialists trained 2 counties at the same time, so total hours trained for specialists will be slightly inflated. Agents' hours also will be inflated for the same reason.

<sup>y</sup>Percentage of total instructors hours.

time commitments. Forty percent reported experiencing an average drop of 34% in time committed to training.

Table 5 illustrates a change in the extension state specialist's time commitment as well. State specialists' time

Table 6. Total hours expended in MG basic training by other horticultural experts and grand total of hours expended by all instructors.

Other specialists total center	%	Total of all hours
Total (all sessions)		
	0	485
	0	120
		250
		96
8	13	62
		210
		400
28	8	366
30	4	733
8	2	414
	0	480
	0	350
	0	240
10	2	478
		170
24 <sup>x</sup>	5	518
		464
		224
11	6	189
Totals:		
119	2	6249

<sup>z</sup>2 paraprofessionals teamed up with agents in the last 3 basic training sessions—no hours were given.

<sup>y</sup>Training coincided with MG advanced training in Gainesville so a portion of MG basic training was done at U of F, Gainesville and may have involved other specialists.

<sup>x</sup>5 different Master Gardeners helped train during 2 separate training sessions.

dropped significantly between the first and second training sessions. In at least 4 cases (26%), a 100 percent drop was experienced. There were no increases in time commitment. The majority of the specialists who participated in a county's first training session experienced a 72% decrease in time committed to a second training session. Other specialists (Table 1) represented 2% of all training time recorded. Data was not available for analyzing changes in their time commitments. Agents represented 87% and state specialists represented 11% of all training time recorded. It is clear that other experts could be utilized further since state specialists had had to drop out of the training program.

#### **Other Training**

Some agents have recognized the value of field trips. A few agents realizing the difficulty a MG has absorbing the massive amount of material presented in slide illustrations have augmented their training with numerous field trips. Often the experience provides MG with "hands on training" by visiting nurseries where they can see and touch plants. Some agents bring appropriate plant samples and insect specimens to training sessions. This kind of visual and tactile understanding has a greater impact on MGs than simply viewing slides. In some cases field trips are offered in addition to the regular 50 hours of training. Also, agents who understand that learning does not stop after basic training and have the time provide ongoing training and field trips for their Master Gardeners. In this paper we have concentrated mainly on the basic training

at the Extension Service, however, we recognize the value of field trips and ongoing training.

#### **Conclusion**

In this paper the authors hope to emphasize the value of recruiting instructors from the local regions and from commercial and industrial interests in order to tap their site-specific knowledge. We have also described the value of regional pooling of instructors for a more cost-effective training program regarding specialists' and agents' time. Finally, county MG coordinators may expect minimal time savings between the first and second basic training sessions even with the addition of local experts. The benefits to the county coordinator lie in a larger knowledge base with which to train their MGs.

While the average extension agent spends about a third of his or her work time with volunteers, volunteers invest about 51 days for every day invested by an extension agent (2). Increasing the practicality of training by utilizing local expertise will have a great impact on the value of the days invested by the MG in assisting the county extension staff.

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