**EVENTS CALENDER**

**COMMERCIAL VEGETABLES**

- Okra Production in South Florida

**VEGETABLE GARDENING**

- Spring Soil Testing Results for Vegetable Gardeners: How to Know What You Need
- Urban Farming Workshop 2002

**List of Extension Vegetable Crops Specialists**

<table>
<thead>
<tr>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Twilight Field Day</strong></td>
<td>Thursday, May 9, 4:30 - 7:45 PM. NFREC-Live Oak. For more information call 386-362-1725.</td>
</tr>
<tr>
<td><strong>Commercial Vegetable Marketing In-service Training</strong></td>
<td>May 20-21. To be held at the Mid-Florida REC-Apopka. For more information, contact Fritz Roka at 941-658-3400 or <a href="mailto:fmro@gnv.ifas.ufl.edu">fmro@gnv.ifas.ufl.edu</a>.</td>
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<tr>
<td><strong>FACTS 2002 - Florida Agricultural Conference &amp; Trade Show</strong></td>
<td>May 22, 23. Lakeland Center.</td>
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<tr>
<td><strong>Florida State Horticulture Society Annual Meeting</strong></td>
<td>June 2-4. Marco Island.</td>
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</tbody>
</table>

**Commercial Vegetable Production**

Okra, (*Abelmoschus esculentus*) F. Malvaceae, also called ocra, gombo, gumbo or quimbombo, is a heat-loving vegetable that originated in the Nile basin in Egypt. Okra was brought to North America by African slaves by way of New Orleans and was already known by 1781 in Philadelphia. It became an important crop for the southern United States with major regions
of production in Texas, Georgia, Florida, Tennessee, and Alabama. California also is considered a significant producer of okra.

Okra is an important cash crop for South Florida farmers with the largest acreage, more than 1000 acres planted in Miami-Dade County, where you can find okra fields almost all year round, with the highest production concentrated during spring, summer and early fall months. Okra is grown there on rocky-calcareous soils, characterized by high pH (7.8 and above) and very low water and nutrient holding capacity. Most often it is planted as a second crop during the vegetable growing season, lasting from early fall to the end of April.

**Cultivars**

‘Clemson Spineless’ and ‘Clemson Spineless 80’ are the most popular cultivars grown in Miami-Dade. ‘Clemson Spineless’ is an old, standard, and open-pollinated variety, with dark green, uniform, and slightly grooved pods and plants that are relatively free from spines. This variety is still used, because in comparison to hybrids like ‘Annie Oakley’, ‘Cajun Delight’ and ‘North and South’, the seeds of ‘Clemson Spineless’ are very inexpensive. ‘Clemson Spineless 80’ is an open-pollinated selection from ‘Clemson Spineless’ with shorter plants and good uniformity.

**Plant population per acre**

Plant population per acre in Miami-Dade County is significantly higher than in other places where okra is produced. Typical spacing of plants in-row is often as close as 1-2 inches with 30-36 inches between rows. Some growers ‘thin’ the field, when plants are 2-4 inches tall, leaving about 4 inches between plants, but most of the growers do not use this practice. The average plant population per acre may range from 85000 plants to 101000 plants (with no thinning), as opposed to recommended by IFAS, 43560 plants per acre.

With this small spacing, plants often grow tall and thin, searching for light, with limited numbers of branches. Growers, when asked why they are planting so ‘thick’, always answer that with this very high plant population they are able produce larger crops and make more money.

When the price for okra declines, usually in the summer, growers top or cut back the plants to about 8-12 inches high, using a mower. This practice allows plants to rejuvenate and develop more side branches and to continue fruiting for several more months.

**Fertilization**

Fertilization of okra differs from grower to grower, with some inexperienced growers applying sometimes too much nitrogen and having difficulty in obtaining flowers and pod production. Typically, growers apply about 300 lbs. of 8:16:16 at planting, following with two side dressings with similar amount of 8:16:16. In addition they may use 50-75 lbs. of Urea or Ammonium Nitrate. Some growers do not apply any fertilizer at planting. They apply dry or liquid fertilizer when plants are about 3-4 inches tall and follow with one or two applications of fertilizer later on.

**Irrigation**

Irrigation is provided by using portable irrigation units called ‘big water guns’, usually applying about one acre-inch of irrigation water every 7-10 days.

**Pest Control**

Weed control is a difficult task for growers, with a limited number of herbicides registered for okra. In most cases the first weeding after plant emergence is done by hand, followed by cultivation. The most common weeds are Ragweed and Parthenium. In some cases when growers use the wrong herbicide or when is a heavy rainfall shortly after herbicide application, herbicide toxicity can be observed on young plants.

The most important and damaging pests of okra in South Florida are root-knot and sting nematodes, which cause stunting and wilting of plants. Roots may also rot prematurely. Plants damaged by nematodes produce low yields with poor quality
pods. The production season is much shorter and plants may die prematurely. The nematicide Nemacur is labeled for okra, but it is not used on a regular basis.

Other important insect pests include white flies and aphids, both damaging pods and reducing the yield. Growers have a very limited number of pesticides labeled for okra and this fact often creates serious problems with producing high yields and good quality pods.

The most important disease attacking okra in South Florida in the winter and early spring during cooler weather is Powdery mildew, appearing as a white powdery growth on the underside of older leaves. No fungicides are currently registered to control Powdery mildew.

**Harvesting and Postharvest Handling**

Harvesting of okra starts typically about 60 days after planting and may continue for several months. Typically, fields are harvested every other day. Pods should be 2.5-3.5 inches long, tender and with no fiber present. The over mature pods should be removed on a regular basis. The harvested okra pods are placed in half-bushel wooden crates or waxed cartons.

During the summer months, growers in Miami-Dade County often face postharvest problems related to keeping good quality of okra pods. Immature okra pods bruise easily and the bruises blacken within a few hours. Boxes with harvested okra are often held in full sun in the field for several hours, before being transported to the packing house. Immature okra pods have a very high respiration rate, which leads to a rapid deterioration of the cell walls and blackening of pods in the packing house a few hours later. Properly harvested and handled okra can be kept for about a week in 45-50 degrees Fahrenheit.

**Marketing**

Supplies of okra from Florida peak in June, July and August. Imports from Mexico come year-round, with the pick from June to September. During summer months, price declines rapidly, often going below the cost of production. Currently, growers in Florida do not have an okra budget developed by the University of Florida. There are budgets from the University of Georgia, the University of Minnesota, and the University of California available on Internet, but these budgets were developed for totally different growing conditions and are not really applicable for Florida growers. There is a need to develop a budget based on Florida growing practices.

A large number of growers producing okra in Miami-Dade County are small farmers, in many cases speaking only Spanish, who often use family members as laborers to produce and harvest the crop. These farmers often have no real estimate of how much it costs them to produce a box of okra, and when to stop harvest because prices are below the cost of production.

*(Teresa Olczyk, UF Miami-Dade County Extension - Vegetarian 02-04)*

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**Spring Soil Testing Results for Vegetable Gardeners: How to Know What You Need**

Spring is here and if your extension office is anything like mine, vegetable gardeners are getting their gardens ready and are concerned about soil fertility. Questions may range from which varieties to grow, to how to space plants in the garden. One that is asked quite often is "How do I interpret this soil test I received in the mail?" Whether Master Gardener or fellow Extension Agent, I am discovering that many people have never truly understood the methods used for testing soils and how to interpret the results. Although several options exist for the producer, the most common soil tests performed involve the analysis of soil pH, soil available phosphorus (P), potassium (K), magnesium (Mg), and calcium (Ca). Due to the mobile nature of nitrogen (N) in the soil profile, N is not routinely tested, but instead is recommended based on the nutritional...
requirements of the crop to be grown. However, before we can diagnose other conditions of a particular soil, we should know its pH and how this effects the nutritional conditions for a particular crop. It is the single most important piece of information about a particular soil.

Chemically, soil pH is simply the negative log of hydrogen ions concentration in the soil solution (\(-\log [H^+]\)). pH has a direct effect on availability of essential soil nutrients needed for plant growth. In theory, soil pH ranges from 0 to 14, with 0-6.9 being acidic, 7.1-14 being basic, and 7.0 being neutral. When soil pH is too low (acidic), macronutrient deficiency symptoms may be present. However, when it is too high (basic), micronutrient deficiency symptoms for iron, copper, etc. may appear. Since most vegetable crops grow within a pH range of 5.8 to 6.8, on most test results, lime is not recommended as long as soil pH does not fall below 5.8. Also for soil tests, due to the varying nutritional needs of different plant species, it is known that if a crop is not listed for the sample, no fertilizer recommendations are made to the grower. Since this invariably occurs from time to time, a gardeners Lime Requirement (LR), how much to add to soil, may be calculated using this simple formula:

\[
LR = [26.1-3.4 \times (A-E \text{ buffer pH on soil test})] + 1.02 \times (\text{target pH} - \text{actual pH of soil}), \text{noting that target pH for vegetables is 6.5.}
\]

Lime Requirement recommendations are made in Pounds of Lime/Acre and that this may be easily converted to Pounds Lime/100 square feet or Pounds Lime/1000 square feet by using the standard 43,560 square feet/Acre "magic number".

Finally, we come to the issue of which fertilizers to recommend. Of most concern to gardeners is the correct amounts of N, P, and K to use, and which source is best for supplying these nutrients. Soil test results report pounds of N, P, and K to use/unit area. However, this does not mean pounds of total fertilizer as many assume. Since fertilizers are labeled as 10-10-10, 6-8-8, 15-0-15, or numerous other combinations, we should remember that these numbers are simply ratios, or percentages of each nutrient in the bag as reported on a weight basis, and that the rest of the weight in those fertilizer bags is comprised largely of other ions such as chlorides or sulfates. If gardeners are interpreting their soil test results to mean total pounds fertilizer/area, they are UNDER-fertilizing because no fertilizer materials can contain 100% nutritional content. For example, if a producer is trying to put out 100 pounds of N/Acre, and puts out 100 pounds of 10-10-10 fertilizer, he/she is only putting 10 pounds of ACTUAL N/Acre. When we learn that the correct way to recommend fertilizer application rates is to divide the soil test recommendation for a particular nutrient by the percentage of nutrient in a particular grade of fertilizer, then we may accurately recommend the amount of total fertilizer needed to achieve our goals. For example, if someone’s soil test recommends 3 pounds N/100 square feet, and we understand that fertilizers are reported in percentages, then 8.8 pounds ammonium nitrate (34-0-0) would be needed (3 pounds N recommended / 0.34 = 8.8 pounds ACTUAL fertilizer needed). The same methodology is used for any other grade fertilizer, i.e. to achieve 3 pounds N/100 square feet using 6-8-8 fertilizer, would mean applying 50 pounds fertilizer (3 pounds N recommended / 0.06 = 50 pounds actual fertilizer). This simple calculation may be used for calculating application rates for P and K as well, as they are reported as percentages and ratios also.

Finally, many problems can be solved by simply ensuring that soil test information sheets are filled out correctly and producers correctly label crop codes, as well as taking a trip to the local feed and seed store and noting which fertilizers are available for supplying N, P, and K.

When we gain a better understanding of soil testing methodology and fertilizers for ourselves, we will be able to better serve our clients, whether they are commercial producers or our next door neighbors.

(Joshua Mayfield, Ext.Agt., Gadsden County - Vegetarian 02-04)

Urban Farming Workshop 2002

Seminole County Extension Auditorium
250 W. County Home Road
Sanford FL 32773

April 27, 2002
8:00-8:30  
Registration, View Publication and Demonstration Garden

8:30-9:15  
"Off-the-Shelf Hydroponics" Learn the basic systems and how to set them up using locally available materials. - Richard Tyson, Univ. Fla. Extension, Sanford, FL

9:15-10:00  
"High Value Fruit Crops for Small Farms" How to grow and market high value central Florida fruit crops. - John Jackson, Univ. Fla. Extension, Tavares, FL

10:00-10:30  
Break, View Publications and Demonstration Garden

10:30-11:15  
Opportunities in Aquaculture* Fundamental startup information of molluscan, fish and crustacean aquaculture plus overview of Harbor Branch Oceanographic Institute training opportunities. - Dr. Megan Davis, Harbor Branch Oceanographic Institute, Ft. Pierce, FL

11:15-12:05  
"Low Toxic Bio-rational Pest Control" The latest techniques and science of controlling pests in a bio-rational manner. Dr. Al Ferrer, University of Florida Extension, Sanford, FL

12:30-1:30  
Optional Greenhouse Tours

1 CEU available, for more information contact Richard Tyson, 407-665-5554, fax 407-665-5563 or email: rvt@mail.ifas.ufl.edu

(Stephens - Vegetarian 02-04)

Extension Vegetable Crops Specialists

Daniel J. Cantliffe  
Professor and Chairman

Timothy E. Crocker  
Professor, deciduous fruits and nuts, strawberry

John Duval  
Assistant Professor, strawberry

Chad Hutchinson  
Assistant Professor, vegetable production

Elizabeth M. Lamb  
Assistant Professor, production

Yuncong Li  
Assistant Professor, soils

Donald N. Maynard  
Professor, varieties

Stephen M. Olson  
Professor, small farms

Mark A. Ritenour  
Assistant Professor, postharvest

Ronald W. Rice  
Assistant Professor, nutrition

Steven A. Sargent  
Professor, postharvest

Eric Simonne  
Assistant Professor, vegetable nutrition

William M. Stall  
Professor and editor, weed control

James M. Stephens  
(retired)

Professor, vegetable gardening

Charles S. Vavrina  
Professor, transplants

James M. White  
(retired)

Associate Professor, organic farming