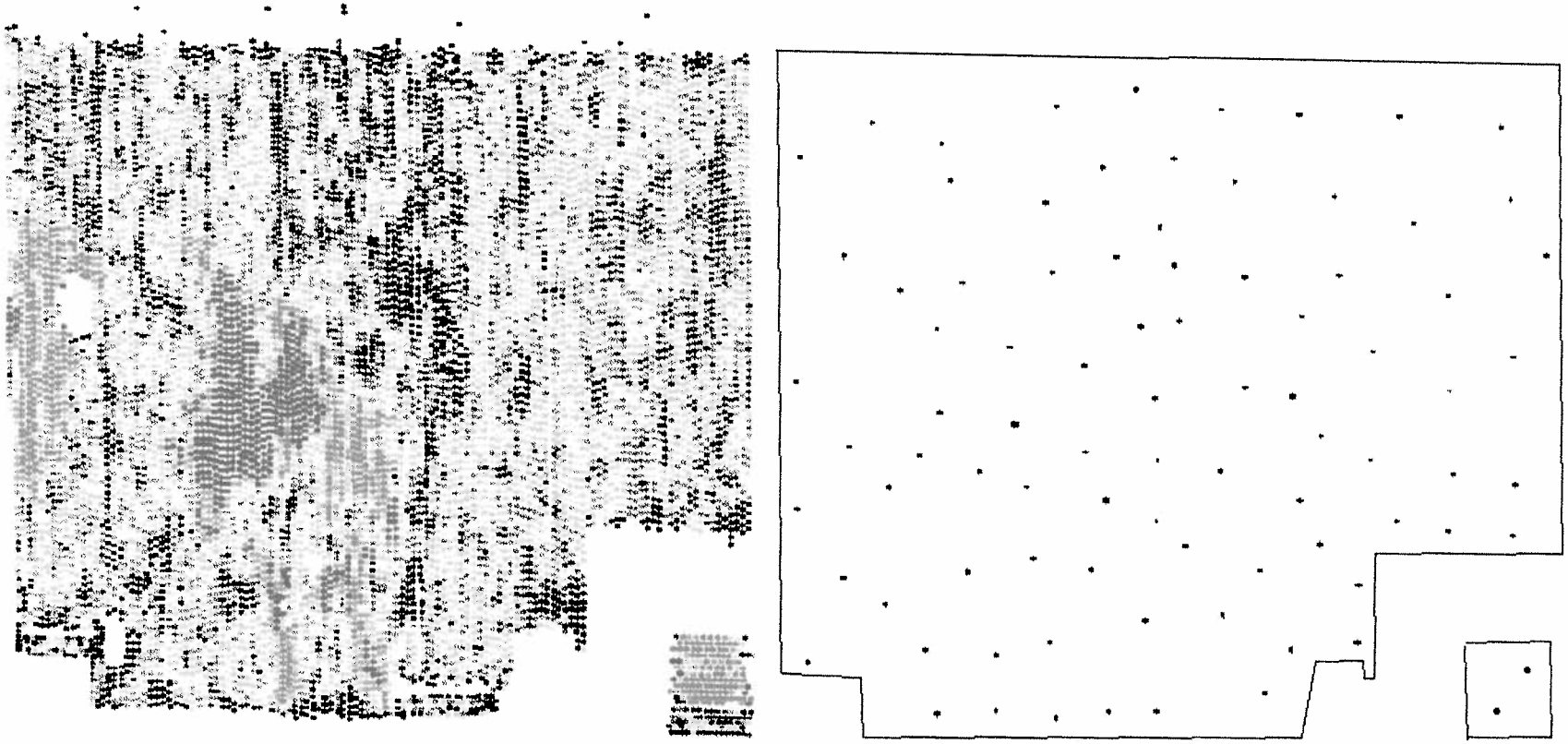
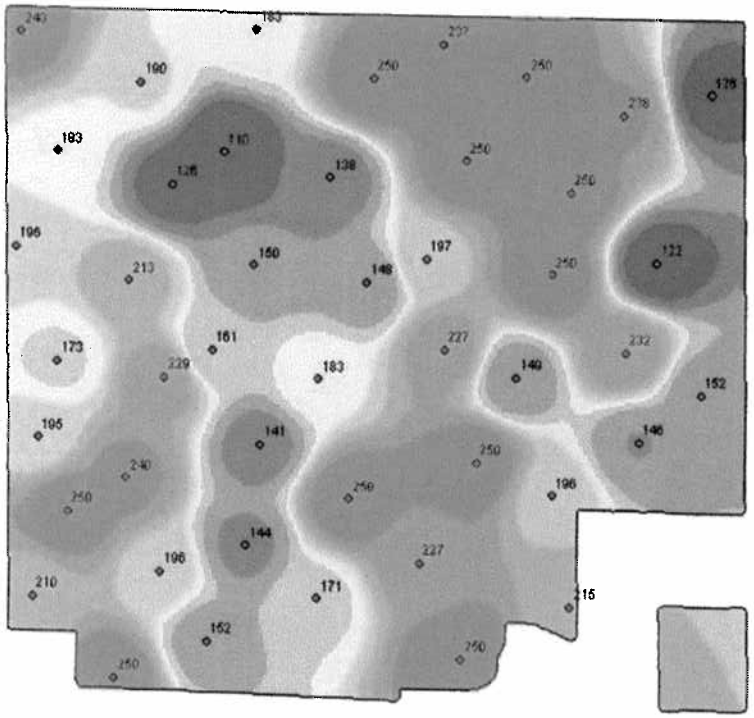


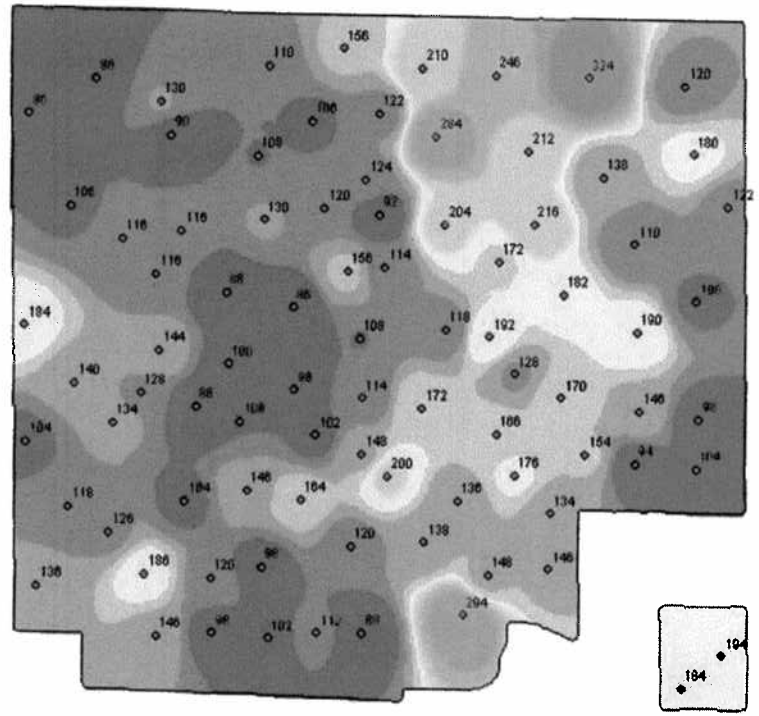
Geo-referenced Soil Sample Points
Points picked from a yield monitor map

points picked from;
High yielding areas
Average yielding areas
Low yielding areas



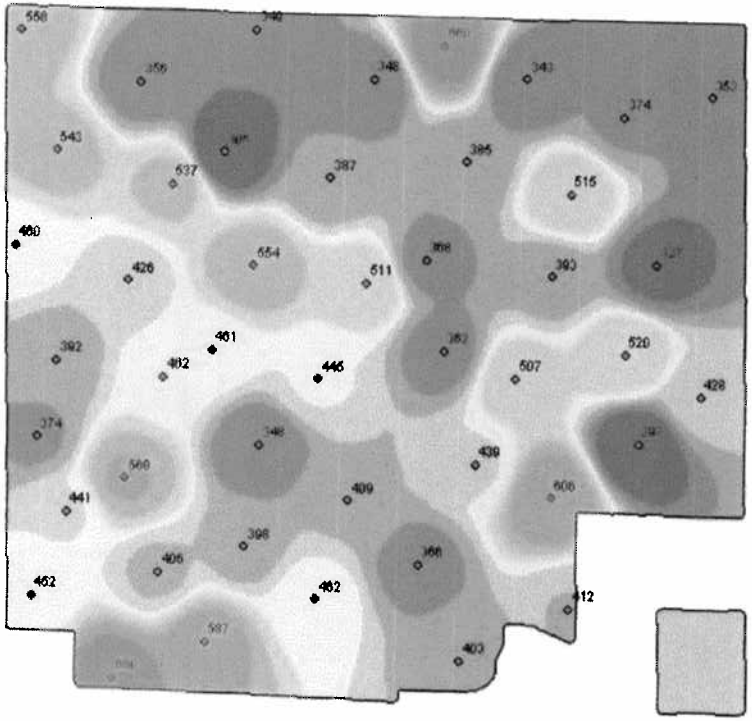
1998 soil test Phophorus

min. 110
max. 250
Avg. 194



2005 soil test Phosphorus

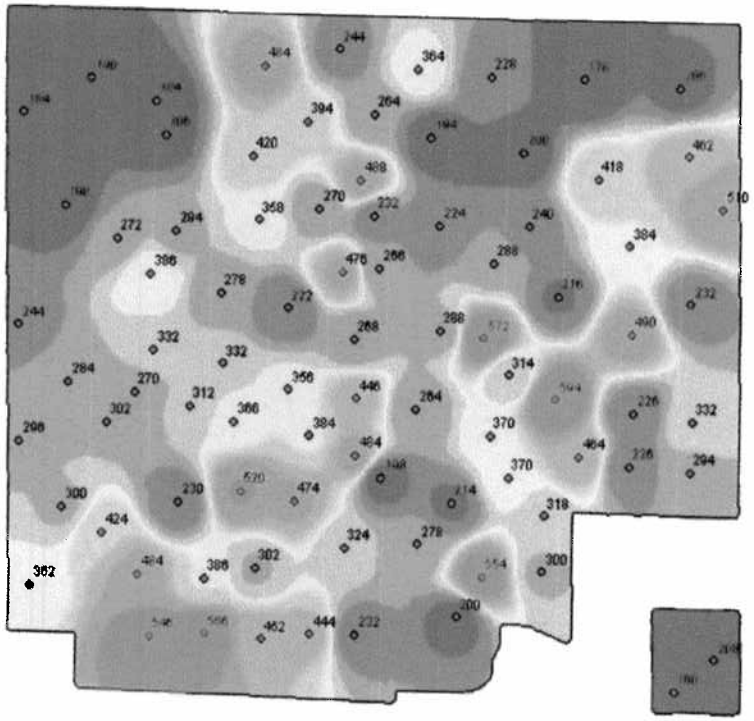
min. 86
max. 324
Avg. 143



1998 soil test Potassium

min. 297
max. 660

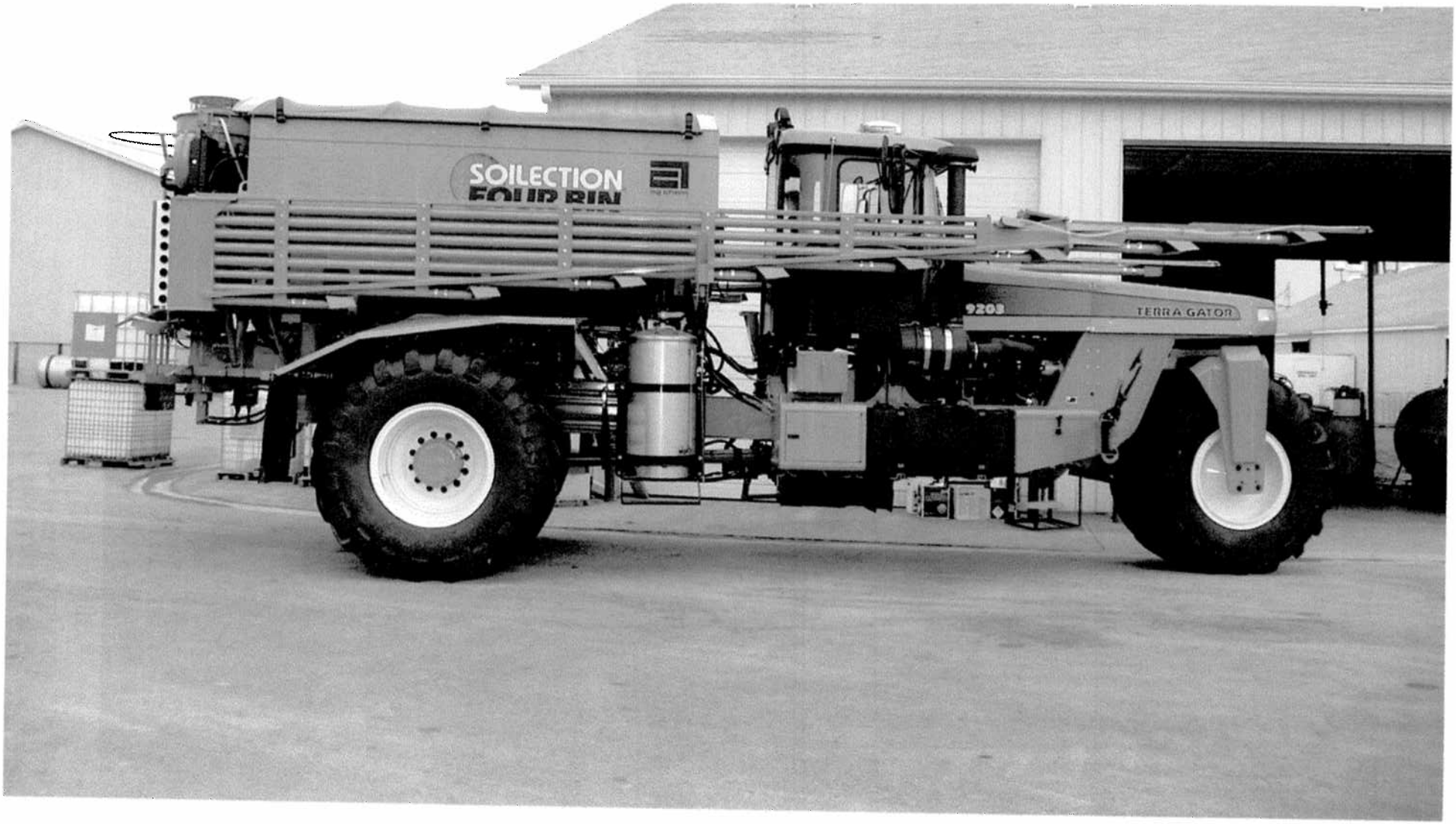
Avg. 433



2005 soil test Potassium

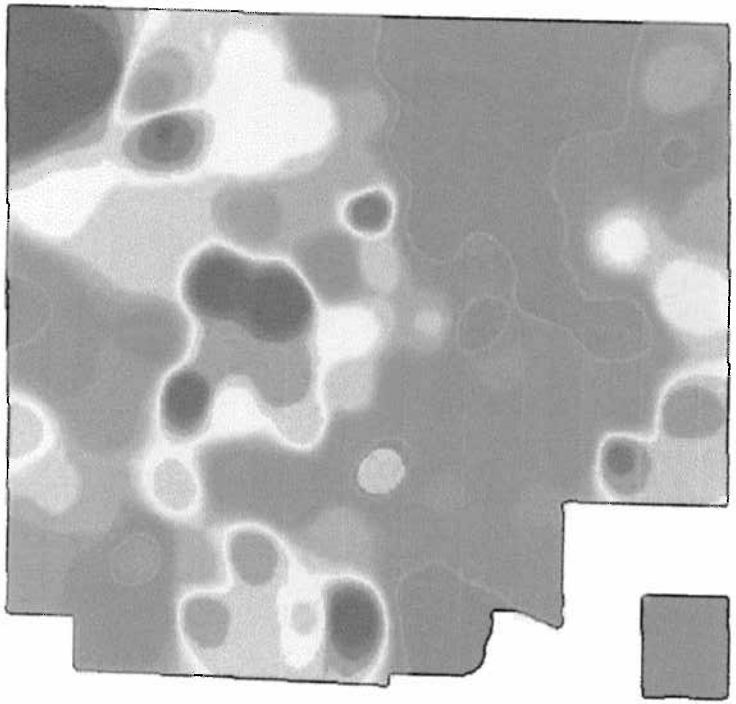
min. 160
max. 594

Avg. 319


SOILECTION
9203
TERRA GATOR

Phosphorus Fertilizer Application

11-52-0



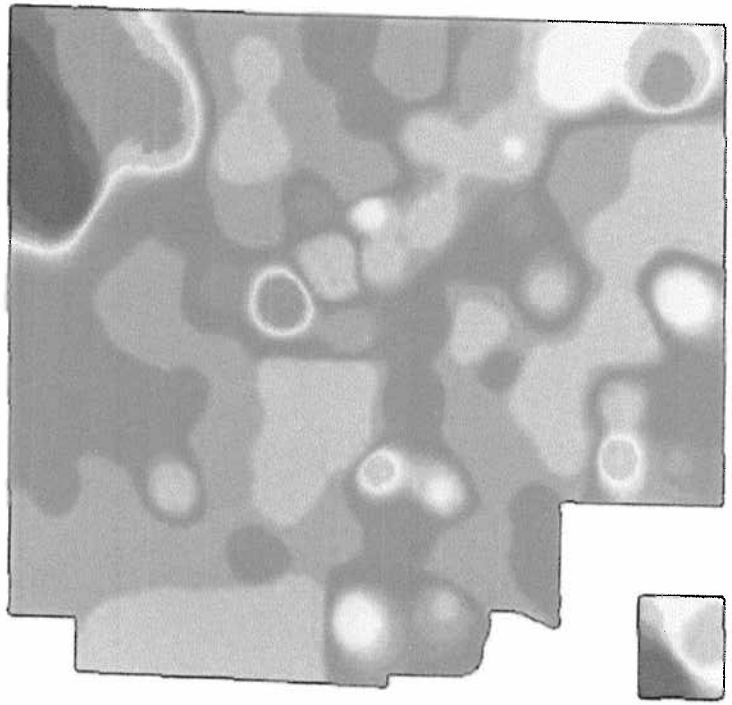
min.	**0**
max.	**77**
Avg.	**45**

lb/ac	ac
0	21
28 - 33	29.91
33 - 39	10.67
39 - 44	11.53
44 - 50	11.95
50 - 55	12.02
55 - 60	7.96
60 - 66	5.92
66 - 71	2.87
71 - 77	5.44
Field Boundary	

*normal "flat rate" application would average 95 lbs/acre

Potassium Fertilizer Application

0-0-62

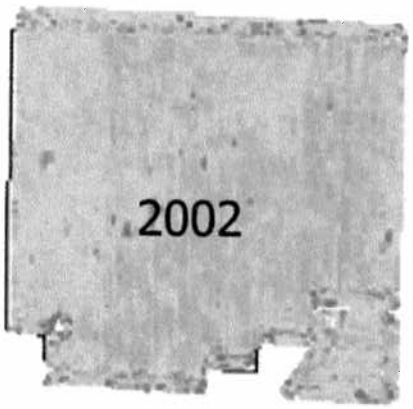


min.	**48**
max.	**296**
Avg.	**123**

lb/ac	ac
48 - 76	29.3
76 - 103	6.12
103 - 131	35.14
131 - 158	29.73
158 - 186	5.95
186 - 213	3.17
213 - 241	4.98
241 - 268	1.48
268 - 296	3.16
Field Boundary	

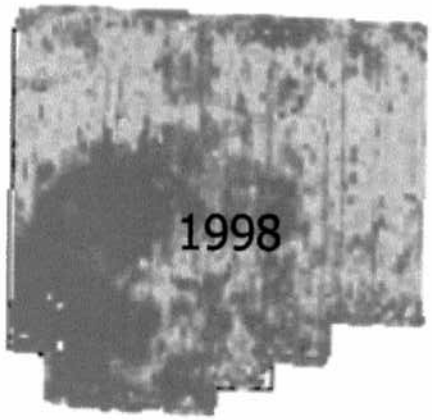
*normal "flat rate" application would average 250 lbs/acre

Normalized Yield Difference Map



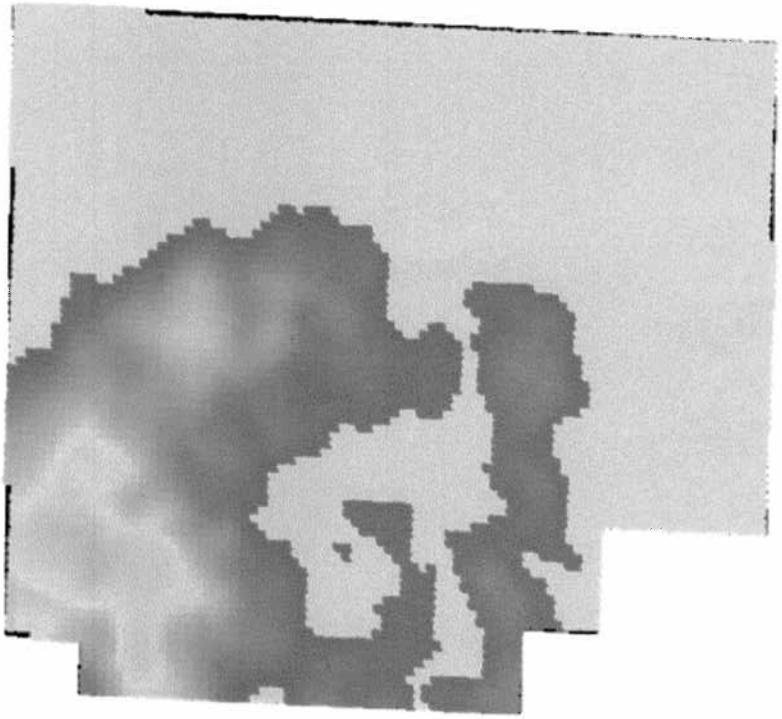
163 bu/a = 100%

-



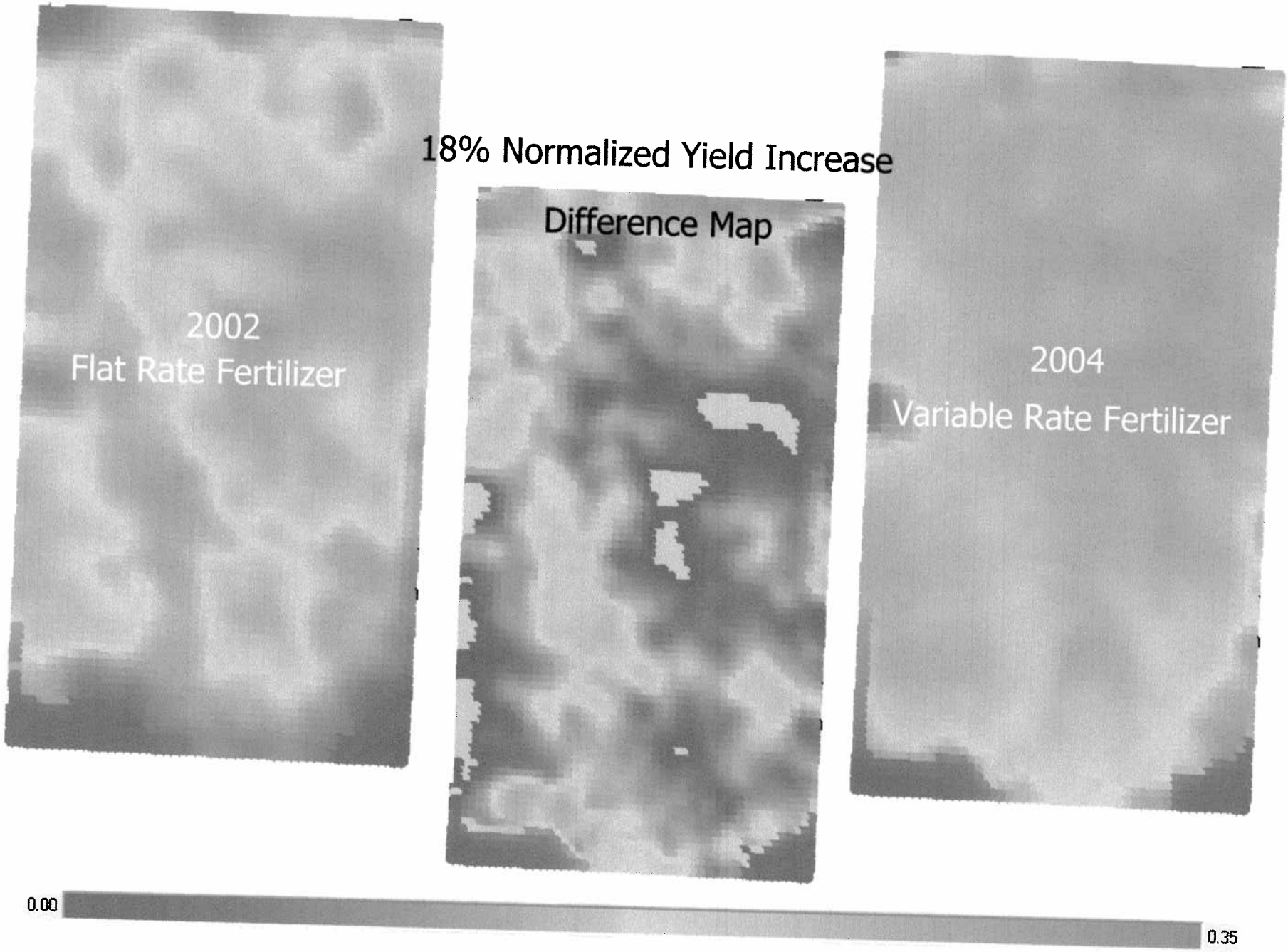
118 bu/a = 100%

=



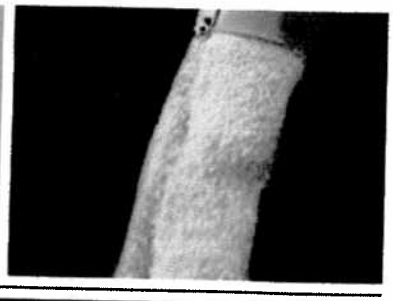
- Significant gains in "Green-Yellow" areas
  - 20%-50% Increase
- Incremental gains in "Red" areas
  - 10%-20% Increase
- Very little to no change in "Grey" areas

22.6% Average
NORMAL Yield Increase


18% Normalized Yield Increase
2002
Flat Rate Fertilizer
Difference Map
2004
Variable Rate Fertilizer
0.00
0.35

Agrium

How the Technology Works



ESN **Controlled Release Fertilizer**

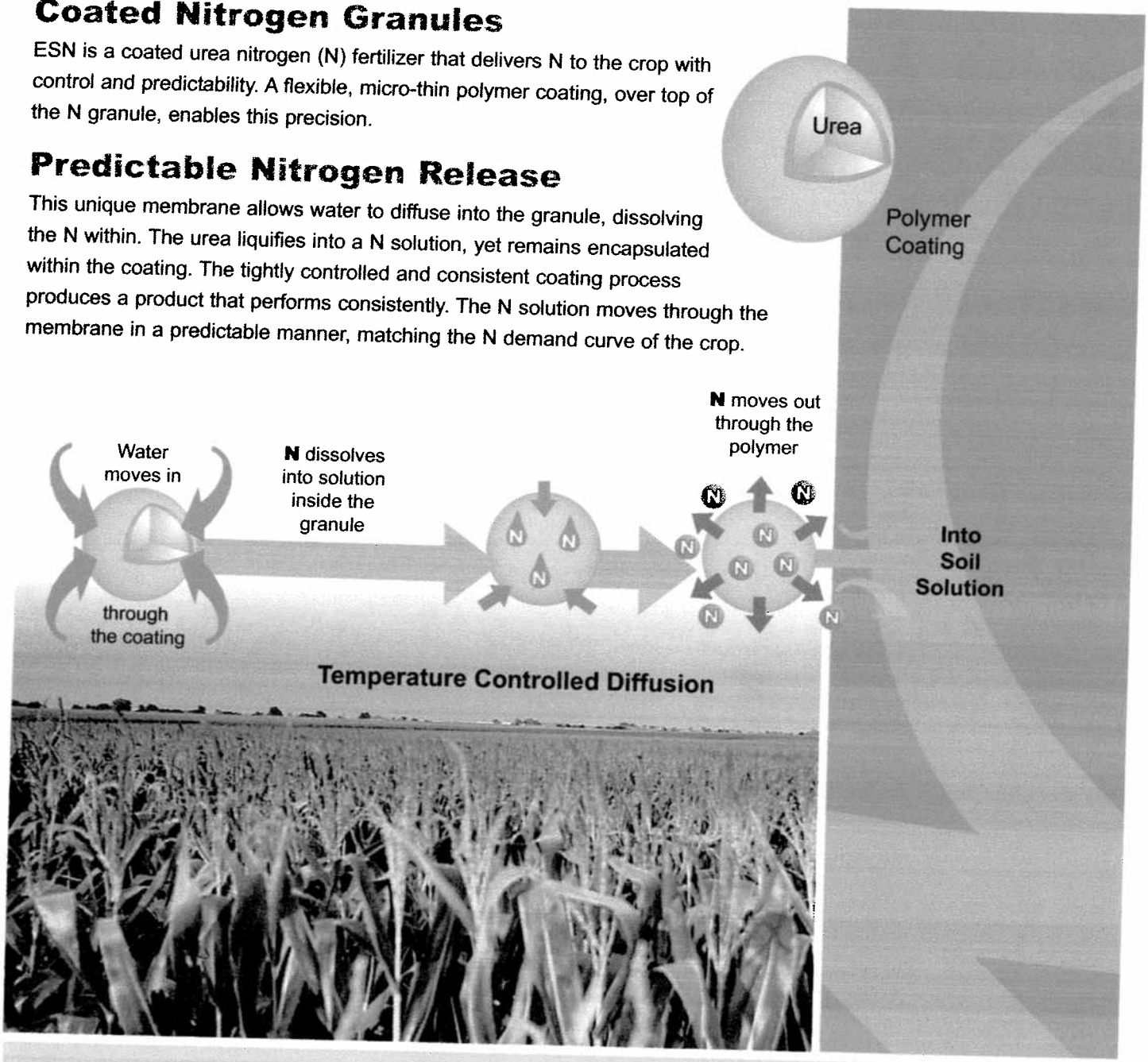
A *smarter* source of nitrogen. A *smarter* way to grow.

Coated Nitrogen Granules

ESN is a coated urea nitrogen (N) fertilizer that delivers N to the crop with control and predictability. A flexible, micro-thin polymer coating, over top of the N granule, enables this precision.

Predictable Nitrogen Release

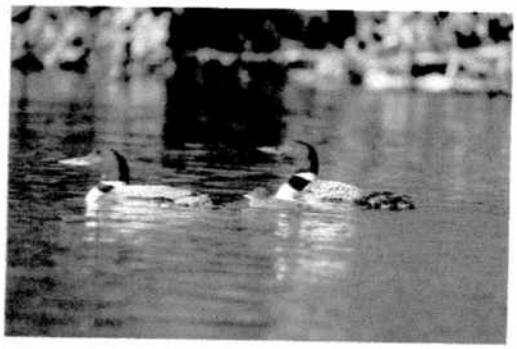
This unique membrane allows water to diffuse into the granule, dissolving the N within. The urea liquifies into a N solution, yet remains encapsulated within the coating. The tightly controlled and consistent coating process produces a product that performs consistently. The N solution moves through the membrane in a predictable manner, matching the N demand curve of the crop.



Soil Temperature

The N release rate is governed by soil temperature, which similarly determines plant growth and nutrient demand. The rate at which water moves through the coating into the granule is very slow in cold soils and increases as the soil warms. This matches the pattern of plant growth. ESN provides a steady N supply for the growing plant's N demand.

Environmental Fate of the Polymer Coating



The polymer coating degrades in a two-step process. The first step is a physical breakdown. The polymer coating loses its mechanical strength over time, much like an aging rubber band. In the second step, soil micro-organisms complete the degradation process. The final products released to the soil after the polymer breaks down are carbon dioxide, ammonia and water - all naturally occurring substances. And in fact, required substances for normal plant growth and development.

ESN
SmartNitrogen

How can we help?

To make ESN a part of your spring nitrogen program, contact an authorized retailer or Agrium representative. For technical information, our agronomists can be reached during business hours.

Agronomy Information Line
(800) 661-NPKS (6757)
USA and Canada
(877) 265-0405 USA

email: esn@agrium.com
www.agrium.com

Agrium
13131 Lake Fraser Drive SE
Calgary, Alberta T2J 7E8
(403) 225-7000
Senior Agronomist: Ray Dowbenko

Agrium U.S. Inc.
4582 S. Ulster Street Suite 1400
Denver, Colorado 80237
(303) 804-4479
Senior Agronomist: Alan Blaylock

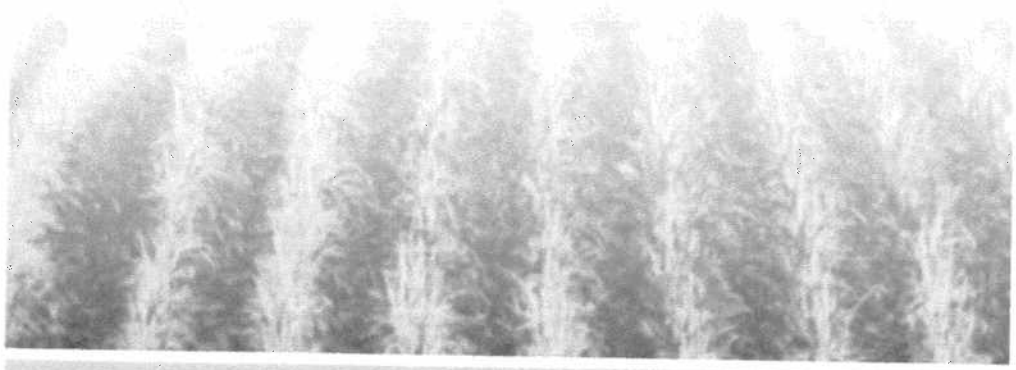
Okemos, Michigan
(517) 349-7084
Midwest Agronomist: John Kaufmann

Cedar Rapids, Iowa
(303) 588-8333
ESN Coordinator: Mark Mangin

Salem, Oregon
(503) 371-8337
ESN Coordinator: Jim Peters

Breese, Illinois
(618) 526-7728
ESN Coordinator: John Niemeyer

DeWitt, Michigan
(517) 669-5499
ESN Coordinator: B.J. Bilas



INTERLOCK®

Product Information and Research Update

FIGURE 1.
An Idaho aerial deposition study with an Air Tractor 502 showed that fungicide applications with InterLock and Preference had better overall canopy coverage than control treatments without the two adjuvants.

FIGURE 2.
Water-sensitive paper placed throughout the Idaho test field measured application coverage at low, middle and top levels of the canopy.

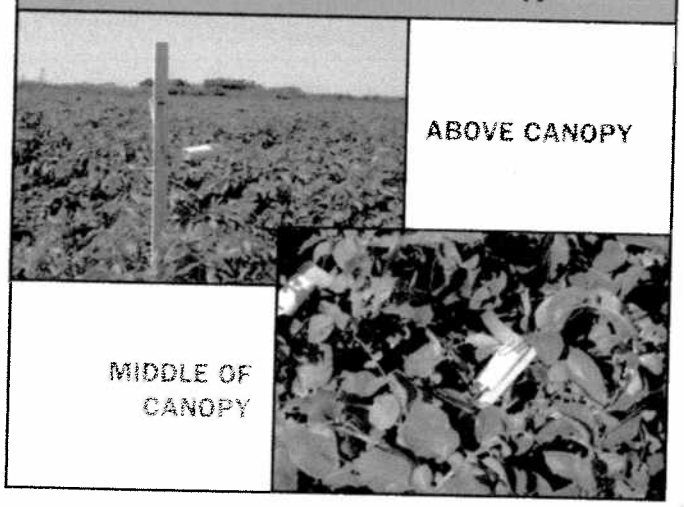


FIGURE 3.
InterLock plus Preference treatment coverage.

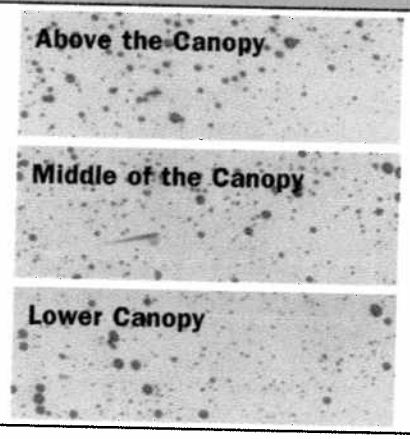
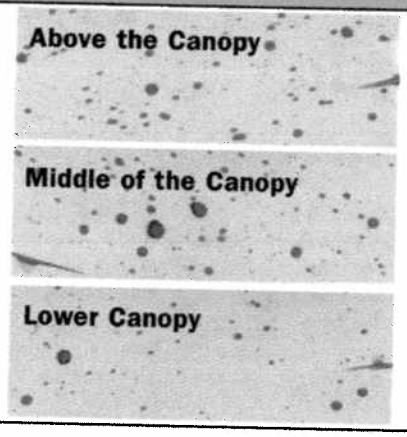


FIGURE 4.
Control treatment coverage.



Figures 3 and 4 show water-sensitive paper from an InterLock and Preference treatment and from the control treatment in a canopy deposition test. InterLock and Preference significantly improved spray coverage in the plant canopy.

AGRILIANCE

AgriSOLUTIONS