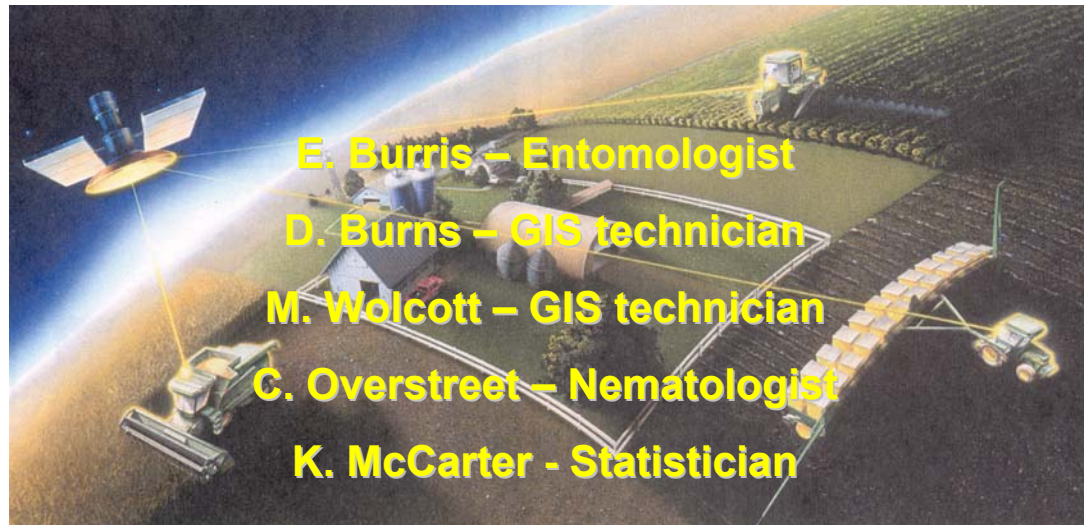


Evaluating Avicta Complete Pac Plus Telone II and Low - High Nitrogen Rates



Presentation focal points

- **Focus on thrips, disease and nematode complexes**
- **Present small plot and on-farm test results analyzed using GIS technique**
- **Test Products =**
 - **Avicta Complete Pac, Telone II fumigation, and nitrogen treatments applied sidedress as 30-0-0-2**

GIS tools for managing data

- GIS Programs
 - SSTool Box
 - ArcGis9
 - GeoDa™
 - Farm Works
 - Apex
 - USDA-ARS
 - Yield monitor data cleaner
 - X-tension/Erdas

GPS Tools

- Technology
 - Omni Star
 - RTK
 - Veris cart
 - StarFire
 - GS2
 - Original Greenstar
 - Yield monitor

Test 1

Small plot^a: *Geo-referenced field data*; LSU AgCenter, Northeast Research Station

- 1. Telone + Avicta + 24 GPA, 30-0-0-2**
- 2. Avicta + 37.2 GPA, 30-0-0-2**
- 3. Non-treated + 37.2, GPA, 30-0-0-2**

^aRCB 3 treatments, 32 row plots, using 32 GPS points as replicates

Test 1: Variables

- Stand
- Root-knot Nematode
- Thrips
- Node of 1st square
- NDVI
- Yield
- Economic analysis for Nitrogen mgt. strategy

Statistical Analysis

- Conventional ANOVA
- IDW – ArcGIS 9.1
- Weighted Matrix – GeoDa 0.9
- Histogram – ArcGis 9.1 and GeoDa 0.9
- OLS Regression analysis – GeoDa 0.9

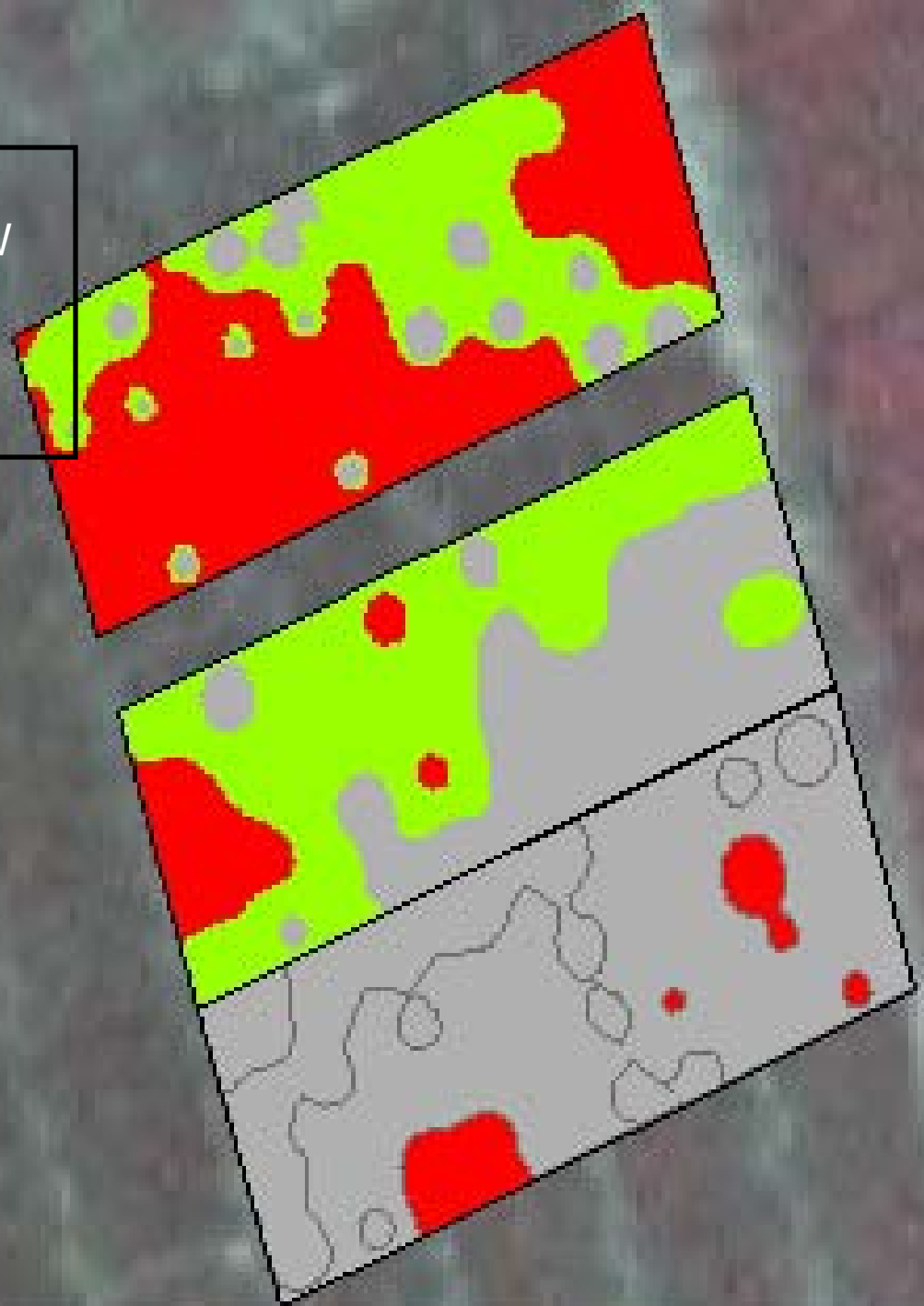
TEST 1:

Treatment	Stand	Root-Knot	1st sq.	NDVI
Telone + Avicta + 24 GPA 30-0-0-2	69.2a	141.8b	6.0b	0.55a
Avicta + 37.2 GPA 30-0-0-2	61.3b	320.6b	6.6a	0.41a
Non-treated + 37.2 GPA 30-0-0-2	40.1c	816.8a	6.4a	0.37b
<i>P>F</i>	0.00001	0.0006	0.0013	0.0001

- Stand/25 ft. – 29 May, 2007
- RK – 11 June, 2007, 2007
- Sq./nodes – 15 June, 2007
- Greenseeker NDVI 15 June, 2007

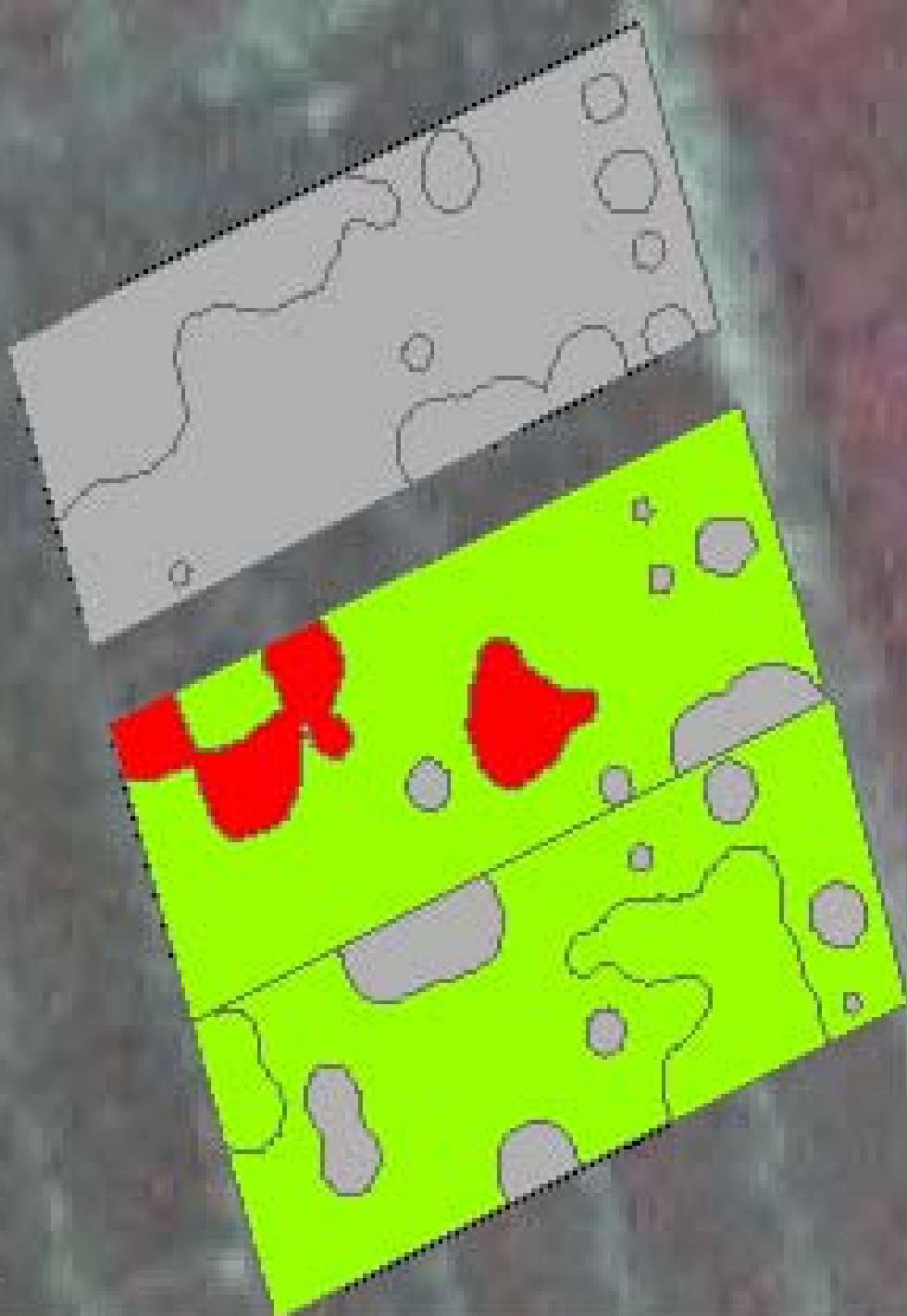
Identity of nematode hotspots using a interpolated surface; IDW GeoSpatial analysis feature of ArcGis 9.1

Nematode Counts



Identity of Thrips Hot-spots
using a interpolated
surface; IDW GeoSpatial
analysis feature in ArcGis
9.1

Thrips - Immature

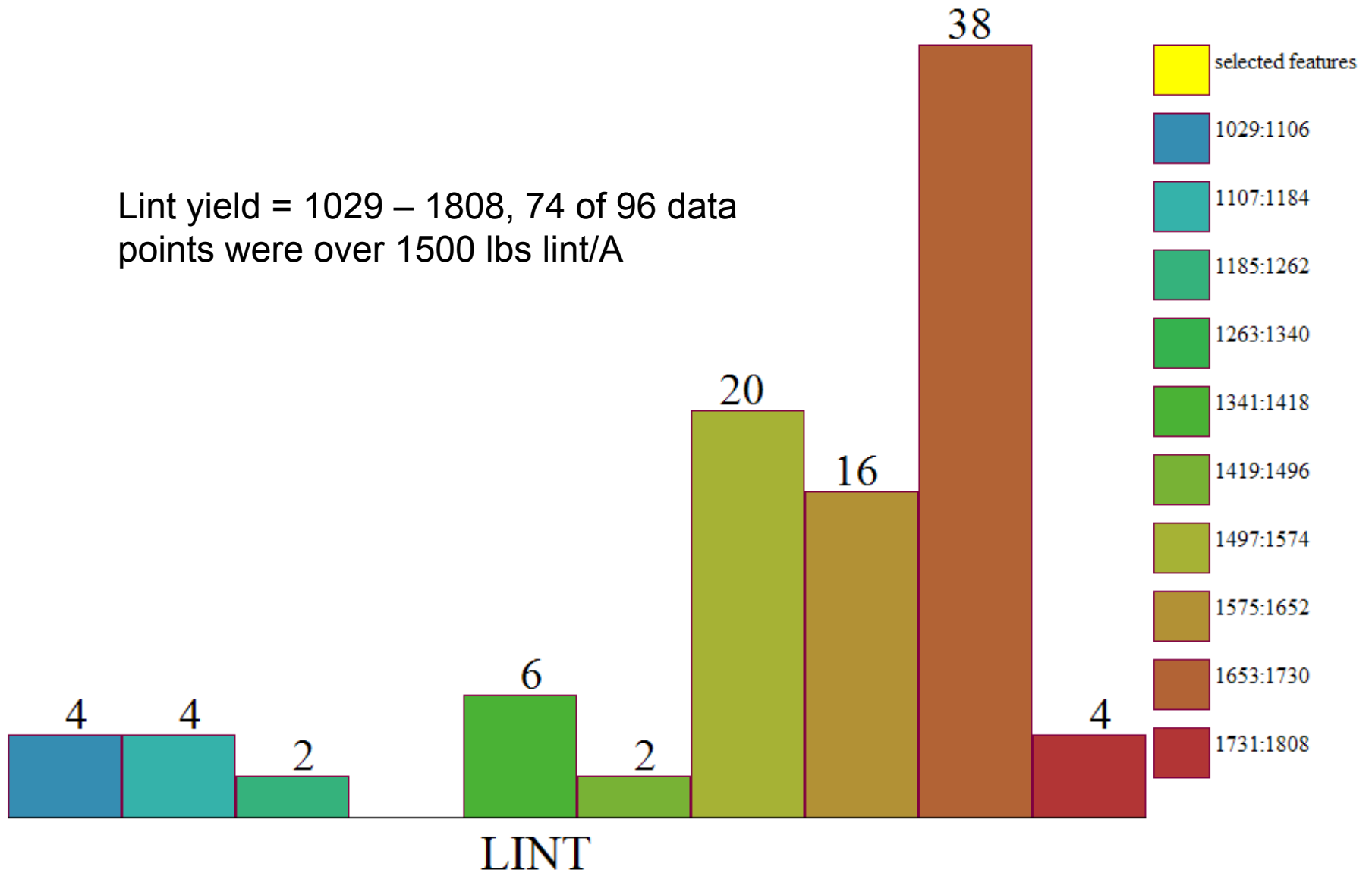


Treatment	Lint Yield	Net Income	RMS	S.D.
Telone + Avicta + 24 GPA 30-0-0-2	1652	\$77	61.3	63.7
Avicta + 37.2 GPA 30-0-0-2	1671	\$100	56.6	64.0
Non-treated + 37.2 GPA 30-0-0-2	1370	-\$22	215.6	195.93

Planted 23 April
 Root Mean Square (RMS)
 Standard Deviation (S.D.)

Test 1 - Histogram of Lint Yield – Small Plot test, 2007

Lint yield = 1029 – 1808, 74 of 96 data points were over 1500 lbs lint/A



Test 2, 2007-Helena Plantation

- **Main Plots**

- **Telone II @ 3 g/A + Avicta Complete Pac**
- **Avicta Complete Pac**

- **Subplots**

- **24, 35.2, 41.8 GPA 30-0-0-2 applied sidedress**

➤ **Treatments were randomized strips X 24 Rows, 3 reps**

Helena Plantation – 3 year Rotation History and Tests

- 2005 – **Cotton 105 A** – Sitespecific N mgt. test, analyzed using mixed model technique, Burris/Milliken/Willers etal.
- 2006 – **Corn 105 A** – sampled for root-knot nematode
- 2007 - **Cotton 33A** - split plot, to evaluate seed treatments (Avicta Complete Pac), fumigation (Telone II) and Nitrogen rates (low – Med.- High)

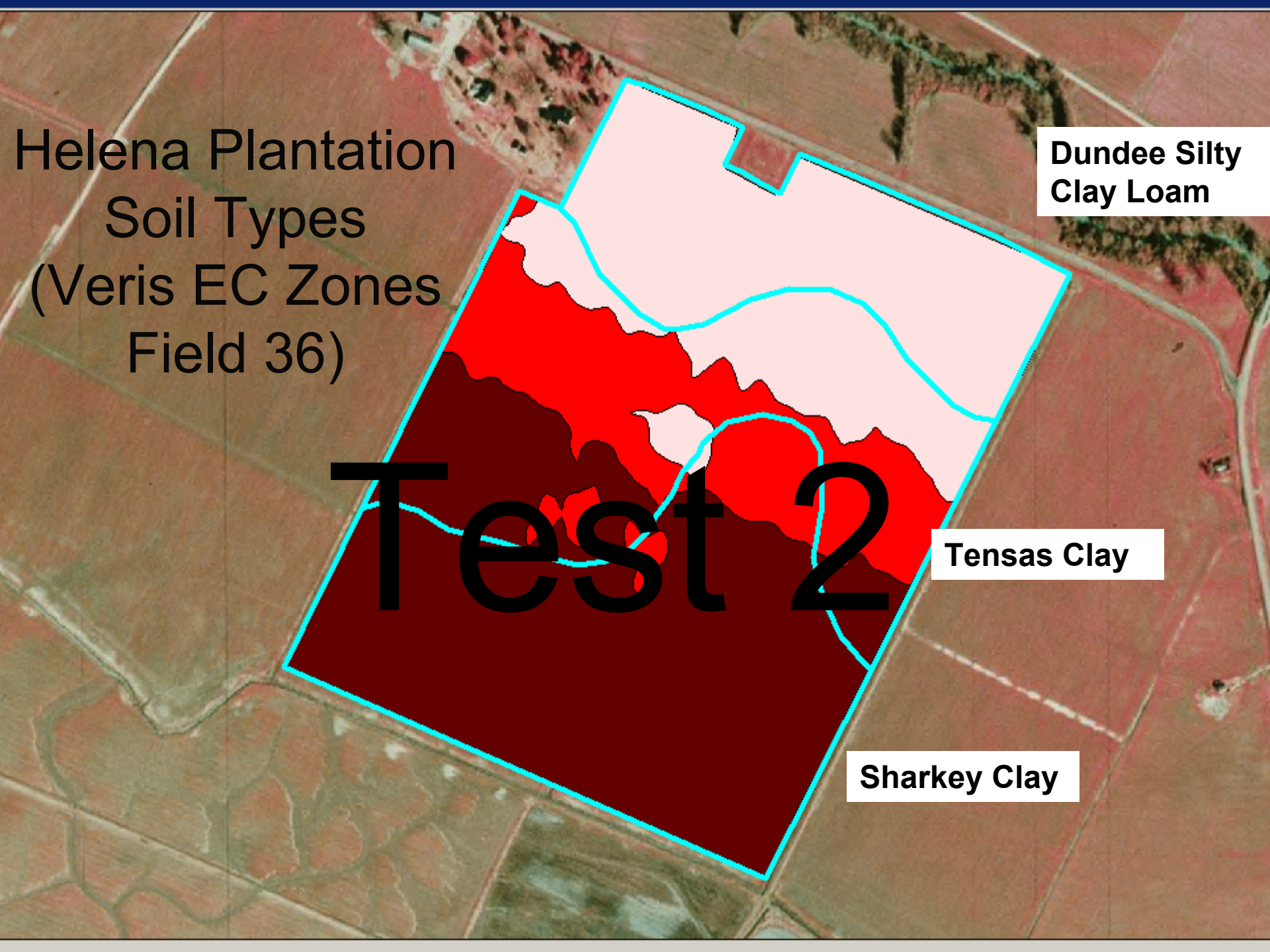
Helena Plantation
Soil Types
(Veris EC Zones
Field 36)

Dundee Silty
Clay Loam

Tensas Clay

Sharkey Clay

Test 2



Helena Plantation NDVI 2007

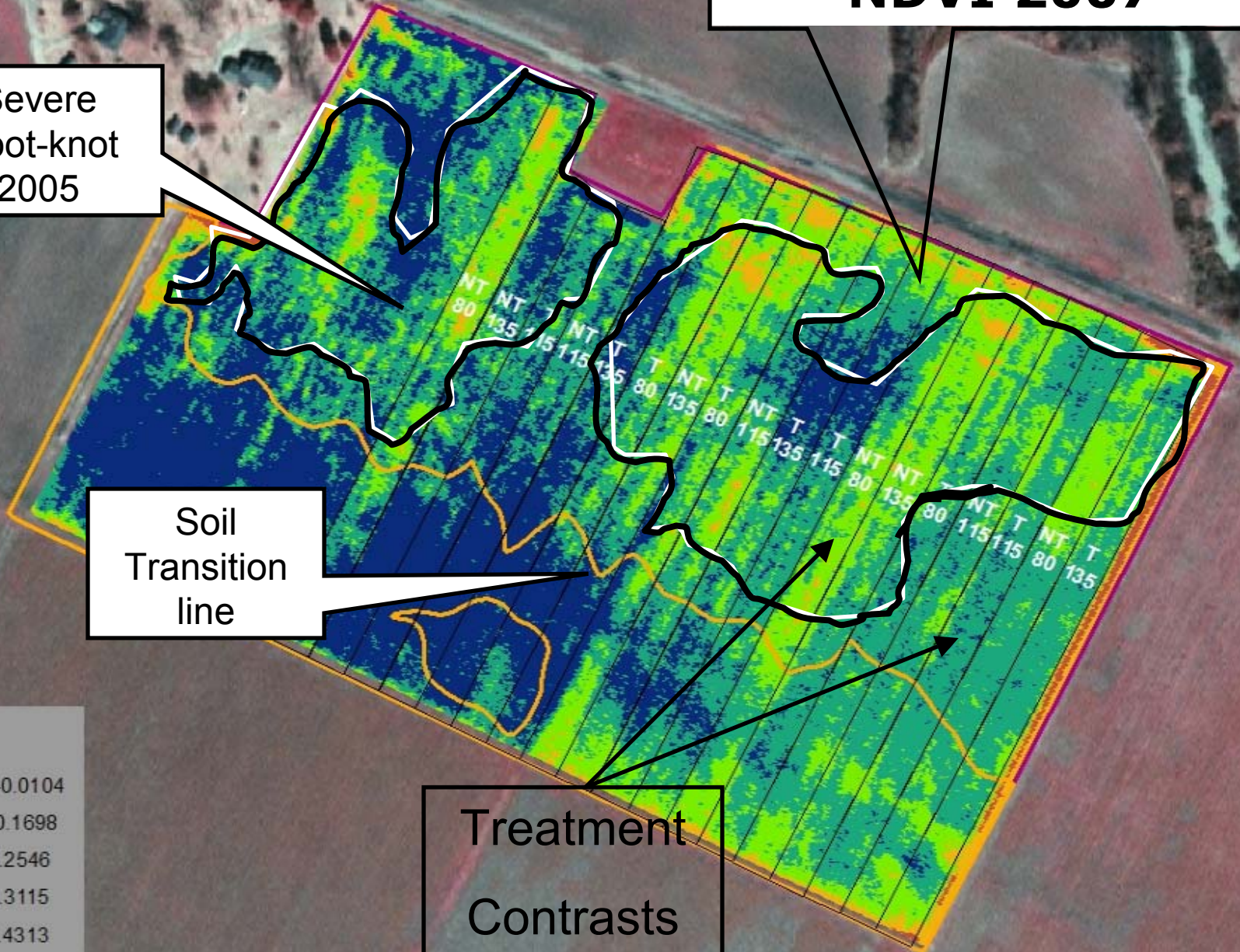
Severe
Root-knot
2005

Soil
Transition
line

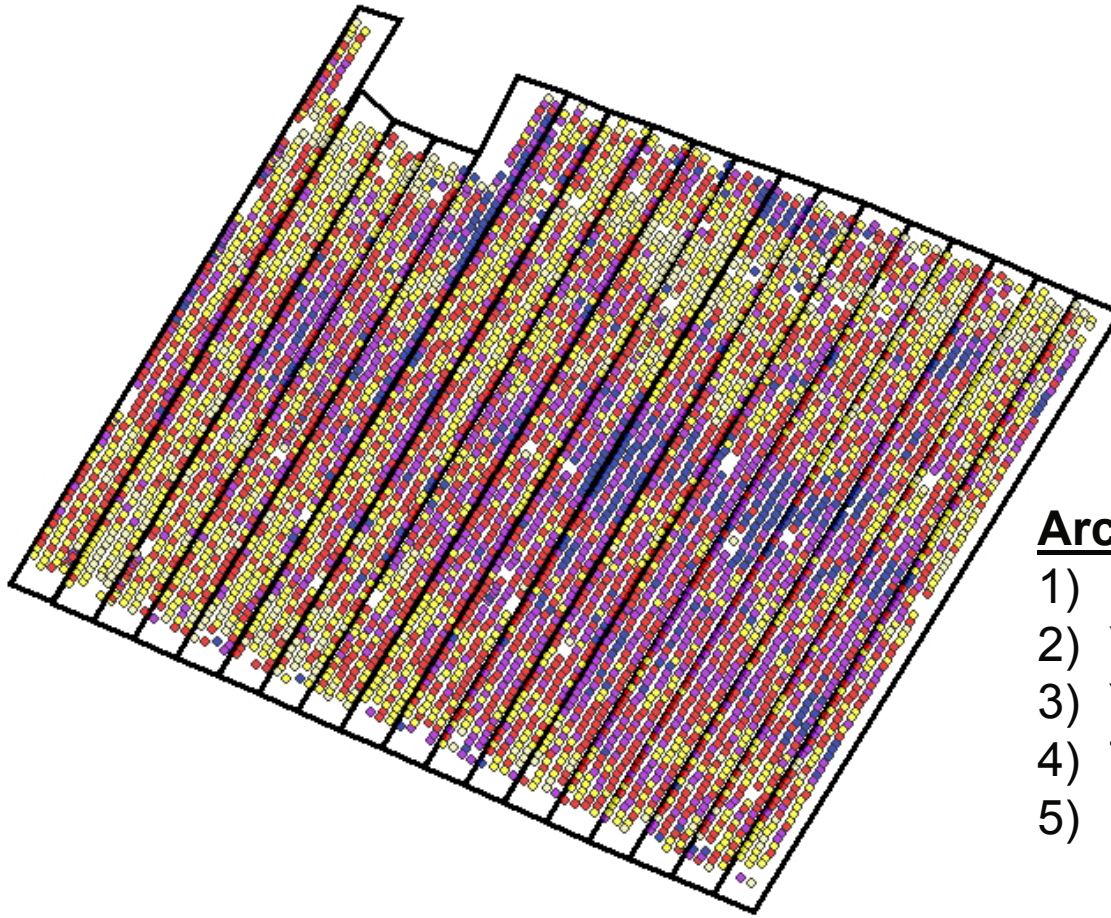
Treatment
Contrasts

NDVI

- 0.3212 - -0.0104
- 0.0103 - 0.1698
- 0.1699 - 0.2546
- 0.2547 - 0.3115
- 0.3116 - 0.4313



Helena Ptn., 33A Clean Yield Points with plots 2007

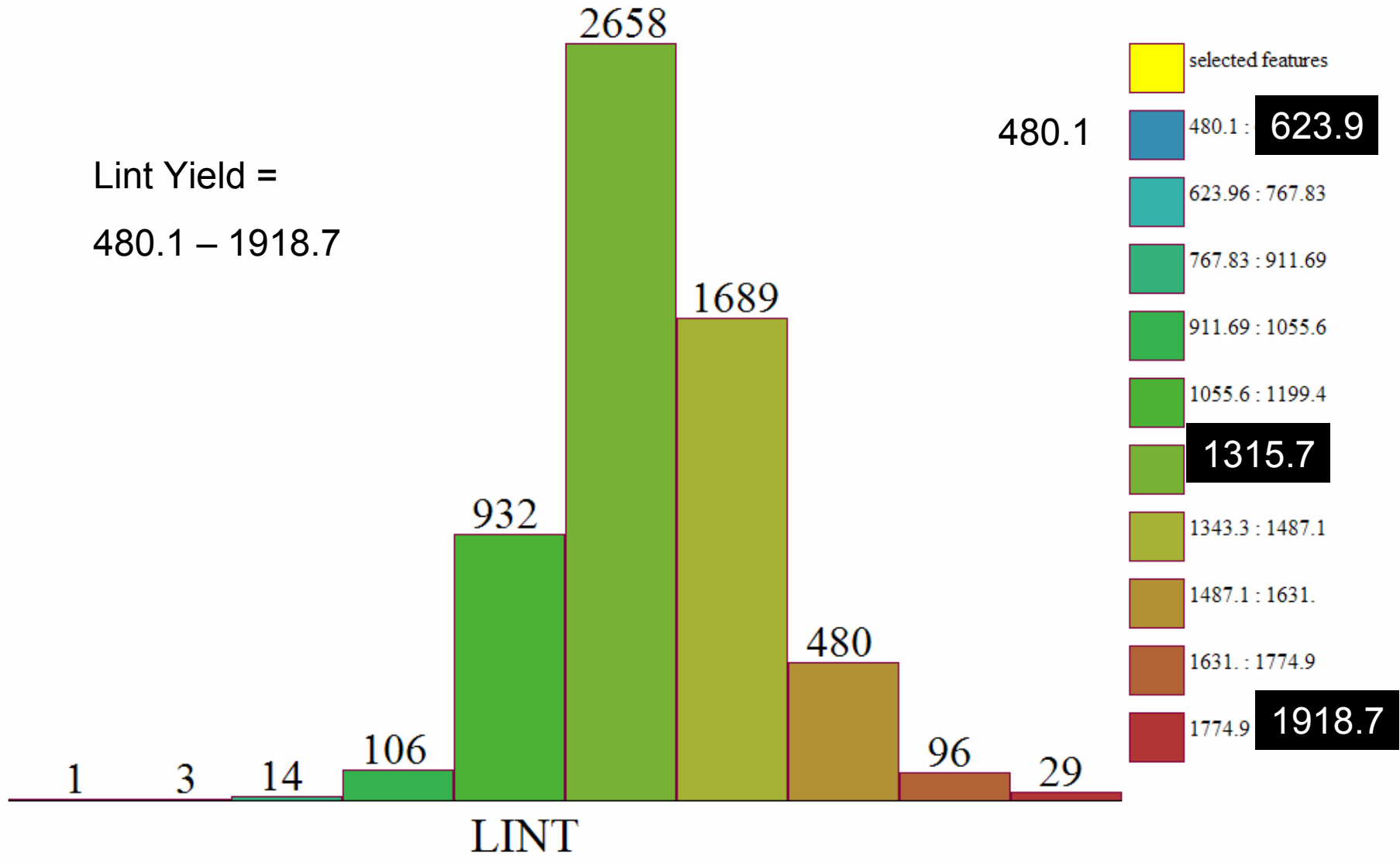


ArcGis 9/GeoDa analysis

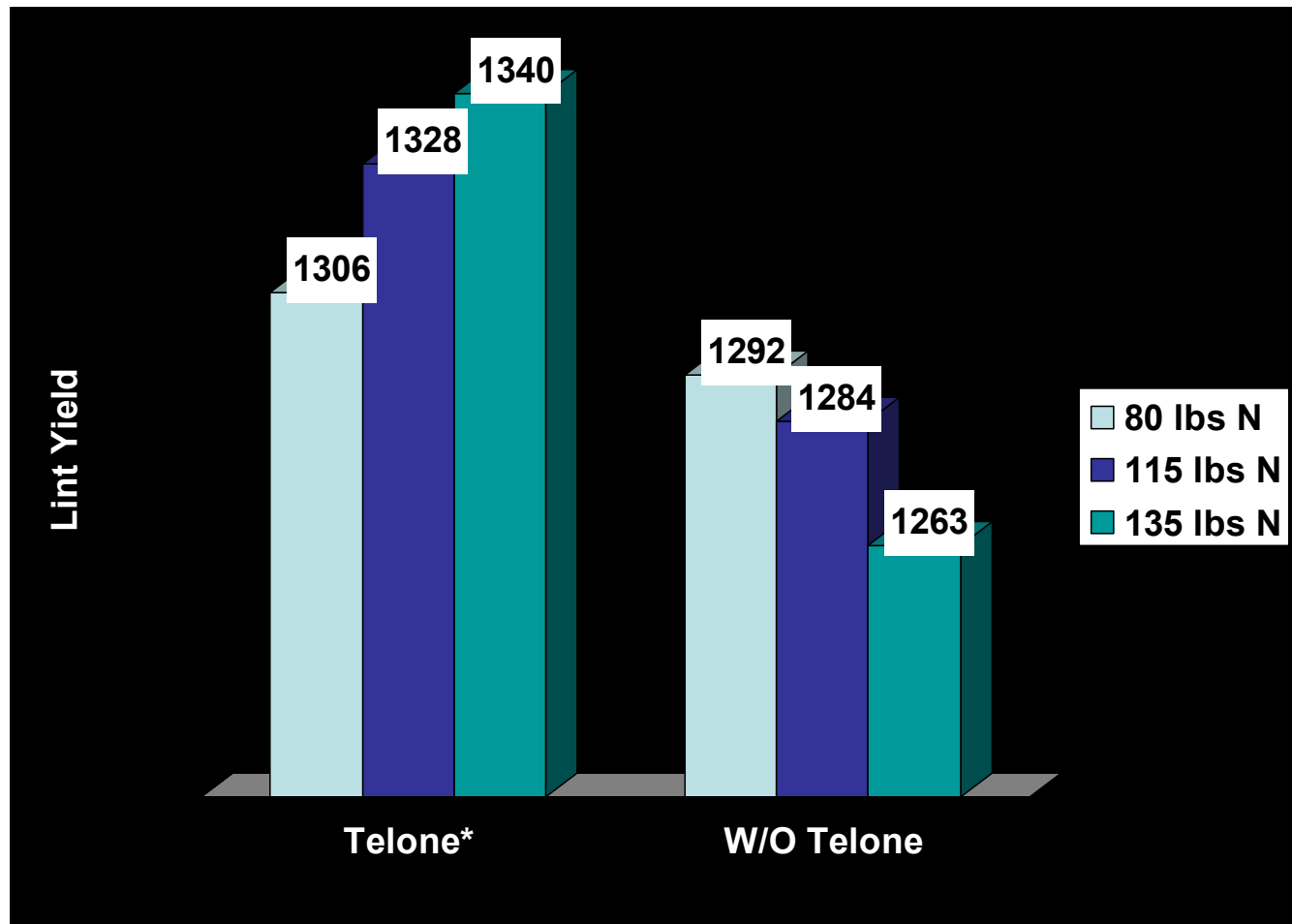
- 1) Moran's I = 0.05
- 2) Yield Range = 480.1 – 1918.7
- 3) Yield mean = 1315.7
- 4) Temperature = highly significant
- 5) Nitrogen strategy = NS

Histogram of Lint Yield - Helena test, 2007

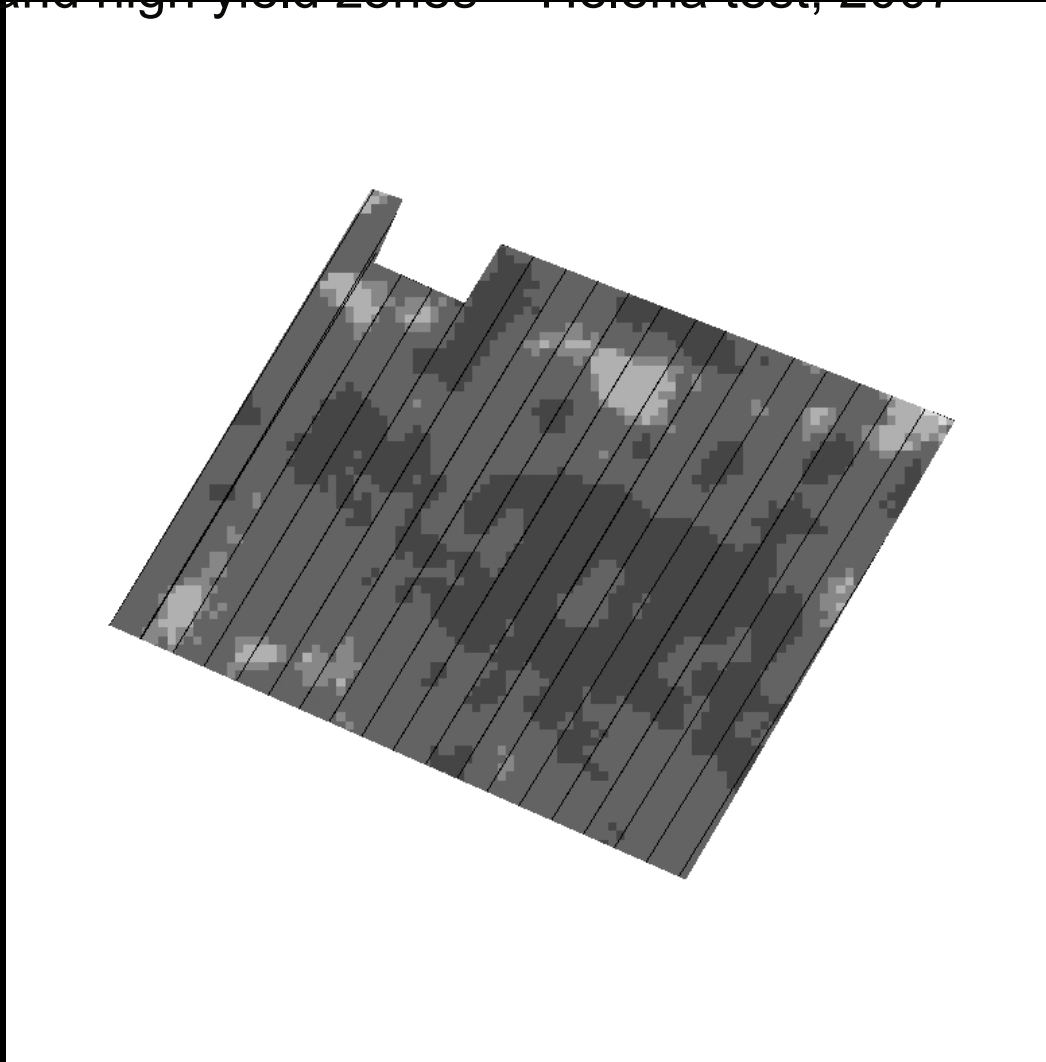
Lint Yield =
480.1 – 1918.7



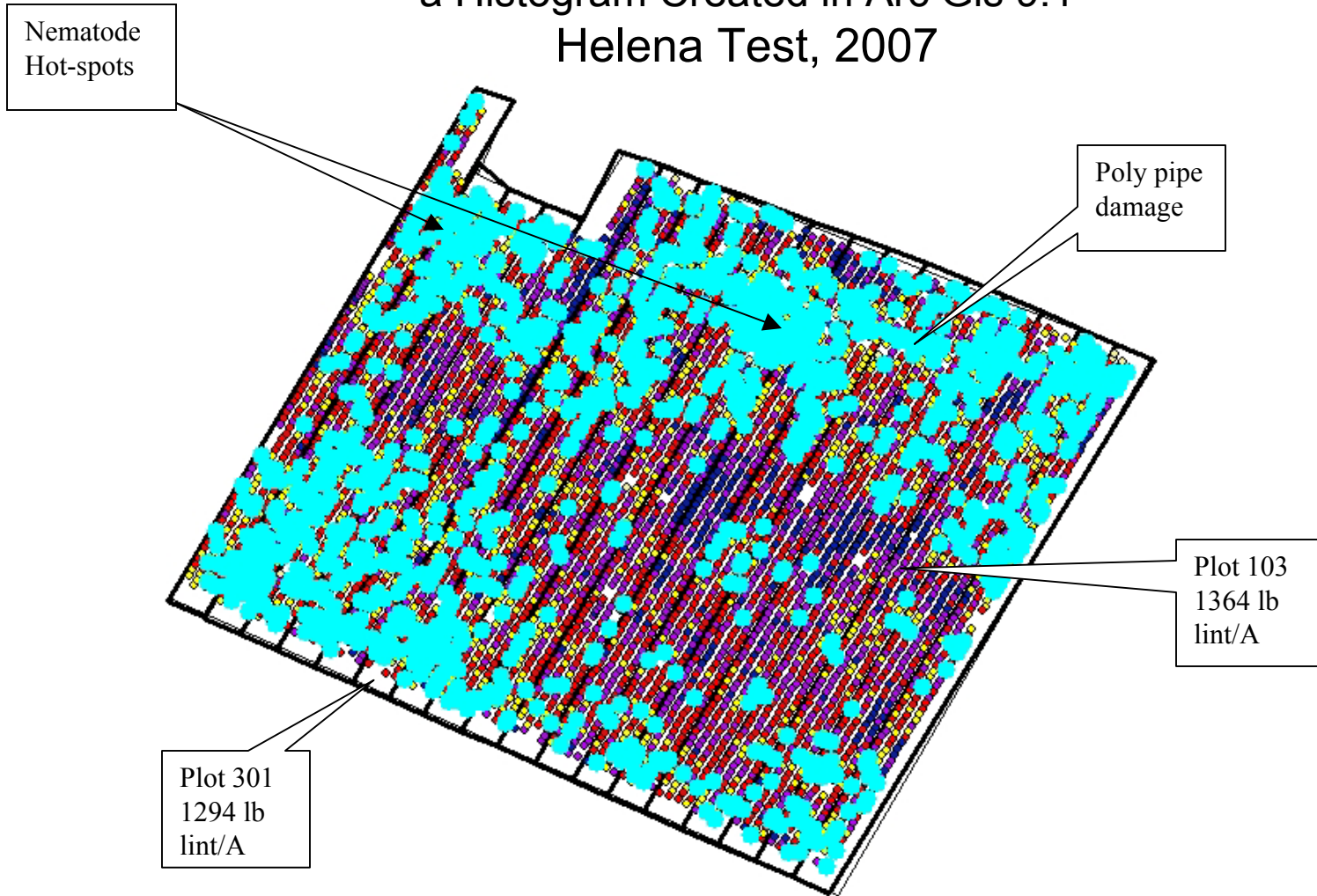
Lint Yield Average Helena Test 2007



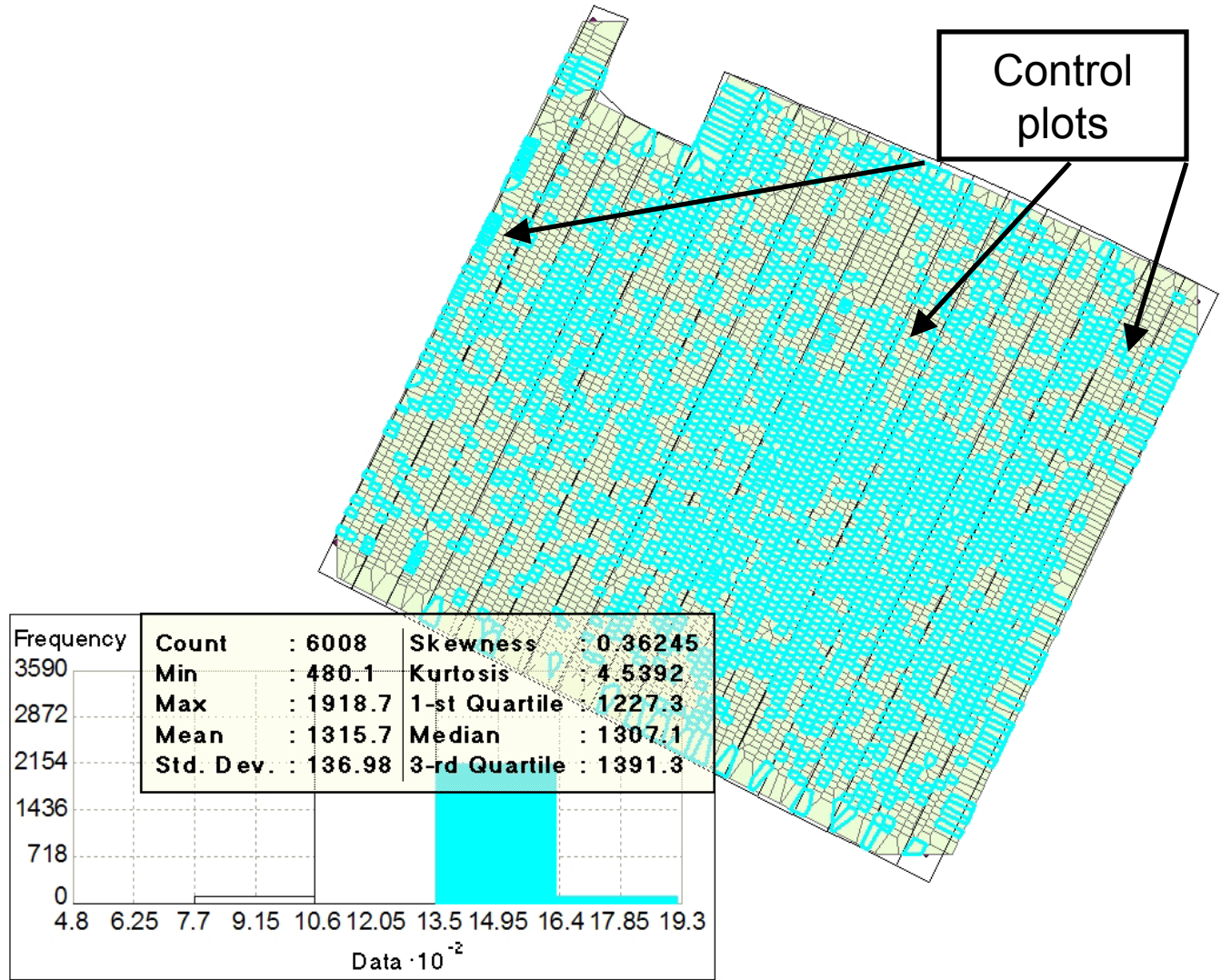
Test Field Surface/With Plots and Areas Of Interest – Gray scale conversion in ArcGis 9.1 shows low ECa, nematode hot-spots, poor drainage and high yield zones – Helena test, 2007



Isolation of Low Lint Yield Points Using a Histogram Created in Arc Gis 9.1 Helena Test, 2007



Analysis of High Lint Yield (> 1300 lb lint/A) across all plots Helena Test, 2007



Lint Yield in a Low ECa Zone
Helena Test, 2007

