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PLANT & SOIL SCIENCES DEPARTMENT

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Cropping Systems Newsletter

OKLAHOMA COOPERATIVE EXTENSION SERVICE

Special points of interest:

- **Getting the Most out of Your Glyphosate**
- **Selecting Peanut Varieties**
- **Early Season Irrigation for Peanut**
- **Soil testing for Oilseed Crops**

Getting the Most out of Your Glyphosate

Case Medlin, *extension weed specialist*

Scanning herbicide label(s) before spraying is not an enjoyable part of weed control and actually reading the label makes one even more nauseous. However, reading and understanding the details of the label(s) may be the difference between good and excellent weed control.

For example, lets consider a glyphosate (i.e the active ingredient in Roundup, Touchdown, etc. formulations) application. Most of you know (1) weeds must be emerged and actively growing for glyphosate to control them, (2) glyphosate does not have soil activity, and (3) glyphosate controls both grasses and broadleaf weeds. Many of you also know, some forms of glyphosate require the addition of a surfactant and the addition of AMS (i.e. ammonium sulfate) may improve herbicide performance. However, two years ago when I asked a group of 8 to 10 soybean producers when it was most critical to include AMS in the spray solution, about half of them knew the answer (i.e. when spraying with "hard water"). When I asked, "what should the mixing order be when filling the herbicide tank," even fewer responded correctly.

One of the subtle, often overlooked details of glyphosate labels is, "Ensure dry ammonium sulfate is completely dissolved in the spray tank before adding herbicides." One should think of AMS as a water conditioner, not a spray adjuvant. The function of AMS is to remove free calcium and other cations from the water carrier prior to the addition of the glyphosate herbicide. This keeps the free cations from binding with the herbicide and making it unavailable for plant uptake. Therefore, the correct response to my question was, (1) add most of the water to the tank, (2) add the AMS and make sure it completely dissolves [liquid forms of AMS are sold, making this step easier], (3) add the glyphosate herbicide of choice, (4) add other surfactants/additives if necessary, and (5) add the last few gallons of water to achieve the proper volume. This will benefit those with hard water conditions the most, **so have your water tested**.

Useful Links:

www.soybean.okstate.edu

www.canola.okstate.edu

http://alfalfa.okstate.edu

www.wheat.okstate.edu

http://forage.okstate.edu

Selecting Peanut Varieties

Chad Godsey, *cropping system specialist*

Many of you have probably noticed that peanut varieties available from companies are limited for this upcoming growing season compared to previous years. The trend of wanting only high oleic varieties continues so it may be difficult to find varieties that are not high oleic. This may not be a bad thing as high oleic peanuts are in greater demand. You should select varieties that are well adapted to your climate, varieties that fit into your crop rotation (growing season length), and have high yield potential. Other peanut characteristics that you should consider include disease resistance and quality traits. If you have not chosen varieties for 2006 a good source of information to consider is the variety trial data from 2005. Summarized data is given below for some common varieties that will be available this year.

Table 1. Summarized results from the 2005 Peanut Variety Trials.

Cultivar	Yield[1]	Grade[1]	Sclerotinia Blight[2]
	Lbs/A		%
Runner			
Tamrun OL 02	4011	71	68.4
Flavor Runner 458	3446	72	64.7
Spanish			
Tamspan 90	2940	71	6.3
OLin	2844	70	6.3
AT 98-99-14	2662	70	19.1
Spanco	2617	71	11.6
Pronto	2369	71	8.1
Virginia			
Gregory	3244	67	52.2
Brantley	3226	71	55.9
Jupiter	3081	72	28.1

[1]Averaged over all locations in west and southwest Oklahoma.

[2]Measurments taken on September 29 from the high disease nursery (Ft. Cobb) results reported in 2005 Partners in Progress Report.

"You should select varieties that are well adapted to your climate, varieties that fit into your crop rotation (growing season length), and have high yield potential."

Soil testing is important for oilseed crop production

Hailin Zhang, *Nutrient Management Extension Specialist*

It is possible to apply unneeded fertilizer or animal manure if the nutrient status of field is unknown. This not only costs money, but the excess nutrients also may enter water supplies and cause environmental problems. It is especially important to have a soil test when the fertilizer prices are high. On the other hand, applying inadequate fertilizer could reduce yields and decrease profits. Soil samples help determine the nutrient status of the soil. Fine-tuned nutrient management will result in more efficient fertilizer use, which can increase yields, reduce costs and potentially reduce environmental pollution.

Careful soil sampling is essential for an accurate fertilizer recommendation. A sample must reflect the overall or average fertility of a field, so subsequent analyses, interpretations and fertilizations accurately represent the nutrient status of the soil. Soil varies by location, slope and past management. Consider each of the following to obtain a good soil sample:

Sampling Area: A composite soil sample should represent a uniform field area. Each such area should have a similar crop and fertilizer history. A soil survey map may be helpful in identifying sampling area. Exclude small areas within a field that are obviously different. These can be sampled separately if they are large enough to warrant special treatment. One sample should represent no more than 40 irrigated acres or 80 dryland acres.

Sampling Procedure: Follow a random zig-zag pattern to get a minimum of 20 cores from the sample area. Mix these subsamples thoroughly and save one pint for analysis. Fewer subsamples taken in a given area results in less accuracy in evaluating the nutrient status of the soil.

Sampling Depth: Take the surface sample to tillage depth or about 6 inch for routine fertility analyses.

Sampling Time: Typically, the best time to soil test is before each cropping season, but be sure to allow enough time for analysis and fertilizer recommendation. It is generally takes less than 2 weeks in Oklahoma.

Sample Handling: OSU soil sample bags, probe and other information related to soil testing are available at your local county extension office. County Extension will mail your samples to OSU Soil, Water and Forage Analytical Laboratory and assist you to interpret test results.

A routine soil test including pH, nitrate-nitrogen, plant available phosphorous and potassium is need for most crops, but secondary and micro-nutrient analyses may also be important to a successful legume crop production. Peanuts require more calcium than most other crops. Both zinc and boron are essential micronutrients, but they are toxic to peanuts and some other oilseed crops when present in large quantities in the soil, irrigation water or fertilizers. Soil test will provide you with reliable recommendations on lime and nutrients. More information on soil testing and fertilizer recommendations is available at http://www.soiltesting.okstate.edu/.

"Careful soil sampling is essential for an accurate fertilizer recommendation . A sample must reflect the overall or average fertility of a field, so subsequent analyses, interpretations and fertilizations accurately represent the nutrient status of the soil. "

Early Season Irrigation for your Peanut Crop

Chad Godsey

Irrigation scheduling is an important part in managing a growing peanut crop. Historically, western and southwestern Oklahoma receives between 10 to12 inches of rainfall, therefore, additional water must be applied to maintain a healthy peanut crop. A healthy peanut crop typically requires between 22 and 26 inches of water during the growing season. The growth of a peanut plant can be characterized in three general phases: pre-bloom/bloom, pegging/pod set, and kernel fill/maturity with water use varying during each phase. Typically water use is the lowest during the pre-bloom/bloom phase and highest during pegging/pod set. However, it is still advised to limit water stress during pre-bloom/bloom as yield can be reduced if significant water stress is observed. Research from the University of Georgia shows the effect of water stress after emergence (Table 1).

This data shows that water stress during any time of the growing season may reduce yield. When water stress occurred from 30 to 65 days after planting, yields were reduced by 580 lbs/acre compared to the optimum moisture treatment. Often soil moisture for the first part of the growing (emergence to 30 days after planting) is adequate but in dry springs early season irrigation is required to germinate the seed and get even emergence. The important take home message is that water stress during anytime of the growing season may result in yield loss.

Table 1. Effect of moisture stress on yield.

Stress Period (days after planting)	Yield (lbs/A)
30 - 65	3960
65 - 100	2900
100 - 135	4120
Optimum moisture	4540

Kvien, Coastal Plain Experiment Station, Tifton Georgia, 1987-1988

Subscription information

The *Cropping System Newsletter* is published in electronic format on an as needed basis throughout the year. To receive an electronic copy in pdf format, send an email with **subscribe** as the subject line to chad.godsey@okstate.edu

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