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2008

Final Progress Report for 2008  
Fertilization and Nutrient Management Trials in Peanut

Principle Investigators

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Objectives

To evaluate how peanut responds to fertilization treatments and determine the most cost effective way to manage nutrients in a peanut cropping system

Progress as of September 2008

A number of field trials were established in Tifton in 2008. All trials were conducted on small plots (2 rows wide by 40 foot long) and replicated 4 times. All plots will be harvested for yield.

1) Sulfur – Currently there is no fertilizer recommendation by UGA for sulfur on peanut. However, due to its use in the past as a fungicide, it is still being used. The purpose of this study was to determine if there is a nutritional requirement for sulfur by peanut.

This trial was established at the RDC pivot with single-row Georgia Green on a Tifton soil, irrigated. Treatments include:

- 10 lb S/a as calcium sulfate
- 20 lb S/a as calcium sulfate
- 30 lb S/a as calcium sulfate
- 20 lb S/a as ammonium sulfate
- 21 lb S/a in 3-9-18
- Foliar S as elemental S
- Foliar S in ammonium thiosulfate

2) Gypsum Rate

The rate of gypsum recommended by UGA is 160-200 lb Ca/ on runner peanuts and 320-400 lb Ca/a on large-seeded Virginia types. However, growers are looking into using reduced rates due to cost and not needing the full rate based on a pegging zone test.

This trial was also established with single-row Georgia Green at the RDC pivot on a Tifton soil, irrigated. AgriCal, a flue gas desulfurized (“smokestack” gypsum from the Southern Company) was used as the gypsum source. Treatments include:

- 0 lb Ca/a
- 500 Ca/a
- 750 Ca/a
- 1000 Ca/a

### 3) Gypsum Source

This trial was established at the RDC pivot with single-row Georgia Green on a Tifton soil, irrigated. All gypsum treatments were applied at a rate of 500 lb/a. Different sources used for the treatments include:

AgriCal  
Palletized  
PCS wet bulk  
Ben Franklin bagged  
USG 500  
Limestone  
None

### 4) “Grain Set” to Improve Yields

Every year there are products made available to Georgia peanut growers that claim to improve plant growth and ultimately, yield. This small test was conducted using a new product called “Grain Set” manufactured by a company called Improcrop.

This trial was established at the RDC pivot with single-row Georgia Green on a Tifton soil, irrigated. Treatments included, simply foliar applying “Grain Set” on treated plots and leaving others as untreated controls. This study was replicated 6 times.

### 5) Soil pH

Peanuts were established on long-term pH plots at two locations in Tifton, near the Tifton vegetable park and at the Bowen Farm on Goat Road. Single-row AP3s were established to determine the effect of different levels of pH on peanut yield.

### 6) Boron

Three separate foliar boron studies were superimposed on the long term pH plots at the location near the Tifton Vegetable Park. Every year, “new and improved” formulations of boron are brought to the market, or additives designed to make foliar boron uptake more efficient. However, few of these have ever proven to be more efficient or economical compared to standard formulations that have been around for a long time

#### a) Source – treatments included:

Solubor  
CNI liquid 10 % B (boric acid)  
Wolftraxx  
Boron Xtra  
Untreated control

#### b) Boron Xtra vs. Solubor – Treatments included:

4 oz/a Boron Xtra  
1 lb/a Solubor

20 oz/a Boron Xtra  
0.35 lb B/a Solubor  
0.07 lb B/a Solubor  
Untreated control

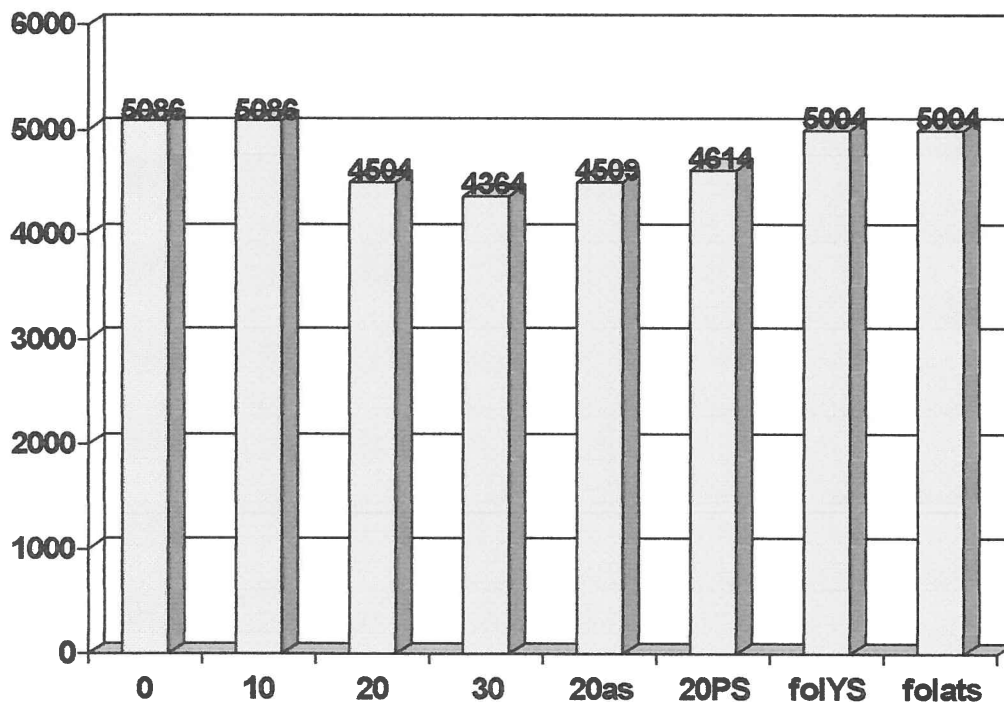
c) Kafe Plus Boron – Kafe supposedly stands for “kick ass foliar enhancer” and is suppose to improve the uptake of any fertilizer nutrient it is added to. Treatments included:

6 oz/a Kafe  
6 oz/a Kafe + 0.25 lb B/a Solubor  
6 oz/a Kafe + 0.25 lb B/a 10 % liquid B  
0.25 lb B/a Solubor  
0.25 lb B/a 10 % liquid B  
Untreated control

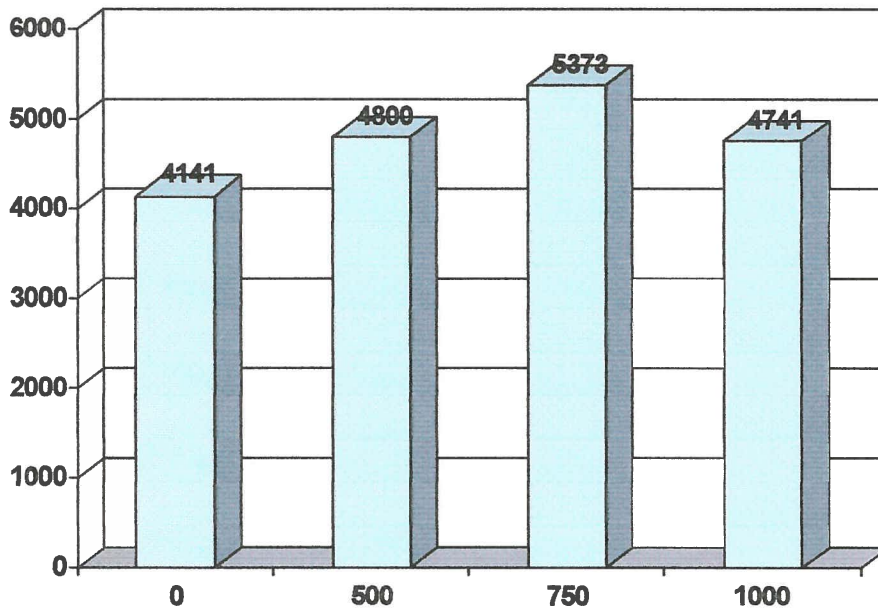
Progress as of December 31, 2008

All plots were harvested and some of the data has been analyzed:

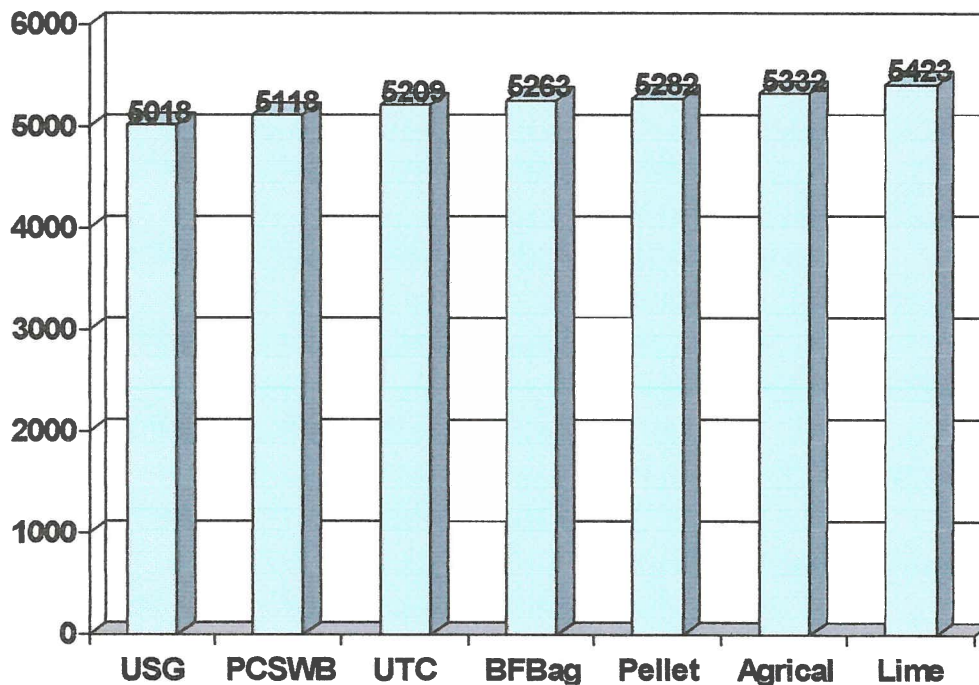
Sulfur: There were no significant yield differences between any sulfur treatments in this trial, and in fact, numerically, all of the sulfur treatments except the 10 lb/a treatment yielded less than the untreated check. This seems to confirm the UGA recommendation that peanuts are good scavengers of soil sulfur and should not need any applied.



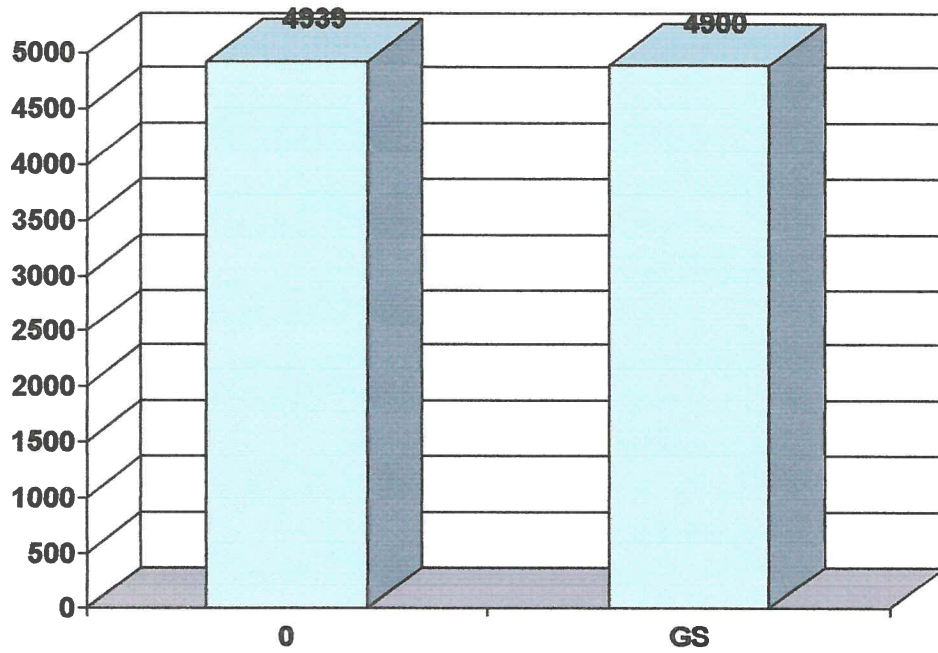
Gypsum Rate: While there was no statistically significant yield differences in this trial, yields for these single-row Georgia Green appeared to increase when going from 0 to 500 and again from 500 to 750 lb/a. The 1000 lb/a treatment however dropped back down to a yield comparable to the 750 lb/a rate. The optimum gypsum rate in this trial appeared to be 750 lb/a and the reason for the drop in yield at the 1000 lb/a rate is unknown.



Calcium Source: There was no significant yield differences between any of the gypsum sources. Numerically, all but the USG 500 and the PCS Wetbulk gypsum increased yields over the untreated check.



“Grain Set”: There was no difference in peanut yield between the grain set treated plots and the untreated check.



Yields from the rest of the studies are still being analyzed. In addition, grades were analyzed on some of the studies presented here and the data are currently being analyzed.