ADAPTING SPATIAL TECHNOLOGIES IN COTTON MANAGEMENT IN LA

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LOUISIANA COTTON

- One of the major row crops in Louisiana
- Produced on 621,776 acres in 2006
- 6 year average Farm Gate Value $258 million
- Second to sugarcane with average Farm Gate Value of $331 million
PRECISION AGRICULTURE
PRECISION FARMING
PRESCRIPTION FARMING
SITE - SPECIFIC MANAGEMENT
ACCURATE ACREAGES

- Needed for planning, purchasing, and payment for services
- Traditionally obtained acreages from USDA
- Field studies showed inconsistent acreage accuracy
- Some fields have temporally variable acreage
Digitizing Error

Field Changes

102.7

28.3

64.1
Change: 30.6 ac
Proper fertility essential for optimum yields
Traditionally producers have applied a uniform “average” rate across production fields based on random soil samples
Often results in over or under application
VARIABLE RATE PRESCRIPTIONS

**POTASH Rx**
- 0#
- 40#
- 70#
- 100#
- 120#

**LIME Rx**
- 2500#
- 1500#
- 800#
- 0#
YIELD MONITORS
COTTON YIELD

- 49 - 680
- 680 - 1030
- 1030 - 1288
- 1288 - 1472
- 1472 - 1600
- 1600 - 1710
- 1710 - 2190
Cotton Price: $0.55 / lb
Rent: 20% Crop Share
Direct & Indirect Expenses: $566
SOIL ELECTRICAL CONDUCTIVITY MAPPING

HAS LONG BEEN USED TO MEASURE THE PHYSICAL AND CHEMICAL PROPERTIES OF SOILS
COTTON YIELD

- Low
- High

DEEP EC

- Low
- High
- LOW YIELD
SOIL ELECTRICAL CONDUCTIVITY MAPPING

Uses

- Interpretation of Yield Maps
- Create Sampling Zones
- Variable Rate Seeding, Nitrogen, Nutrients
- Site-Specific Nematode Management
- Design and evaluate on-farm trials
VARIABLE – RATE SEEDING

- Tractor planting seedlings
- Soil texture
- Close-up of seedling
- Field of mature plants
A bag of high-tech cotton seed, including technology fees and seed treatments, can cost as much as $550.

- Planting 4 seed per foot of row would cost $121 / acre.
- Planting 3 seed per foot of row would cost $90 / acre.
A producer growing 3000 acres of cotton with 1000 acres suitable for reduced seeding rates could save $20 - $30,000.
VARIABLE – RATE SEEDING

Avg. 31,000 Seed/Ac
Savings: $35/Ac

SEED Rx
- 28000
- 29000
- 30000
- 33000
- 36000
VARIABLE – RATE NITROGEN
VRA - 95# NITROGEN FIELD 18 HEAVY SOIL
SITE – SPECIFIC NEMATODE MANAGEMENT
HIGH-END NEMATICIDE RESPONSE

TELONE II

CHECK

TELONE II

CHECK
NDVI

- Red: Low
- Green: High

TELONE PLOTS

CEMETERY NORTH FIELD
TENSAS PARISH, LA
07/12/2004
REMOTE SENSING

➢ AERIAL IMAGERY
InTime, Inc.

Prescription Farming Through Remote Sensing

Cleveland, MS

Toll Free: (866)843-0235

www.gointime.com
AERIAL IMAGERY

7 Class Scout Map
Generate a Prescription

Date: Wed, Oct 22, 2003 - 9:35 AM
Logged in as: kgopin
Access Level: MANAGER
Farm: Demonstration Farm

Field: field_03
Image Date: 2003-07-11
No. of Classes: 7

Enter Rates:

- Class 1: 10
- Class 2: 10
- Class 3: 10
- Class 4: 15
- Class 5: 15
- Class 6: 20
- Class 7: 20

Choose a Chemical: Dropp

SEND REQUEST NOW

OR

CONTINUE to Cost Calculator
AERIAL IMAGERY

- Plant Growth Regulator Application
- Defoliant Application
AERIAL IMAGERY

- Plant Growth Regulator Application
- Defoliant Application
LAWRENCEBURG, TENNESSEE CORNFIELD
THE OWNER DREW THE PICTURE ON HIS COMPUTER, DOWNLOADED IT TO HIS GPS, THEN FOLLOWED THE GPS ON HIS BUSH HOG.
THANK YOU

ARE THERE ANY QUESTIONS?
WHAT IS COTTON?
Tensas Parish
Panola Planting Co.
6 row applicator
Cotton Price: $0.55 / lb
Rent: 20% Crop Share
Direct & Indirect Expenses: $566