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Agronomy Notes

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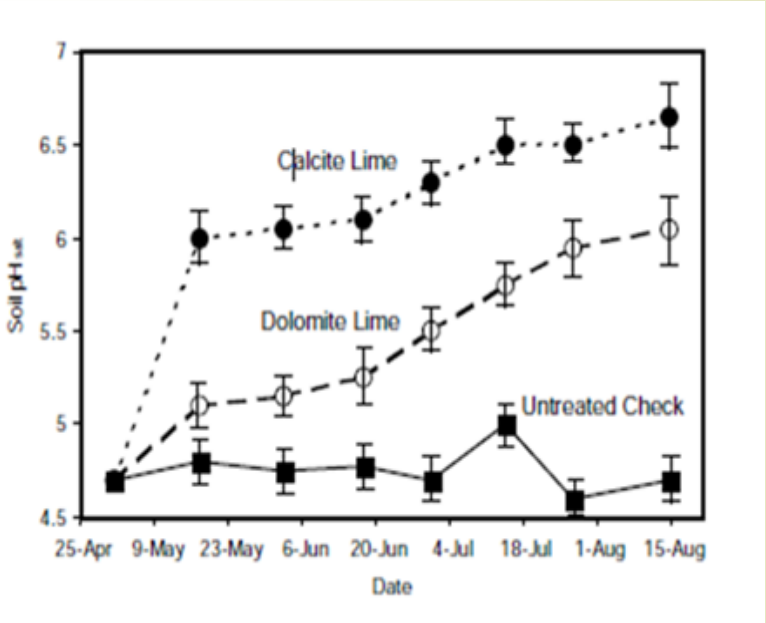
Calcium on Peanuts

Nutrient needs of peanuts are less than many crops that are commonly grown in Florida. Calcium (Ca) needs are especially high for peanuts and the fruit develops from nutrients absorbed directly from the soil rather than from nutrients transported from roots to shoots and back to the fruit, which is the case for most crops. Calcium deficiency results in high incidences of pod rot and unfilled pods called "pops". This deficiency results in low yields, low grades, and poor germination. Relatively high concentrations of Ca are needed in soil solution with critical Ca absorption period beginning about 20 days after the entrance of the peg into the soil and may extend for up to 2 months. Since peanuts are often grown on sandy soils, which are drought prone, there is a limited ability of these soils to replenish the soil solution Ca. Heavier soils and irrigated soils are better able to supply the needed Ca for proper uptake. The Ca needs are primarily for pod and seed development not for growing a healthy plant. Test soils and apply the needed amounts of Ca for good yields and quality. Ca can be supplied from various sources including dolomite (22% Ca and 11% Mg), hi-cal lime (32% Ca and 3% Mg) and gypsum (23% Ca and 17% S). Gypsum is a fairly soluble source of Ca and does not increase pH while providing Ca for peanuts. If the pH of a field is low prior to planting peanuts, use hi-cal lime as it changes pH quicker than dolomite even though final yield is usually not impacted.



Impacts of dolomite vs. calcite lime on pH change over time when liming a low pH soil. *G. Stevens, UMO*

Peanuts with pegs just entering the soil and a critical time for high Ca levels in the soil
Photo by David Wright

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Square Shed in Cotton

Significant yield potential is lost by premature shedding of squares and young bolls. Several factors influence square and boll shed and these include water stress, high temperature, nutrient deficiencies, disease and insects. Anything that results in a decrease in photosynthates will increase square and boll shed. In general, younger squares and bolls have a higher shed rate due to hormonal balance while bolls 14 days old and older seldom shed. Therefore, it is important to control as many stress factors as possible during the first 3-4 weeks of bloom so that an early crop is set which may require fewer inputs and result in an earlier harvest. After a period of drought, a rain may occur and growers will notice a significant fruit shed as noted in the picture below. This is a common occurrence in most years and should not be a big concern. Cotton blooms over a period of 8 weeks in July and August often undergo stress during this period. It is desirable to set most of the crop in the first 3-4 weeks to prevent excessive vegetative growth which makes for more difficult management and harvest. In the far west, it is common to make 4 bale cotton per acre while 2-3 is more common under good growing conditions in the Southeast. Rain in open bolls can cause fruit shed due to lack of pollination which often occurs in July and August in Florida while cotton grown in Arizona will only have water from furrow irrigation in most years.

Small squares of cotton that aborted due to stress of dry weather

Photo by David Wright

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Scout for Caterpillars (Loopers and Armyworms)

Looper (Moscis spp.).
Photo by Yoana Newman.

With the onset of rains and end of summer approaching be scouting for caterpillar presence, armyworms (*Spodoptera sp*.) and loopers (*Moscis sp*). The best time to check (and to spray) for these insects is either early in the morning or close to sunset, at which time they are most active. By walking your pastures frequently you will be able to detect their presence when they are small and easy to control. When the grass has moisture build up, —if these pests are present they will fall on your rubber boots allowing to detect when they are in an early stage. A product like Dimilin 2L (which is an insect growth regulator that disrupts the normal molting process of the insect larvae) with residual effect is recommended only when the worms are small (1/2 inch or smaller) and before populations build . Although this product is effective, due to the mode of action, Dimilin 2-L is slow to control, and signs of control with this product may not be seen until 5 to 7 days after treatment. If needing to control worms in less than a week other products should be used (see Table below). If infestations are already in place try grazing the affected area before treating. For additional options, see table below:

Product*, **	***Rate (Product per acre)***	***Restrictions (waiting time prior to utilization)***	***Maximum number of applications***
Malathion 57% EC	1.5 to 2 pints per acre	None	No restrictions
Sevin XLR	1 to 1.5 quarts/acre	14 days for hay or grazing	Two (2) or less per year
Lannate LV	¾ to 3 pints per acre	7 days for grazing 3 days for haying	No more than 4 applications per year
Dimilin 2L	2 fl oz per acre/cutting	No restrictions for grazing 1 day for hay	No more than 6 fl oz per year. Cannot apply more than 2 fl oz per acre/cutting
Tracer	1-2 fl oz/acre	3 days for hay or until it has dried if grazing	
Baythroid XL	2.6-2.8 fl oz/acre	none	No more than 4 applications per year
B.t.	See label	none	none
Coragen	3.5-5.0 fl oz/acre	None	No more than 4 applications per year
Karate	2.6-3.4 fl oz/acre	0 days for grazing 7 days for haying	No more than 3 applications per year
Mustang	3.0-4.0 fl oz/acre	3 days (hay or grazing) 7 days for harvesting seed	No more than 5 applications per year

* This information is for preliminary planning purposes only. Be sure to always read and follow pesticide labels and guidelines for any product you plan to use.
** adapted from Sprenkel and Buss, 2011.

Fall Army Worm, Adult (left) and Larvae (right).
Photos by Lyle Buss.

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Berseem Clover

Berseem clover (*Trifolium alexandrinum*) is a cool-season annual legume, also called Egyptian clover, is a fast upright-growing, very palatable legume option for wet areas in Florida. This legume is adapted to the southernmost areas of the US, and was introduced in the state in the early 1950s. The early literature presents berseem as the fastest winter growth legume of more than 50 species tested in the Fort Pierce area. The main uses include green manure, greenchop, and grazing.

This clover comes from the Nile Delta in the Mediterranean where it has been used as a green manure crop for hundreds of years—Berseem tolerates poor drainage and relatively high soil salt content, which makes it a good candidate for many areas throughout Florida, particularly central and south. Although Berseem does not have high cold tolerance since the foliage will freeze, it shows full and quick recovery from cold snaps (upper 20s), if they are not prolonged.

The varieties that are commercially available are Bigbee, and CW 9092. Commercial innoculant for white clover works well on this legume. Varieties Bigbee and CW 9092 have performed well on trials conducted in central Florida in the last couple of years. Production is between 2500 to 5000 lb/acre and 2 to 3 cuttings can be obtained depending on the year.

For additional information visit the Forages of Florida website at

http://agronomy.ifas.ufl.edu/ForagesofFlorida/

Top: Berseem clover flower closeup, *photo by C.G. Chambliss.*
Bottom: Berseem clover foliage, *photo by Y.C. Newman*

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Daily Water Use by Agronomic Crops:

Potential Evapotranspiration (ET) Rates are Available from the IFAS Florida Automated Weather Network (FAWN)

The IFAS Florida Automated Weather Network, FAWN, located at http://fawn.ifas.ufl.edu/, provides a valuable source of weather information from many locations across the state of Florida. In addition to extensive real-time and archived raw weather data, the FAWN site has some other useful data that are computed from the collected weather data at each location. One example is **potential evapotranspiration (ET)** rates of crops, a useful input for determining irrigation needs for a crop.

The table below, extracted from the FAWN site, shows potential rates of evapotranspiration (ET= crop water use) for a typical, but non-specific crop over a 7-day period in mid July at various locations across Florida. These potential ET values were computed from weather data (collected at FAWN sites) using the Penman-Monteith equation. Potential ET will vary from day to day as a result of changes in environmental conditions (light intensity, relative humidity, wind speed etc.). A **7-day total** potential ET is also given in the table.

Location	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	7 Day Total	Daily Avg in inches & (gals/acre/day)
Jay	0.21	0.19	0.13	0.1	0.05	0.19	0.22	1.09	0.16 (4239)
Marianna	0.19	0.17	0.08	0.06	0.1	0.2	0.21	1.01	0.14 (3923)
Quincy	0.2	0.18	0.1	0.07	0.1	0.2	0.21	1.07	0.15 (4139)
Alachua	0.19	0.18	0.12	0.11	0.19	0.18	0.18	1.15	0.16 (4457)
Ona	0.18	0.13	0.16	0.18	0.2	0.18	0.2	1.23	0.18 (4756)
Clewiston	0.21	0.19	0.2	0.21	0.16	0.17	0.21	1.35	0.19 (5241)

Potential ET values in the table are given in units of inches/day and are representative of water use for crops that are **well-watered** (not water stressed) and have a **complete ground cover** (that is, leaves completely cover the ground surface; rows are fully overlapped so that if one looks down on the crop the only thing one sees are green leaves – there is no exposure of the soil surface.).

Potential ET rates do not vary a great deal over the various locations across the state during the month of July (it's hot and humid throughout the state during the summer months), although during this 7-day period shown above potential ET seemed to be a bit higher in S. Florida. Some of the lower daily values in the above table are most likely a result of cloudy days, or days when thunderstorms may have occurred. While the numbers in the table represent potential ET for a non-specific reference crop, **actual** ET rates for crops like **corn**, **peanut** and **cotton** may be slightly greater than potential ET rates. And, of course, when determining the amount of irrigation water that needs to be applied to meet daily ET demands, the efficiency of the irrigation system must be considered.

Just as an example, let's use a 7-day total potential ET of 1.25 inches, an estimated increase of 15% above potential ET for a crop like peanut, and an irrigation efficiency of 75%. This would result in the need for 1.92 inches (1.25 + (1.25 x 0.15)/0.75) of irrigation needed over the 7-day period, assuming there is no rainfall. That's 0.27 inches per day, typical values during mid-summer for agronomic crops in Florida.

To view tables such as the one shown above, go to the home page of FAWN (http://fawn.ifas.ufl.edu/) and select the following from the tabs at the top of the home page: → Fawn Tools → Irrigation → Evapotranspiration

To view a 14-day graph of potential ET values for a particular location: Select Location → Go

Computed Potential ET values can be helpful in estimating how much irrigation water to apply during periods when supplemental water is required to keep crops free from water stress.

Weed Science

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Palmer Amaranth Wiper

Palmer amaranth continues to be problematic in peanuts across the southeast. This season has been particularly difficult considering that many non-irrigated fields didn't receive enough early-season rainfall to activate the preemergence herbicides. Now that the few postemergnece herbicides have been used, there are limited options for the remaining weeds.

Fortunately, Gramoxone Inteon has been registered for use in wiper applicators. These wiper-applicators can be very effective, but success is not guaranteed. For these applications, you simply must get enough herbicide on the plant to provide a lethal dose. Though this is common-sense and seems easy to achieve, it can be more difficult than it sounds. Below are a few tips to help maximize success.

The herbicide should be mixed as a 50% solution. Ground speeds should be kept to a minimum. Experience has shown that speeds greater than 5 mph can result in reduced control.

For optimum performance, 50% of the plant should be wiped. However, these high rates of Gramoxone Inteon (50% solution) has been shown to translocate through the plant. If a full 50% of the Palmer amaranth can't be wiped, the application can still be effective.

Roller and sponge applicators have proven to be the most consistently effective. These applicators work best because they are simply capable of wiping more herbicide on each plant.

If using a roller-applicator, carefully watch roller speed. Faster roller speeds allow you to drive faster and cover more acreage. But, faster roller speeds can sling herbicide solution and cause excessive peanut injury.

Dense patches of weeds will require slower ground speeds if adequate amounts of herbicide are to be applied to all the weeds. To determine the best speeds, some growers have begun adding foamer (such as used for foam markers) to the spray tank. The foam allows the driver to easily see how much herbicide is being applied to the weeds (due to the presence of the foam) and speed can be compensated quickly.

Though using a roller takes time and technique, it can be a highly effective way to remove late-season weeds.

Forages

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"Conservation Outcomes from Pastureland and Hayland Practices" - Grazing Lands New Publication

Look for the upcoming publication "Conservation Outcomes from Pastureland and Hayland Practices" by CEAP. The Conservation Effects Assessment Project (CEAP) is a multiagency effort that started in 2003 to evaluate published research to determine if outcomes desired from conservation practices used by private landowners are supported by science.

The Grazing Lands component of the CEAP National Assessment (CEAP-Grazing Lands) will quantify the environmental effects of conservation practices used on pastureland and rangeland. Results from CEAP will help policy makers and program managers implement existing and design new conservation programs to more effectively and efficiently meet the national goals. In addition, CEAP will identify gaps in scientific knowledge and recommend ways to build a timely science base for conservation

You can find additional information on the CEAP National Assessment: Grazing Lands at
http://www.nrcs.usda.gov/technical/nri/ceap/grazing.html

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Chemical Fallow on Muck Soils

Weed pressure in fallow sugarcane fields in south Florida has increased following recent rainfall. Growers have traditionally used mechanical cultivation to manage weed populations during the fallow period prior to sugarcane planting later in the year. Fallow fields are also flooded to control weeds in addition to managing wireworms. With increasing fuel costs and soil subsidence, chemical fallow can be a practical and economical option for weed control during the fallow period.

Photos: 1. Cultivated fallow field in the Everglades Agricultural Area. 2. Flooded fallow field in the Everglades Agricultural Area. 3. Fallow field following glyphosate application in the Everglades Agricultural Area.

Photos by Calvin Odero

Chemical fallow is the use of herbicides instead of tillage to control weeds on fallow land. Chemical fallow can be considered a form of conservation tillage, which is an integral component of sustainable agriculture in reducing both input costs and soil loss.

Most chemical fallow systems use foliar-applied herbicides. Several formulations of glyphosate, the foundation of these programs is used alone or combination with other herbicides. Most formulations of glyphosate contain some surfactant. The need for additional surfactant when using glyphosate should be based on the quality and amount of surfactant present in the formulation. It is important to always consult the label for specific information on the need for surfactants and other adjuvants. The number and rate of glyphosate applications in fallow fields should be based on weed pressure present in the field. Single glyphosate application can made at 1 to 2 qt/A. Multiple applications of glyphosate will be more effective in controlling difficult to control weeds such as bermudagrass during the fallow period. Glyphosate can tank mixed with 2,4-D at 1 qt/A or graminicides such as Select Max and Poast at 8 fl oz/A and 2 pt/A, respectively for improved efficacy. It is important that herbicide applications be made before weeds produce seeds which can be a source of re-infestation in subsequent seasons.

Pesticides

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Maneb Registration Update

EPA is revoking all the tolerances for the fungicide maneb with expiration/revocation dates that provide sufficient time to use existing stocks of the canceled registrations for the last food uses of maneb in the United States. This regulation is effective July 12, 2011. Based on the previous comments received, the Agency agrees that there is a need for more time to exhaust existing stocks of maneb. Therefore, EPA is revoking the tolerances for maneb in 40 CFR 180.110 with the expiration/revocation dates of December 31, 2012. The Agency believes the extended time is sufficient and consistent to allow users to exhaust existing stocks and allow sufficient time for passage of treated commodities through the channels of trade.

Objections and requests for hearings must be received on or before September 12, 2011. Under the Federal Food, Drug, and Cosmetic Act (FFDCA) section 408(g), 21 U.S.C. 346a, any person may file an objection to any aspect of this regulation and may also request a hearing on those objections. You must file your objection or request a hearing on this regulation in accordance with the instructions provided in 40 CFR part 178.

Calendar

To follow the link, press "Ctrl" and put cursor over link, and "click."

Aug. 29-Sep 1 **EPAF (Extension Professionals) Annual Conference**, Orlando, Fl FL. http://epaf.ifas.ufl.edu/

Aug. 25 **Integrated Pest Management Field Day for Pasture Management**, Lake City, FL. http://columbia.ifas.ufl.edu/documents/IPMFlyerAugust2011.pdf

Oct. 3-5 **Southeast Herbicide Applicator Conference**, Panama City Beach, FL http://conference. ifas.ufl.edu/sehac/index.html

Oct. 16-19 **American Society of Agronoy Annual meeting,** San Antonio, TX https://www.acsmeetings.org