



UNIVERSITY OF  
FLORIDA

# EXTENSION

Institute of Food and Agricultural Sciences



## MIAMI - DADE ORNAMENTALS NEWSLETTER



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First Quarter, 2006

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**MIAMI - DADE ORNAMENTALS NEWSLETTER**  
for the Production Nursery Industry

**Miami-Dade County Cooperative Extension Service**  
University of Florida, U.S. Department of Agriculture, &  
Consumer Services Department, Miami-Dade County

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Prepared by Joe Garofalo

Extension Agent,  
Commercial Ornamentals

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### PROFESSIONAL DEVELOPMENT & CEU OPPORTUNITIES, First Quarter, 2006.

(Flier/registration forms available at the CES office  
**2 wks** before each class; or call 305.248.3311.

#### **Nursery, pesticide, last-Thur curricula, 2006.**

Again this year, we offer these lists as fact-sheets. Available mid-Jan, they will help you plan for your educational & CEU needs for the year. The dates & times are as firm as it's possible to make them, but always call before a seminar to be sure that nothing has changed. CEUs listed are our best estimates, based on the proposed agendas. Below is a summary of scheduled classes.

#### **Pesticide training/testing/CEUs, first quarter.**

Study guides (in English) are available at our office for \$8.25 each. Call Mrs. Luna at 305.248.3311 x 242. Classes require pre-registration. Fliers available at the CES office two weeks before each seminar.

#### **SPANISH pesticide classes/exams for 2006:**

General stand/core in **Spanish:** Fri, 4.21; Fri, 10.20.  
Private appl in **Spanish:** Fri, 5.26; Fri, 11.17.  
WPS in **Spanish:** as needed, call 305.248.3311x227.

#### **SPANISH classes for landscape maintenance:**

Limited certification landscape maint, Ornamental & turf, and Landscape safety classes will be offered in **Spanish:** call Henrique Mayer, 305.248.3311 x 231 for details.

## ENGLISH pesticide classes for 2006:

(\*classes marked with \* held at S Dade Gvt Ctr.)  
 General standards/core in **English:** 1.25; 3.22\*; 5.24; 7.19\*; 9.20; 11.15\*.  
 Private applicator in **English:** 4.19; 8.16; 12.5;  
 Ornamental & turf in **English:** 6.21\*; 12.12.  
 Aquatics in **English:** 2.9.  
 Natural areas management in **English:** 10.18.

## Last-Thursday-bag-lunch-CEU seminars.

These seminars offer one CEU:

–in odd-numbered months, one in Private Applicator & related categories; various topics.

–in even-numbered months, one in Core. Core classes are directly from the Study Guide.

–There is no charge for the classes, but interested persons should call 305.248.3311 to register.

- 1.26. Diseases of woody ornamentals.  
Dr Aaron Palmateer, Disease Clinic, TREC.
- 2.23. Understanding the pesticide label.  
Dr. Mary Lamberts, Miami-Dade CES.
- 3.30. Weeds of ornamentals. Dr. Joe Garofalo.
- 4.27. Calibration—apply the correct amt.
- 5.25. Diseases of bromeliads growers/hobbyist.
- 6.29. Pesticide drift and how to prevent it.
- 7.27. Disease control in bonsai.
- 8.31. Florida pesticide laws & reg.
- 9.28. Weed control in container plants.
- 10.26. Pesticide safety & emergency response.
- 11.30. ID & mngt of diseases in palms.
- 12.21. The WPS, pesticide safety

## Nursery curriculum for 2006.

- 2.10. Getting started in the nursery business.  
(am Eng; pm Span.)
- 3.24 (Span), 31 (Eng). Scouting in nurseries.  
(5.12&19)Pre-hurricane season sem. (dates tent.)  
(date tba). Irrigation/fertilization workshop.
- 6.13. Pest management update.  
(am Eng; pm Span.)
- 6.23. How to obtain govt contracts/how to bid.  
(am Eng; pm Span.)
- 7.14 (Eng), 21 (Span). Urban tree short course.
- 9.8 (Eng), 15 (Span). Tropical palms s/c.
- 11.date tba. Cold protection/weather workshop.

## TIMELY TOPICS ... updates & news.

### Weeds—competition plus.

(*Chem Speaking*; from *Weed Sci* 52:774-778. jg)

We control weeds to protect crop yields and quality. Weeds compete for light, water and nutrients, but there may be other effects. Evidence indicates that changes in the quality of light may also be important. All plants have a photoreceptor (phytochrome) that can detect slight changes in the ratio of red and far-red light. The changes affect seed germination and possibly growth and yield. Leaves absorb a high percentage of red light, lowering the ratio of red to far-red. Changes in light quality caused by low-lying weeds could impact growth.

Corn was grown in growth chambers in the presence or absence of weeds (sod). Competition for light, water or nutrients between the corn and the sod was prevented, so any changes in corn growth were due to the quality of light reflected off the sod.

Corn grown in the presence of sod was taller and had greater leaf area than corn with no sod. However, these increases were accompanied by a reduction in root growth. Changes in leaf orientation were also observed. Corn growing beside sod had a high percentage of leaves oriented parallel with the row, whereas those with no sod had leaves perpendicular to the row.

Weed competition early in the season reduces yield, possibly by reducing early root development, which increases susceptibility to drought, heat stress, and insect and disease attack.

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### Growth regulators to promote flowering.

R. Criley, CTAHR (Univ. Of Hawaii).

Over several seasons, foliar sprays of whole trees of plumeria 'Celadine' with 800 mg ethephon/liter of water plus 2 ml X-77 spreader caused complete defoliation in about two wks. Four to six wks later, untreated trees remained dormant, but treated trees were forcing new leaves and flowers, flowered 10 to 13 wks later. Sept treatment brought flowering in Dec, and Oct treatment in Jan; while Nov and Dec-treated trees flowered at the same time as untreated trees, peaking in Mar and Apr. Such treatment could enhance off-season flowering and boost sales. In Hawaii, off-season flowers could be used in leis. Ethephon is registered for use on plumeria to promote winter flower production as Florel and Ethephon 2.

**Growth regulators to delay flowering.**

G.Tamari *et al. Scientia Horticulturae, 1998.* (ed by jg)

Growers who produce vegetative *Impatiens* from cuttings must maintain stock plants by inhibiting flowering without adversely effecting the number, length or rooting capacity of the cutting material.

In this study, Ethrel (from 200 to 800 ppm) and gibberellin (25 ppm) in combination were applied to *impatiens*--in winter and in spring to see if the cutting quality of the stock plants would be improved. The treatments were made as canopy sprays in the afternoon.

In the ethrel treatments, the number of cuttings increased as the concentration increased with double the crop at the highest concentration. However, the cuttings were shorter than those from the untreated plants. Addition of the gibberellin treatment increased the length of the harvested cuttings without increasing the number of flowers. Biweekly treatments of ethrel/gibberellin produce good quality, nonflowering *impatiens* stock plants.

Cuttings should not be harvested in the 3 days following the treatments since large amounts of ethylene are produced during that period and this might be detrimental to the postharvest quality of the cuttings.

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**A few words about horticultural oils.**

T.Weissling, formerly at Ft Laud. REC. (ed by jg)

Oils have been important pest management tools since the late 1800s. In the old days, oils were applied when plants were “dormant oils” are still in use today & work by covering & suffocation all insect stages that overwinter on woody plants. Recently, highly refined petroleum oil have been developed which can be applied to green foliage for control of various pest insects and mites.

The “summer oils” are far less likely than dormant oils to cause phytotoxicity to foliage. Other sources of horticultural oils include fish, citrus & various vegetables. The exact mode of action of horticultural (summer) oils varies. If the spray contacts the insect, it may suffocate it by plugging its spiracles (breathing holes); it may impede the ability of insects to grasp the leaf; or it may change the “taste” of the plant.

Oils offer many advantages for pest control over other insecticides. (cont. directly to the right →→)

**Preparing for the royal palm bug.**

F.W. Howard, Fort Lauderdale REC. (ed by jg)

The royal palm bug, *Xylastodoris luteolus*, is a tiny green bug that attacks only royal palms & only those with 12+ ft of trunk. Outbreaks appear to be cyclic, not occurring every year. There are populations up to 300 bugs per leaflet in late winter or early spring (NOW), until early summer. During the spring period, each young leaf is attacked as it opens. Royal palms produce a new leaf monthly, so during the period of royal palm bug activity, about four leaves are damaged.

In studies on control of the royal palm bug on landscape palms, it was found that Merit (contains imidacloprid) at 1/2 oz per palm, applied as a root drench in late winter (late Jan) was effective for at least 5 months during the warm season, i.e., when the insect is active. Palms that were not treated (controls) suffered extensive damage. It takes a month for the treatment to be effective in the crown.

First, scrape away any organic material (mulch or grass) to bare soil so the imidacloprid will not be tied up in it. If the soil is dry, wet it with 5 gallons of water before applying the drench, but if it’s already moist, pre-wetting is not necessary. To treat, add 1/2 oz of Merit to a 5 gal bucket of water, then pour VERY SLOWLY around the base in a band a few inches wide to concentrate the treatment near the root collar.

This is a preventive method. Unlike the kinds of insect control scenarios in which you see the insects and possibly their damage, then apply control measures, the Merit drench was applied before we saw any royal palm bugs. How could we predict that they were going to be attacked by the bug?...they had been attacked the previous year. During most of the 1990s, royal palms were under heavy attack. This may be because we haven’t had a hard frost since 1989. Since 2000 infestation has been light.

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→→(A few words about horticultural oils...cont)

For starters, they are relatively inexpensive, & are less harmful to adult beneficial insects. In addition, they have very little mammalian toxicity & degrade rapidly in the environment, primarily by evaporation.

The most significant problem associated with the use of horticultural oils is the threat of phytotoxicity. Always follow label directions & avoid application when temps exceed 90 F. To ensure that foliage will not be harmed, spray a small area of foliage that is in the sunlight. Check back after a few days for potential effects.

## Marigolds—French, African, Mexican. (jg)

A probe into the genus *Tagetes*, the marigolds, reveals an interesting name-game. To start with, there are absolutely none from France or Africa; the 30 or so species are native from New Mexico and Arizona south to Argentina, but the commonly-grown species are all from Mexico.

*Tagetes* is in the daisy/sunflower family, the former compositae, now known as the asteraceae. Plants in this family have “flowers” composed of two kinds of very different florets. The “rays” are tongue-shaped (ligulate) flowers with a short tube at the base and one long lobe, the tongue. These ray flowers are the “petals” of a daisy. The flowers in the center are crowded together into a flat disk (more of a dome or cone in many species). The whole structure is a capitulum or head. Depending on the species, the seeds may be formed by the rays (as in *Zinnia*, the old-fashioned old-maids), or by the disk florets (as in the sunflowers and marigolds).

Marigolds have both kinds of flowers, but other genera have disk or ray flowers only, or both; in some, you could be forgiven for not recognizing them as composites because they look nothing like daisies. The seeds of marigolds have a bristle-like pappus or tail on one end, which can make mechanical sowing difficult. To overcome this problem, some companies offer “de-tailed” seeds. The raw seeds remind me of small black brushes with stiff white bristles.

The name marigold is said to come from “Mary” (of religious significance) and “gold,” for the flower color. Other composites known as marigolds include *Bidens* (bur-marigold; a yellow form of Spanish-needles, one of our worst weeds), *Dimorphotheca* (cape-marigold), *Chrysanthemum segetum* (corn-marigold), *Mesembryanthemum* (fig-marigold), and *Calendula officinalis* (pot-marigold); also, *Caltha* (ranunculaceae family), is called marsh-marigold.

Most marigolds are blessed (or cursed) with a robust fragrance, but nowadays some are available without. The fragrance is produced in oil glands on the deeply-cut leaves and released when they are bruised. The fragrance is pleasant, though not at all sweet. If you like their fragrance, their only fault is that they are not self-cleaning, making necessary a weekly dead-heading (removal of spent “flowers”). These faded flowers are unsightly and will cause a reduction in flowering if they set seed. There are now hybrids which are sterile, but the heads are no less unsightly.

The color-range is pretty much limited to yellow and orange, with some mahogany (called “red”) markings in the French type; some may actually be red if your definition of red is generous. The yellow/orange flowers were once used to produce a yellow-buff dye. There are now cream to nearly white cultivars of medium stature, which appear to be semi-dwarfs of the African type. The creams come in rich, warm tones which are very nice, and the whites come very close to white. I believe it depends a lot on your color perception, but to me they’re slightly creamy rather than a cold, hard white.

(Please don’t tell the Burpee breeders that I said that.) Some years back, they selected over many generations for the palest yellows they could find in their breeding lines. Their statisticians collected enough data on the frequency of paler yellows to predict that if they grew some phenomenal number of progeny, one pure-white plant would be found.

They were determined to develop a white marigold, but the statistics were staggering; they could not do it alone. Then somebody had a great idea: their customers would do it for them AND pay for the privilege! So they offered a bounty to the first observant home gardener who purchased their seeds, grew them and found a white one. Some even paler yellows showed up, but they would not give up on the search for white, and after several years, they paid a lucky hobby grower \$10,000 for being the first to find a plant with white flowerheads among the plants he grew from their seeds. The grower had to send the seeds to the breeders, who did a “grow-out” to prove that the color bred true.

The “African” marigold, *T. erecta* (=erect), is the big boy in the family (actually, the genus), a stout 2-3-footer with heads 2-4 inches wide, useable as cut-flowers. There are now available some very uniform cvs, 10 inches tall or less, which initially produce just one, very large head. This makes them useful as low bedding plants, especially in very detailed designs like spelling words in a bed or forming the face of a clock or the shape of a mouse’s head. After the first flower fades, the secondary production is much less uniform, making the beds less attractive, so the plants are usually replaced rather than dead-headed. Unfortunately, these are the most commonly grown African types, & you have to search for cut-flower cvs. Only one, ‘Crackerjack’, is generally available, & its stems are a bit short for cut-flowers, even if you disbud.

The “French” marigold is *T. patula* (=spreading), only one foot or so. The heads are usually no bigger than

1.5 inches across, but are produced in abundance, making this one a good bedder. Head size on newer cvs. approaches that of the smaller-headed *T. erecta* cvs.

There is one cultivated species, *T. tenuifolia* (=slender-leaved), which in the past was grown mainly for its finely-cut leaves, available as tall or dwarf cvs. The dwarf cvs were very popular for edging. They were, in fact, the most popular marigolds, until the dwarf *patula* hybrids displaced them. Recently, I saw pots of *tenuifolia* for sale in a local garden center. These were a cv. covered with one-inch yellow daisies—a really nice-looking pot-plant, probably treated with a growth retardant to keep it under a foot.

I picked one for my garden, put it in my cart and went about the rest of my shopping. At least half a dozen shoppers stopped to ask what it was and where they could get one (a plant that sells on sight!) This was quite a find, or so I thought. After a while, I started wondering what I had stepped in. Then a curious lady bent over to touch and smell the new flower, and she made a face. It was so bad that I put the pot back where I had found it and went to wash my hands. Many don't like the typical fragrance of marigolds, but I do; this plant, however, had a definite odor, not a fragrance.

All the above species are annuals. The belle of the genus, a tender perennial, is a plant with pretty, half-inch flowers and linear, uncut leaves, *T. lucida* (the color of light). This one sports a delightful fragrance & is sold in the herb section as "Mexican tarragon." It can be used as a substitute for the real tarragon. It seldom needs dead-heading—the faded heads are so small & new clusters tend to grow over the old clusters, hiding them. It can be clipped as a low border to one ft. or less, but taller plants tend to fall over. *lucida* is well-branched & usually covered with clusters of the tiny heads, so it's good for bedding. Also, it's a good plant for a spot where passers-by will brush against it, releasing the tarragon fragrance.

There's one other group (2 spp) of note, so ungainly in *Tagètes* that they were removed from the genus, to *Tithònia*. These ugly ducklings are quite beautiful in their own way, once you stop trying to think of them as marigolds. They are much bigger, coarser plants, and have only the remotest resemblance to *Tagètes*. Both are called Mexican sunflower, but one is an annual, *rotundifolia* (=round-leaved), & one a tender perennial, *diversifolia* (=variable leaves).

*Tithònia rotundifolia* bears shockingly orange three-inch daisies on well-branched plants from 2-6 feet.

The original species and the cv 'Torch' reach six feet or more, but the newer cvs are as small as two feet. Those new dwarfs are easier to place, but they've lost some of that original orange color. There's even a yellow one, but it's not very interesting—just another small sunflower. If you deadhead *rotundifolia*, it will bloom for six months or longer. If you don't dead-head, it'll bloom for about a month, then die. [In spite of its name (=round-leaved), it has variable leaves.]

*Tithònia diversifolia* is the tree- or shrub- sunflower that can grow to ten feet or more. It's common in South Florida, with yellow heads as large as six inches, but usually more like four. You get the best flowering if you fertilize, water, and otherwise pamper them. The clumps you see in South Florida are mostly well neglected, so they look a bit unkept.

The plant forms a large, ungainly, multi-stemmed shrub which should be thinned from time to time by removing some of the stems from both the inside and the outside of the clump. If you don't thin, it becomes a rather messy shrub. It blooms sparingly all year and profusely in fall and winter, even if you neglect it. However, once you get it, you'll have it forever, because it refuses to die, no matter how you treat it.

Seeds are produced (in the disk), but I don't know if they're viable. I recently planted some, so time will tell, but I have never seen volunteers. Cuttings of just about any size root readily. In fact, if you do any trimming, you'd better pick up the pieces because most of them will root and grow where they fall. I don't mean to imply that tree-sunflower is weedy, only that it's tough.

All the species discussed require full sun for best bloom, and are relatively disease-free. The *Tagètes* spp are magnets for snails and slugs, and various chewing insects like their flavor as well. They will require treatment for one or both types of pests just about every year.

Under good cultural conditions, marigolds tolerate well the summer heat, so can be used in that time of sparse bedders, but are at their best, as are many plants, during South Florida winters. All the perennial spp discussed, except *Tagètes lucida*, tolerate weeds, but the annuals can't handle the competition, so mulch or otherwise control the weeds.

Here are perennials as tough as nails, and annuals that are easy to grow, have few problems and bloom well in bright, sunny colors. Who could ask for more?

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## **Jerusalem artichoke, sun worshiper.** (jg)

The plant commonly known in the U.S. as “Jerusalem artichoke” is another example from the asteraceae of a plant burdened with an identity problem. Quite simply, nothing is correct about that name: it is not an artichoke, & it has nothing to do with Jerusalem.

Another of the common names helps us understand part of the name-game: girasole, the vernacular name used in many parts of the world, is the Italian name for this plant and a number of others with flowers that turn during the day to face the sun. The word means “turns with the sun,” or follows the sun, or in better English, **sun-flower**. It is presumed that Jerusalem is a corruption of the Italian name, which sounds a lot like Jerusalem.

The scientific name for this somewhat weedy perennial is *Helianthus tuberosus* (Latinized Greek for tuberous sun-flower). How this plant came to be called an artichoke is a pure mystery; I can find no reference which tries to explain it.

There are, to be sure, many perennial sunflowers indigenous to the eastern and southern U.S., including one of the best for gardens, *H. angustifolius* (narrow-leaved), the narrow-leaved or swamp sunflower. It absolutely thrives on wet & dry soils, though not in standing water or desert conditions. The flowers are 2 to 4 inches across.

The swamp sunflower grows to five feet or so, but can be coaxed into blooming as a dwarf; treat it as you would landscape poinsettias—the more you pinch them back, the more growing points, so the more flowers when the day-length is right in the fall. In north Florida, they bloom in August. I’ve bloomed them as short as 2-3 ft, so covered with flowers that they reminded me of pot-mums.

The sunflower grown here for cutting (and sometimes in pots, no matter how inappropriate a subject it is for pot-culture) is *Helianthus annuus*, the annual sunflower. This species has been made to reveal some of its most secret genes (all those colors, the dwarf sizes, and those huge flowers, including doubles that remind you of football-mums). These lay hidden in their chromosomes for evolutionary times, but have been brought forward by plant breeders, as *improvements*. (I’m not so sure they all should be called *improvements*.) These definitely are not your wild sunflowers.

There are a number of cvs developed for grain and oil production, common crops in the drier parts of the

Great Plains and similar country throughout the world. We all know sunflower seeds and oil; they are also fed to poultry, pet birds and wild birds.

Now, back to the Jerusalem artichoke. You can get a start (“seed”) by buying a packet in the fresh vegetable section at the supermarket, in the fall, when the edible part is large, tender & commonly available. I haven’t tried to grow them in South Florida, but they do well in Zone 8 (north and west Florida), and north into Canada.

There are those, including some wildlife, who relish the tubers as food. They are usually available in “natural” food stores and sometimes in the bigger stores. In the improved cultivated forms, the tubers are club-shaped, four inches long and two to three inches wide, weighing three to four ounces. The yield/acre is said to be very high, but I’ve seen no actual figures. Jerusalem artichoke has been called a neglected food source, but I consider it an ornamental; pretty, but too big and tending toward weediness. I grow them as a novelty from time to time, but I don’t see them replacing my swamp sunflowers any time soon.

Old wives tell tales of this being a food of special value to diabetics because it contains inulin (NOT insulin). Once, an old-timer with white whiskers told me something about girasole containing a type of starch that’s safe for diabetics, but his friend, another old-timer with whiskers, quickly added that “they ain’t no such animal.” His old wife added “that ain’t why. I don’t remember why, but that ain’t it.” [They were all partially right. Inulin is a storage food in many composites. Some references (*Jour of Nutrition*. 1999. 129:1402S-1406S) say that it is not digested or absorbed when eaten by humans, therefore does not affect blood sugar levels. If you are interested in the topic, ASK YOUR DOCTOR.]

Who knows? Many things might be possible for a flower that can follow the sun.

Additional flowers, all fragrant, that follow the sun are:  
 –common heliotrope (= “turns to the sun”), perennial to 4 ft, *Heliotropium arborescens* (becoming tree-like) (boraginaceae);  
 –garden heliotrope, *Valeriana officinalis* (=useful), perennial to five feet (valerianaceae family);  
 –two composites, winter heliotrope, *Petasitis fragrans*, perennial, one ft. or less; and  
 –desert-sunflower, *Geraea canescens*, perennial to 1 ft.

www.http://miami-dade.ifas.ufl.edu/  
 programs/common.htm

