



Panhandle Agriculture

Solutions For Your Farm!

Provided By Your County Extension Agents in Northwest Florida

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In This Issue



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“To be a successful farmer one must first know the nature of the soil.” --- The Greek Philosopher *Xenophon*, from his essay on *Oeconomicus*, 400 B.C.

Go ahead, dig into that rich soil, grab a handful of it, smell it, let it fall back to earth, and think for a moment

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about how truly connected we are to the ground underfoot. “Essentially, all life depends upon the soil ... There can be no life without soil and no soil without life; they have evolved together.” (*Charles E. Kellogg, USDA Yearbook of Agriculture, 1938*). “How can I stand on the ground every day and not feel its power? How can I live my life stepping on this stuff and not wonder at it?” (*William Bryant Logan, Dirt-The Ecstatic Skin of the Earth*). These quotes reflect what the agricultural community intuitively knows and manages every day. The nature of soil, its nutrient content, porosity, composition, etc. is the foundation of successful farming of any kind, even fish farming. We hope you enjoy this issue of Panhandle Agriculture. In it there are a few articles related to the connection between soil and crop production. As always, if you have any questions or comments, please contact your local County Extension Agent. Our phone numbers and emails are listed on the last page of this newsletter.



The good earth, no matter how it is described, we all depend on it.

Photo Credits: University of Florida

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Vegetable Fertilizer Requirements for Florida



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One key consideration when producing fresh vegetables in Florida is the quality of the soil. Most Florida soils are deficient in a lot of areas. Florida soils also have problems with holding and retain nutrients. When vegetables are grown on nutrient deficient soils a good irrigation and nutrient management plan becomes crucial.

The first step in identifying fertilizer requirements is to have a soil test preformed. Soil test kits are available at any County Extension office in the state of Florida. Based on soil test results 25% to 50% of all of the recommended fertilizer should be applied pre-plant and incorporated into the soil before planting. The remanding 50% - 75% should be applied at consistent intervals through the rest of the growing season. When growing crops in a plasticulture system, a water soluble fertilizer should be applied or injected through a drip irrigation system throughout the season.

The optimum pH range should be between 6.0 and 6.5. It is very common in Florida soils for the pH to be below this optimum range. If this is the case there may be a need to apply dolomite lime. A soil test will also indicate the soils pH and recommendations on how to correct it if necessary. A rule of thumb for raising the pH is to apply 5 lbs of lime per 100 sqft or 2,178 lbs per acre to adjust the pH one unit. If the pH is too high and needs to be lowered, apply 1 lb of sulfur per 100 sqft or 435 lbs per acre to adjust the pH one unit. Remember this is just a guide and for more accurate results soil test should be preformed.



Healthy plants start with good soil

Photo Credits:

<http://www.macombcountymi.gov/msuextension/images/DGST.jpg>

For more information contact your local Extension Office or visit http://edis.ifas.ufl.edu/topic_vph. Resources:

Olson, S.M. and B.M. Santos. 2010. Vegetable Production Handbook for Florida. Vance Publishing Corporation. Pg: 83-136, 159-166,211-244,273-316

Florida Vegetable Fertilizer Requirements				
Crop	Target pH	Nitrogen (lbs/A)	Phosphorus (lbs/A)	Potassium (lbs/A)
Cucumber	6.5	150	120	120
Eggplant	6.5	200	160	160
Lima/ Pole bean	6.5	100	120	120
Okra	6.5	120	150	150
Pepper	6.5	200	150	200
Potato	6.0	200	150	120
Snap bean	6.5	100	120	120
Southern/Snow/English Pea	6.5	60	80	80
Squash	6.5	150	120	120
Sweet Corn	6.5	200	150	150
Sweet potato	6.5	60	120	120
Tomato	6.5	200	150	225
Watermelon	6.0	150	150	150

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Profitable Vegetable Production Requires Proper Timing



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The term “timing is everything” certainly applies to field vegetable production. In fact, with some crops there is only a brief period of time for planting that allows for optimum conditions and yields. If planted too early or too late, a crop failure or low yield is almost sure to result. Depending upon the specific vegetable, growth and development is determined by temperature, day length or both.

Some of the most time sensitive vegetable crops include tomato, strawberry, and bulbing onions. Since the tomato is one of the most popular vegetables, the special planting time that it requires is worth exploring.



Heavy yields of high quality onions and strawberries require fall planting dates in Northwest Florida.

Photo Credits: Dan Mullins

Transplants for the field grown summer tomato crop are usually established during March or early April as soon

as the danger of the last spring frost has passed. This allows enough time for the production of a sizeable plant before flowering begins.

Though flowering starts to occur only a few weeks after transplanting, pollination is controlled by night temperatures. The best night temperature for optimum pollination and subsequent fruit set is in the mid 60s and low 70s F. When temperatures are lower or higher poor fruit set occurs because the pollen either becomes sterile or pollen tubes cannot develop properly.

Tomatoes are so sensitive that most spring planted tomatoes only set fruit well in late spring when night temperatures are optimum, and most fruit is then mature and harvested in June, July and early August. After summer night temperatures creep into the mid-70s, fruit set ceases or declines and what fruit is present is usually small and misshapen.

Occasionally a grower invests in a fall field grown tomato crop. Considering the timing necessary for flowering when night temperatures are right, plants are established from mid-July to early August. This allows enough time for growth, development and flowering as night temperatures drop into the low 70s in September and early October.

Fall tomato production is more challenging than spring production due to increased disease and insect pressure. However, fresh locally grown tomatoes made available in November and early December are in demand and can fetch good prices.

Strawberries are grown as annuals and planted in the fall in this region. Day neutral varieties such as Camarosa, Sweet Charlie, Strawberry Festival and Carmine are best transplanted to the field during mid-September to mid-October. These varieties make vegetative growth, form a sizeable plant and bear fruit the following March, April and May. The spring planting of strawberries, as is done in other regions, is not recommended in this area.

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These IFAS references provide recommended planting dates and other information for Florida vegetable growers.

Photo Credits: Dan Mullins

Bulbing onions provide another example of our unique set of planting dates. Short day onion varieties such as the Granex types including Sweet Success, Granex 33, Savannah Sweet and Sugar Belle are started from seed in September or plants are set later in the fall. With proper varieties and timing it is possible to grow beautiful large onions. Onions started after January result in very small bulbs, or plants with no bulbs at all.

Even when the timing is right and the vegetable crop is up and growing, the rate of growth and development is controlled by accumulated temperatures or “heat units”. This is the number of hours above a certain temperature threshold, which is different for different vegetables. In tomatoes the threshold is 51 degrees F. and peppers have a 55 degree threshold.

The table shown contains base or threshold temperatures for 21 vegetables. Temperatures below the base result in no growth and development, while heat units or accumulated temperature hours above the base for each vegetable affect the rate of growth and development. The time of establishment is therefore of utmost importance to a grower of “unprotected” crops, or those grown exposed in the field. If planted too early many of the

warm season vegetables either experience freeze damage or do not develop normally because of low temperatures. On the other hand, those planted too late often experience problems due to excessive heat, light and longer days.

Two recommended sources for vegetable planting dates in Florida are *The Vegetable Production Handbook for Florida* and the “Florida Vegetable Gardening Guide, SP103. The Handbook is provided for commercial producers and is available online at http://edis.ifas.ufl.edu/topic_vph. and at some County Extension offices. The Gardening Guide, though written for home vegetable gardeners, contains a table with specific establishment dates for vegetable crops in North, Central and South Florida. It is available online at <http://edis.ifas.ufl.edu/vh021> and at County Extension offices.

GROWING DEGREE DAY BASE TEMPERATURES	
CROP	BASE TEMPERATURE (°F) ¹
Asparagus	40
Bean, snap	50
Beet	40
Broccoli	40
Cantaloupe	50
Carrot	38
Collards	40
Cucumber	55
Eggplant	60
Lettuce	40
Onion	35
Okra	60
Pea	40
Pepper	50
Potato	40
Squash	45
Strawberry	39
Sweet corn	48
Sweet potato	60
Tomato	51
Watermelon	55

Threshold temperatures for 21 vegetables. Adapted from D. C. Sanders, H. J. Kirk, and C. Van Den Brink, “Growing Degree Days in North Carolina,” North Carolina Agricultural Extension Service AG-236 (1980). ¹Temperature below which growth is negligible.

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Liming Fish Ponds to Increase Nutrient Availability



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The application of limestone (Calcite or Dolomite) to fish ponds with acidic soils can increase the availability of nutrients, primarily phosphorous, to aquatic plants, especially phytoplankton. Phytoplankton (microscopic free-floating plants) are the base of the food chain in fish ponds, and are fundamental for fish production in recreational ponds and commercial ponds in which fish are being reared. A pond's water quality reflects the type of soils in its watershed, or drainage area. In acidic soils, ponds typically have low alkalinity, low hardness, and low pH. Hardness and alkalinity values of less than 20 parts per million (ppm) and a pH value of 6 or less, are common in many ponds in North Florida. Fish production in these waters is usually lower than in ponds with a higher pH. Addition of calcite (calcium carbonates) or dolomite (a combination of calcium and magnesium carbonates) limestone can increase the pond's total hardness, total alkalinity, and pH, and act as a buffer to keep the pH steady. The rise in pH is primarily responsible for increasing the availability of phosphorous from the pond muds. Although pH values range from 1 to 14, a pH of 6 to 9 is considered desirable for most freshwater fish.

Identifying liming needs can be accomplished by taking either a water or soil sample from the pond. Measuring the total alkalinity of water in the pond is the most effective and easiest way to determine if liming is necessary. Local county extension offices are often equipped to measure the total alkalinity of a water sample, or can assist you with purchasing a test kit of your own, or sending a water sample for laboratory analysis. Use of

Lime depends on the management objectives of your pond. To increase the pond's total fish production, liming is generally recommended for ponds with a total alkalinity of less than 20 ppm. If your pond is used for recreation, or wildlife viewing, or you do not need to increase fish production, then liming is not necessary. Adding limestone to low alkalinity, low pH ponds changes the water quality characteristics. Clear water often becomes green as liming increases microscopic algae growth. Before liming your pond it is important to consider the use and current water quality of the system.



Small ponds offer many opportunities for swimming, boating, wildlife habitat, fishing, and fish production.

Photo Credits: Judy Ludlow

Common application rates for limestone are 1 to 2 tons per surface acre. However, a more accurate rate can be calculated by taking a soil sample from the pond bottom and having a laboratory make a recommendation. Collection of soil samples is easiest before ponds are filled, but can be taken in a pond with water. Pond soil samples can be taken from a boat by using a can attached to a long pole. Samples should be collected from the top 6 inches of soil, from numerous locations in the pond. It is

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recommended that 12 samples be taken from ponds up to 2 acres, and 25 samples be taken from larger ponds. These samples are then thoroughly mixed, dried, and at least one pint of soil is sent to the laboratory. Check with your county extension office for information on soil testing.

Limestone is best applied directly to the pond bottom prior to filling the pond with water. It should be spread evenly over the entire bottom. Applying limestone to ponds which are full of water is more difficult, but can be done without fear of harming the fish. Limestone can be dispersed from a small boat or most agricultural farm services have spreader trucks that are capable of spreading limestone over a given pond surface from the pond bank. Limestone can be added anytime, but it is recommended that applications to water be made during the fall and winter months.

Limestone will take several weeks to complete its impact on the water quality, and will usually last several years in ponds with little or no outflow. Ponds which frequently discharge water may need to be limed annually. Total alkalinity and pH should be monitored to determine the necessary frequency of liming.



A nutrient rich catfish farm pond.

Photo Credits: Judy Ludlow

Aquaculture specialist Charles E. Cichra and from UF Fisheries and Aquaculture publication #FA 38 *The Use of Lime in Fish Ponds* by Andy M. Lazur, Charles E. Cichra and Craig Watson, <http://edis.ifas.ufl.edu/fa028>

Telone® II Farm Demonstration



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A field application to reduce economic yield losses from nematodes was conducted on April 6th at Mr. Charles Brown Farm near Greensboro, Florida. The demonstration targeted small farm producers to inform them about nematode culture, management, benefits, and field application by Dr. Jim Rich, Nematologist, UF/IFAS NFREC-Quincy and Matt Hoffman, sales representative for Dow AgroSciences. Twelve farmers attended the demonstration and received firsthand demonstration on the appropriate application and safety concerns. Telone II is a preplant soil fumigant for control of all major species of nematodes, including root knot, lesion, stubby root, dagger, ring, and cyst nematodes. Telone II is injected into the soil, as a liquid where it converts to a gas, creating a zone of protection around developing roots. As a fumigant, Telone moves throughout the soil profile on its own, rather than requiring water or incorporation for movement. The product application was conducted on two field sites that were prepared for okra and watermelon production. Untreated areas within each field were flagged-off as control plots and will be used to compare plant growth rate and crop yields for this growing season.

Information for this article was provided by UF/IFAS

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Audience view: Matt Hoffman (center) demonstrating farm and fumigation equipment and set-up along with Jim Rich (left), Charles Brown (right)

Photo Credits: Alex Bolques

AgriVine

Items of Interest, Calendar of Events, CEU Opportunities & More

Southern Pine Beetle Prevention Cost-Share Program.

The FL Division of Forestry will once again be accepting applications for the Southern Pine Beetle Prevention Cost-Share Program. The sign-up period will run from May 20, 2010 through July 1, 2010. The goal of the program is to minimize southern pine beetle damage in Florida by helping forest landowners reduce the susceptibility of their pine stands to this destructive insect pest. Periodic southern pine beetle outbreaks in Florida have resulted in millions of cubic feet of pine timber killed on thousands of acres. Forest management practices, such as thinning, prescribed burning, other competition control, and use of less-susceptible pine species, can improve the health of pine stands and decrease the likelihood of developing southern pine beetle infestations.

The program offers an incentive payment for non-industrial private forest landowners who conduct a first pulp-

wood thinning, and partial cost reimbursement for pre-commercial thinning, prescribed burning, mechanical underbrush treatments, and planting longleaf pine. The program is limited to 44 northern Florida counties located within the range of the southern pine beetle. Qualified landowners may apply for no more than two approved practices per year. The minimum tract size requirement is 10 acres and funding requests may not exceed \$10,000. Application forms and more information on program requirements and procedures can be obtained from a local Division of Forestry office, or landowners can visit www.fl-dof.com to obtain application materials and contact information for county forester offices. All qualifying applications received during the sign-up period will be evaluated and ranked for funding approval. The program is supported through temporary grants from the USDA Forest Service and limited funding is available.

Handy Guide to USDA Agency Descriptions

USDA provides leadership on food, agriculture, and natural resources and touches the life of every American. Secretary Vilsack and the USDA are working to promote a sustainable, safe, sufficient, and nutritious food supply; ensure that America leads the global fight against climate change; and revitalize rural communities by expanding economic opportunities. Below are descriptions of all the USDA agencies, explaining the multitude of ways they touch the lives of the American people every day and in every way.

Agricultural Marketing Service (AMS) administers programs that facilitate efficient, fair marketing of U.S. agricultural products, including food, fiber, and specialty crops. USDA developed and oversees the National Organic Program. You can be assured when you see the USDA Certified Organic seal that your food conforms to consistent, national standards. More info: www.ams.usda.gov or (202) 720-8998.

Agricultural Research Service (ARS) is the principal in-house scientific research agency of the USDA. The

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agency is responsible for developing solutions to a wide range of problems related to food and agriculture – ensuring high-quality, safe food and other agricultural products; assessing the nutritional needs of Americans; sustaining a competitive agricultural economy; enhancing the natural resource base and the environment; and providing economic opportunities for rural citizens, communities, and society as a whole. More info: www.ars.usda.gov or (301) 504-1636.

Animal and Plant Health Inspection Service (APHIS) protects the health of livestock, poultry, and crops from foreign diseases and pests. APHIS also helps defend the environment from invasive species, promotes animal welfare, regulates the movement of genetically engineered organisms, ensures safe trade, limits agricultural damage caused by wildlife, and protects natural resources while providing for public health and safety. More info: www.aphis.usda.gov or (301) 734-7799.

Center for Nutrition Policy and Promotion (CNPP) works to improve the health of Americans by establishing the Dietary Guidelines for Americans and promoting nutritional guidance and education. Go to www.MyPyramid.gov for a network of nutrition tools, including tips on how to make smart choices from every food group, find a balance between food and physical activity, and stay within your daily calorie needs. The CNPP web site also offers personalized eating plans and interactive tools to help you plan and assess your food choices. More info: www.cnpp.usda.gov or (703) 305-7600.

Economic Research Service (ERS) is USDA's principal social science research agency. ERS communicates research results and socioeconomic indicators via briefings, analyses for policymakers and their staffs, market analysis updates, and major reports. ERS supports the goals of USDA with objective analysis, addressing issues that cover the food sector, nutrition and food safety, the farm sector, agricultural trade, rural development, and the environment. More info: www.ers.usda.gov or (202) 694-5050.

Farm Service Agency (FSA) ensures the well-being of American agriculture, the environment, and the American public through farm commodity programs; farm ownership, operating, and emergency loans; conservation and environmental programs; emergency and disaster assistance; and domestic and international food assistance. FSA programs are delivered through an extensive network of field offices. More info: www.fsa.usda.gov or (202) 720-7163.

Food and Nutrition Service (FNS) increases food security and reduces hunger in partnership with cooperating organizations by providing children and low-income people access to food, a healthful diet, and nutrition education. SNAP (Supplemental Nutrition Assistance Program) which issues monthly benefits on electronic benefit transfer cards that can be used to buy food at authorized food retailers, is the cornerstone of FNS' nutrition assistance programs. FNS administers 15 nutrition assistance programs that include SNAP, school meals and WIC that benefit low-income people and the agricultural community. More info: www.fns.usda.gov or (703) 305-2281.



Food Safety and Inspection Service (FSIS) is the public health agency responsible for ensuring that the Nation's commercial supply of meat, poultry, and egg products is safe, wholesome, and correctly labeled and packaged. More info: www.fsis.usda.gov or (202) 720-9113.

Foreign Agricultural Service (FAS) works to improve foreign market access for U.S. products, build new markets, improve the competitive position of U.S. agriculture in the global marketplace, and provide food aid and technical assistance to foreign countries. FAS has the primary responsibility for USDA's international activit-

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ies—market development, trade agreements and negotiations, and the collection and analysis of statistics and market information. It also administers USDA's export credit guarantee and food aid programs, and helps increase income and food availability in developing nations by mobilizing expertise for agriculturally led economic growth. More info: www.fas.usda.gov or (202) 720-7115.

Money Available for Energy Improvements/Renewable Energy Systems

Agricultural Producers and Rural Small Businesses can apply for grant money to help reduce their energy consumption. USDA-Rural Development has a program entitled, "Section 9007 Rural Energy for America Program (REAP)". The project must either make energy efficiency improvements or for purchase of a renewable energy system. Additionally, the project must be for a pre-commercial or commercially available energy system and consist of replicable technology; the project must have technical merit; the project must be located in a rural area; the applicant must be the owner of the project and the site must be controlled by the applicant; and satisfactory sources of revenue in an amount sufficient to provide for the operation, management, maintenance, and debt service of the project must be available for the life of the project. Examples of energy efficiency projects would be improvements to heating/cooling, lighting, irrigation systems and refrigeration systems. Some examples of renewable energy systems would be renewable biomass, anaerobic digesters, solar panels, wind, geothermal, or hydrogen. The project is only for the farming operation or business and cannot be attached to a residence. The grant money is a maximum of 25% of the project. Guaranteed loans can be applied for to cover some of the balance, but the applicant must provide a minimum 25% or 50% (project dependant) of the money from other sources. The application cycle is released in a Notice of Solicitation for Applications (NOSA). This year's application cycle has not been an-

nounced but is anticipated and interested parties can start working on their application in preparation for the announcement. For more information please call the USDA office in Marianna (850) 526-2610 Ext. 4

Farm Service Agency County Committee Nominations Happening Now

Farmers, ranchers and other agricultural producers may begin nominating eligible candidates to serve on local Farm Service Agency county committees, announced Charles H. Golden, CED, of the USDA's Farm Service Agency (FSA). "County committees play a vital role in the administration of federal farm programs and the positive effect they have on rural communities," said Golden. FSA county committees make decisions on commodity price support loans, conservation programs, disaster programs, employing county executive directors and other significant agricultural issues. To hold office as a county committee member, a person must participate or cooperate in a program administered by FSA, be eligible to vote in a county committee election and reside in the local administrative area in which the person is a candidate. A complete list of eligibility requirements is posted online at:

http://www.fsa.usda.gov/Internet/FSA_File/ccoeligib_10.pdf Individuals may nominate themselves or others as candidates. Additionally, organizations representing minorities and women may nominate candidates. All nominees must sign nomination form FSA-669A, which includes a statement that the nominee agrees to serve if elected. Form FSA-669A is available at USDA Service Centers and online at: <http://www.fsa.usda.gov/elections>. All nomination forms for the 2010 election must be post-marked or received in the local USDA Service Center by close of business on Aug. 2, 2010. The county committee nomination period began June 15. Voting takes place in the fall. Ballots will be mailed to eligible voters by Nov. 5. The final day to return voted ballots to the local USDA Service Center is Dec. 6. Newly elected county committee members take office Jan. 1, 2011. For more information about FSA county committees, visit a local USDA Service Center or online at:

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<http://www.fsa.usda.gov/>. Then select the County Committee Election Page.

UF, FAMU Announce 2010 Small Farms Conference

Florida's first statewide Small Farms and Alternative Enterprises Conference was such a success, organizers are making plans for a second event in summer 2010, and potential exhibitors and guests are encouraged to make plans to attend. Once again held at Osceola Heritage Park in Kissimmee, the event will take place July 31 and Aug. 1. Attendance is expected to top 1,000 farmers and agricultural professionals this year. Features will include speakers, educational sessions, exhibits of products and technologies, livestock displays, demonstrations, networking opportunities and more. Early registration is encouraged. For more information, visit the Small Farms and Alternative Enterprises Web site at <http://smallfarms.ifas.ufl.edu>. The Small Farms and Alternative Enterprises Conference is hosted by the University of Florida's Institute of Food and Agricultural Sciences and Florida A&M University's College of Engineering Sciences, Technology and Agriculture.

The University of Florida IFAS Extension Needs You!

The University of Florida IFAS Extension works towards agricultural, environmental, and economic sustainability in our rapidly growing state and communities.

We accomplish this through research-based educational programs, publications, and opportunities provided to you locally.

Please consider donating to the UF IFAS County Extension office in your county. Your monetary gift is greatly appreciated, and will be used to continue our efforts at providing information and education you want and need.

To find out more about making donations and endowments to University of Florida IFAS Extension, please contact your County Extension Agents listed below, or Joe Mandernach, IFAS Development Office, at 352-392-5457, jmandern@ufl.edu.

Thank You!

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