McGillicuddy Corrigan AGRONOMICS™

IFarmIS.com

Independent Farm Information System

“Helping you to be your own best agronomist”

John McGillicuddy

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319-330-8446

www.mcagronomics.com

www.ifarmis.com

Resource Allocation

IFarmIS

- What are the resources you use to grow a crop?

Crop Production Resources

- Light
- Water
- Nutrients
- CO^2
- Space
- Time
- Money

Generate an equation for Soybean Yield

- ___ * ___ = Y

Generate an equation for Soybean Yield

- $S_{\#} * S_{wt} = Y$

Soybean Yields

- $S_{\#}$
  - Number of Plants
  - Number of Branches
  - Number of Nodes
  - Number of Flowers
  - Number of Pods Established
  - Number of Pods Harvested
  - Seeds per pod
- S_{wt}

Soybean Yield

- Critical Yield determination in many fields appears to be pod retention in late July/August
- Appears to be a resource issue

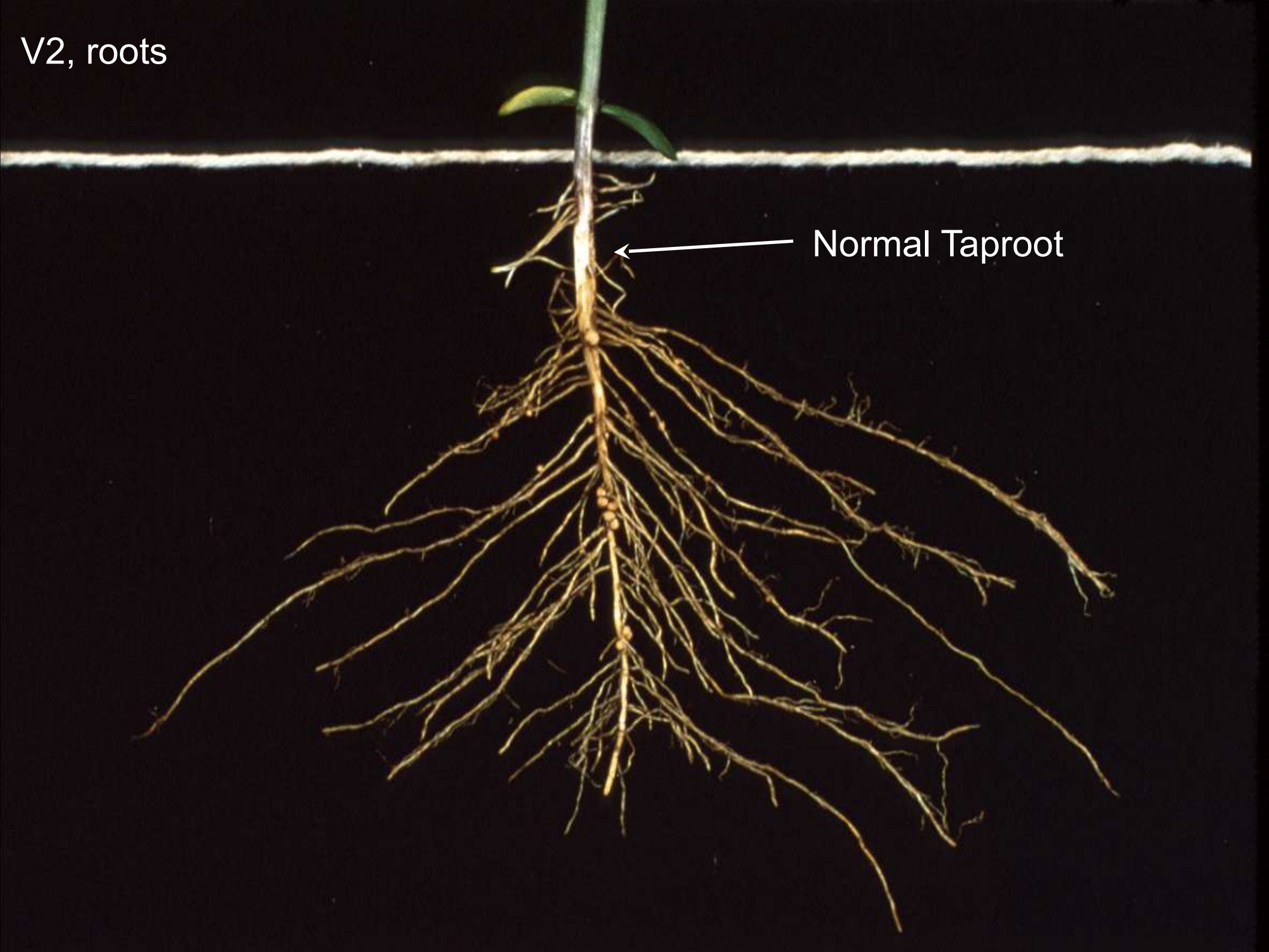

50
FEDERAL RESERVE NOTE
ML 30689369 A
L12
THE UNITED STATES OF AMERICA
THIS NOTE IS LEGAL TENDER FOR ALL DEBTS, PUBLIC AND PRIVATE
SERIES 2013
Treasurer of the United States
Secretary of the Treasury
GRANT
DOLLARS

Soybean Yield and Effective Root Mass

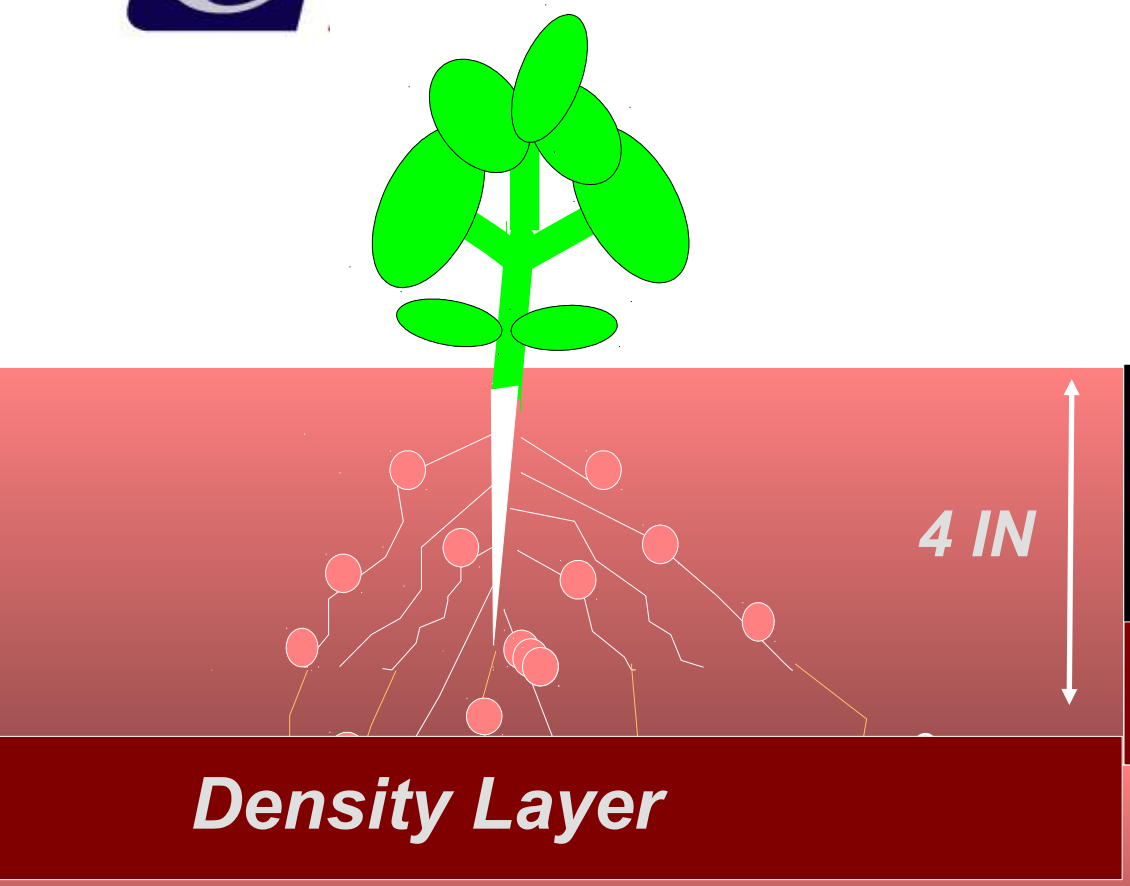
- Are you accessing all the current resources?
- Can a change in your tillage system reduce pod drop?

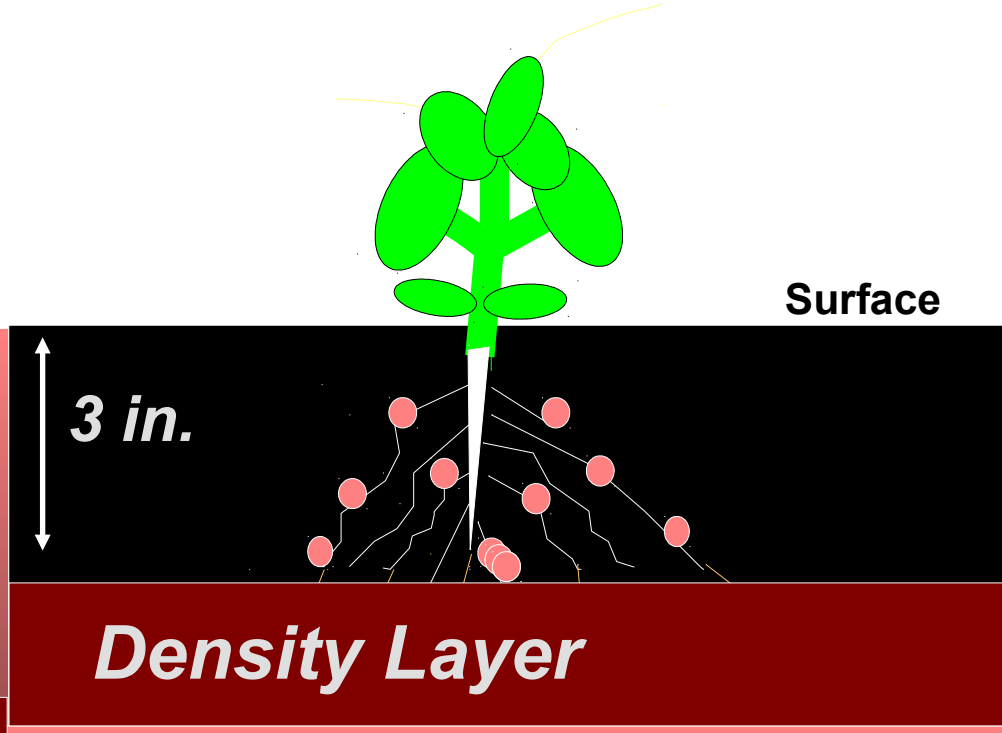
Soybeans – Effective root mass


Abnormal Taproot


V2, roots
Normal Taproot

Effective Rooting Mass



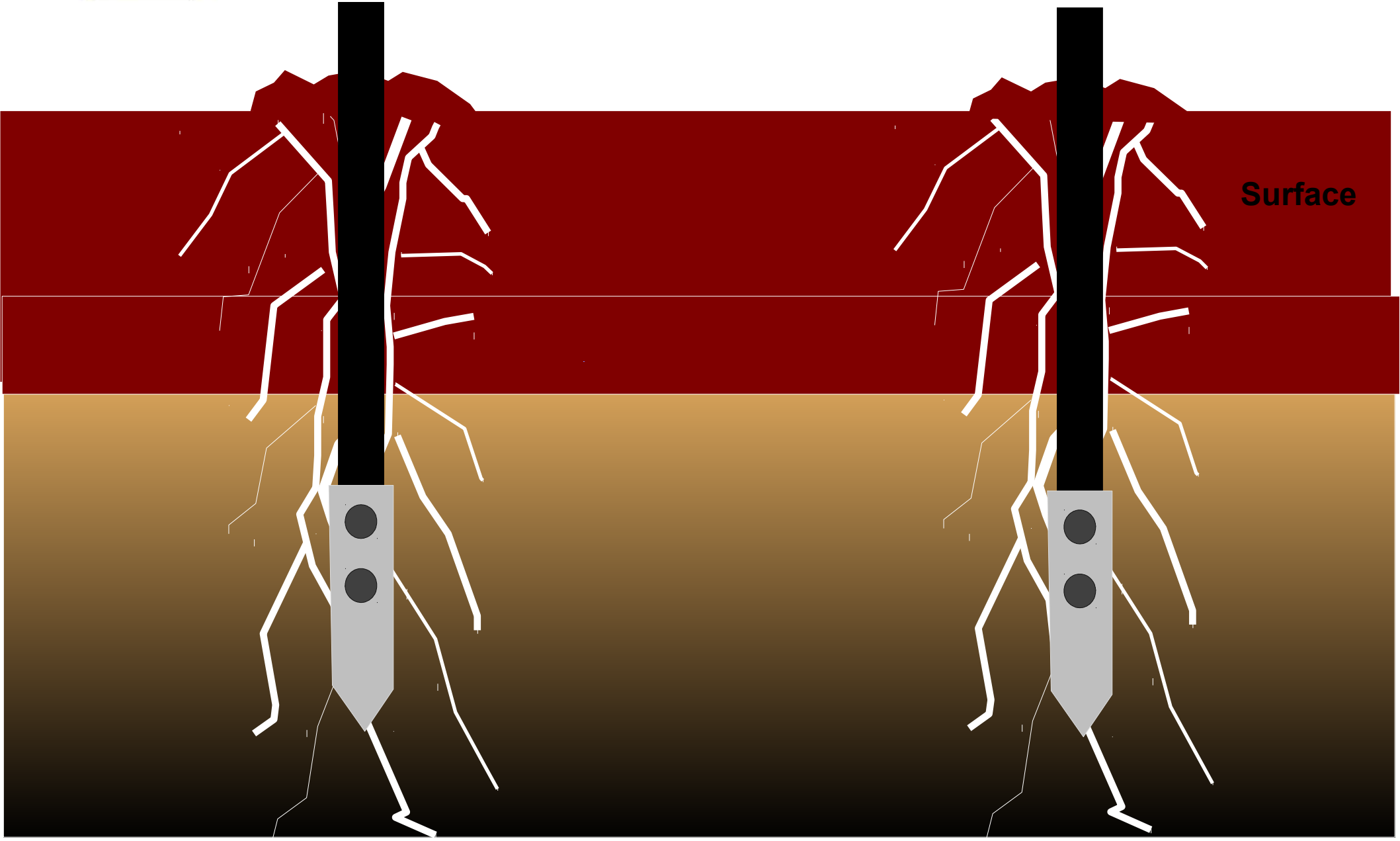


Every Extra inches cm of ERM makes an additional 330,000 lbs/a of soil and resources available to the crop.

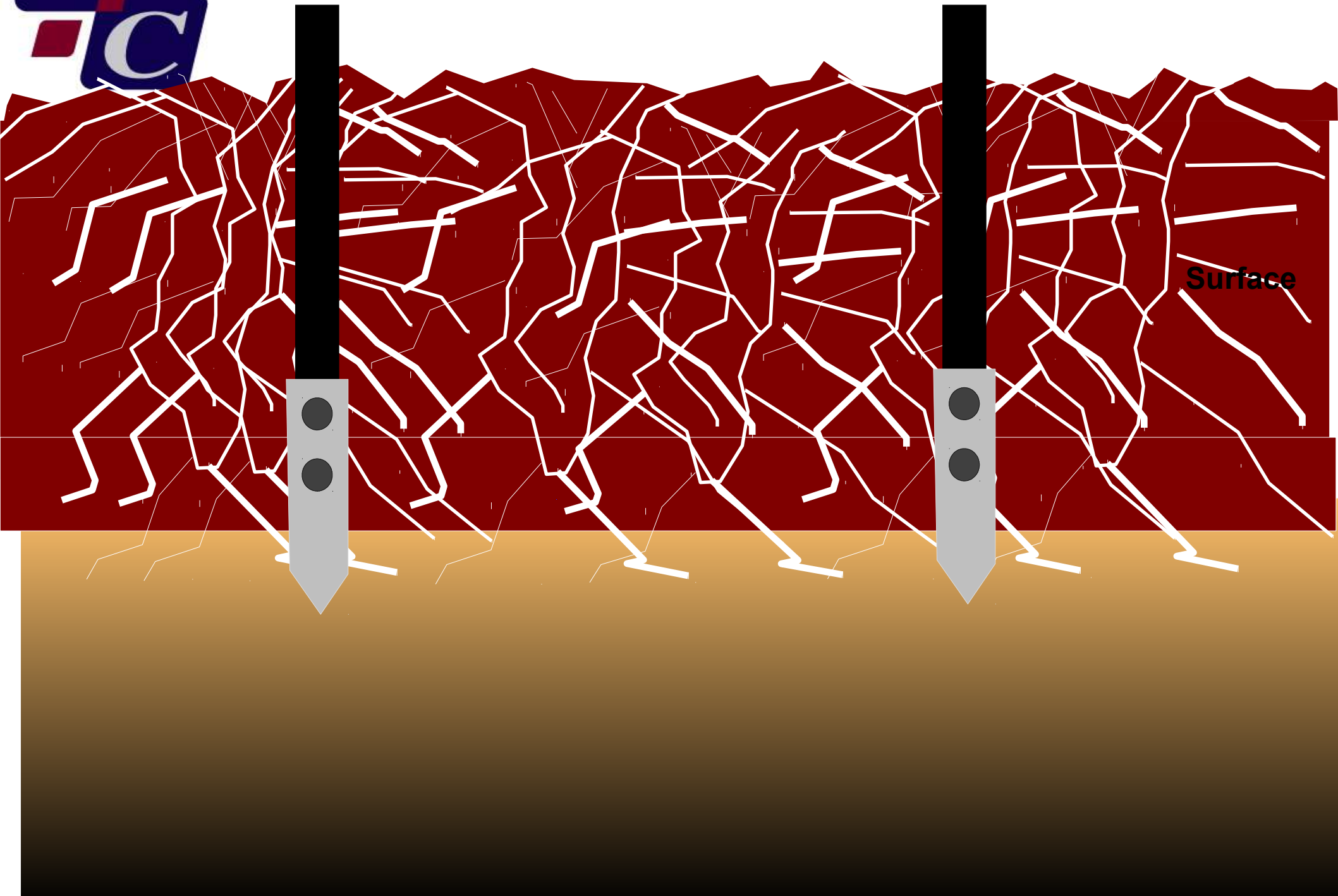
Soybean Yield and Effective Root Mass

- Fall rip chisel
- Level clods late fall
- Plant stale in the spring
- Roll after planting
- Select fields based on individual field conditions

Effective Ripping/Chiseling



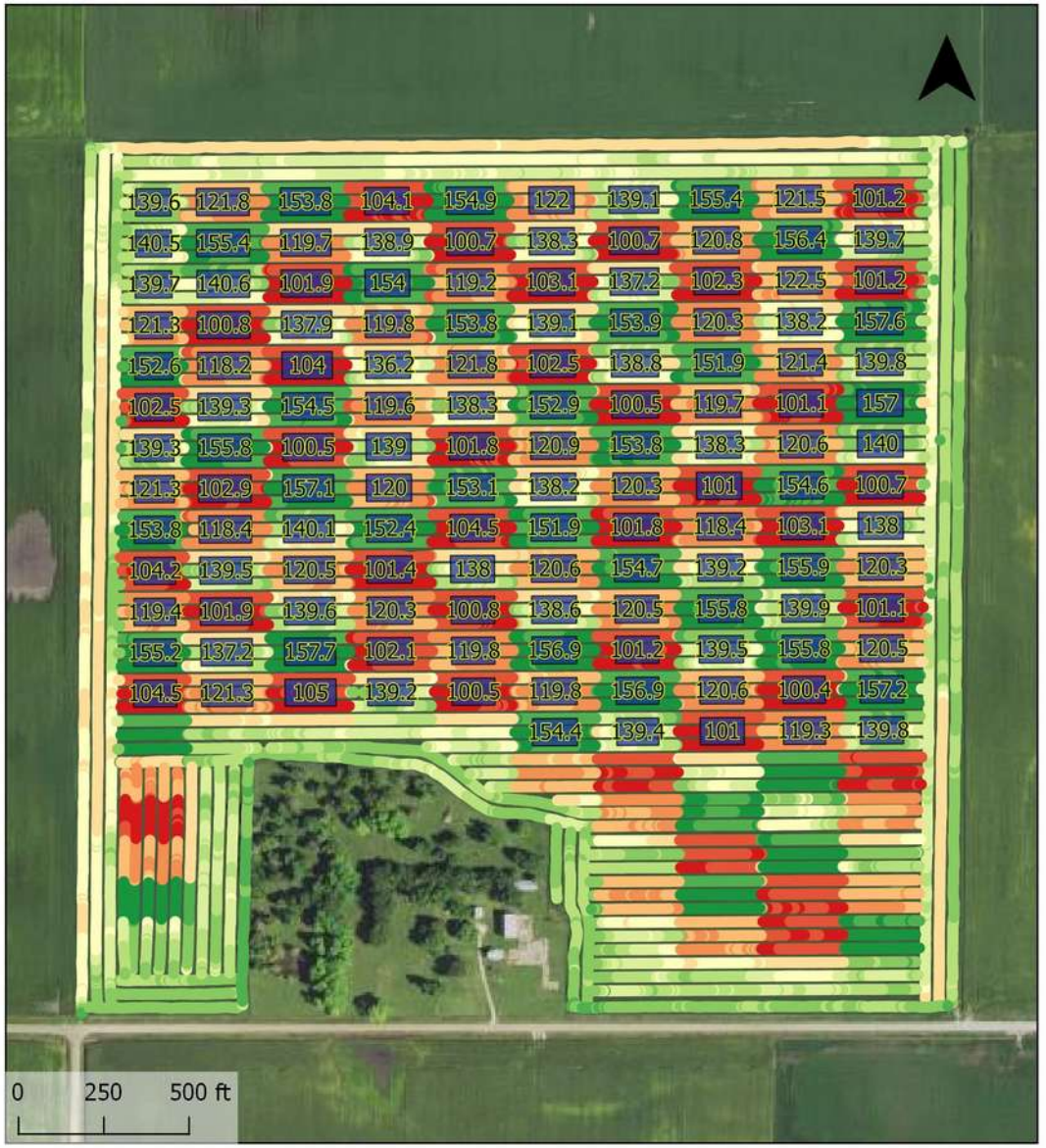
Effective Ripping/Chiseling



Soybean Population

- Balancing population, growth, and available resources
- Focusing available resources to the the part of the plant you sell

Soybean Population	Perry, IA



Seed Rates

- 95.2 - 101.0
- 101.0 - 115.2
- 115.2 - 120.4
- 120.4 - 126.1
- 126.1 - 136.6
- 136.6 - 138.6
- 138.6 - 139.6
- 139.6 - 140.6
- 140.6 - 142.9
- 142.9 - 155.2
- 155.2 - 169.3

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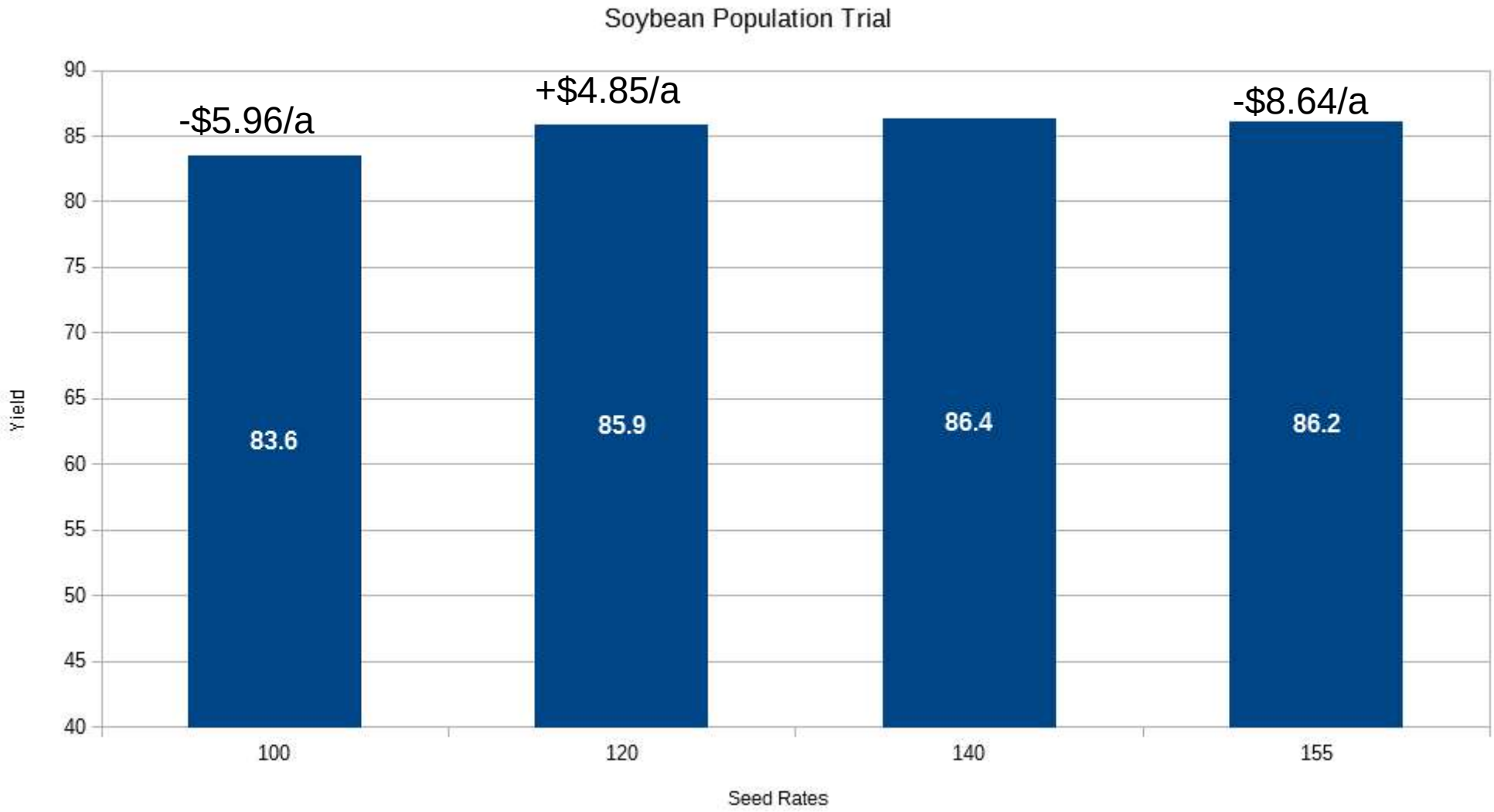
Karen Corrigan: 309-314-0699

2018
Soybean Population Trial



$8.70 Beans, $65.00 Seed

Perry, IA

Soybean Population Winfield, IA

bakerfarm_west_bean_seedrx

- 105000
- 110000
- 115000
- 120000
- 125000
- 130000
- 135000
- 140000
- 145000
- 150000

Farm name: Baker Farm
Field name: West
Product: Seed Beans
Total acres: 155.10
Total Seed Beans: 19594000 Seeds
Total Seeds 140k units: 140.0
Minimum Rate: 105000 Seeds
Maximum Rate: 150000 Seeds
Average Rate: 126331.40 Seeds/acre
Acres to spread: 155.10

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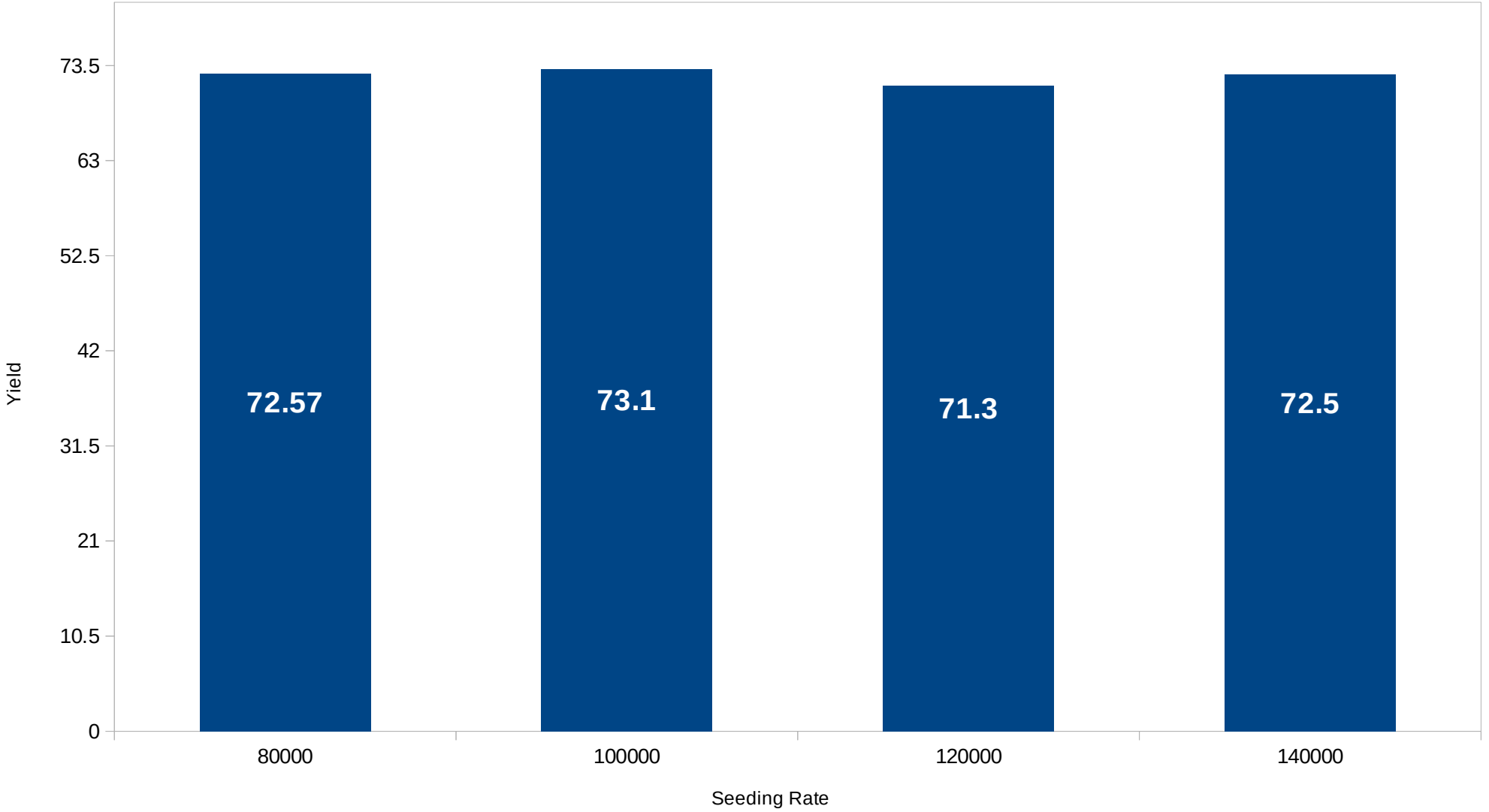
Soybean Population

LeClaire, IA, Planted 5/13/17, Notill, 15” rows



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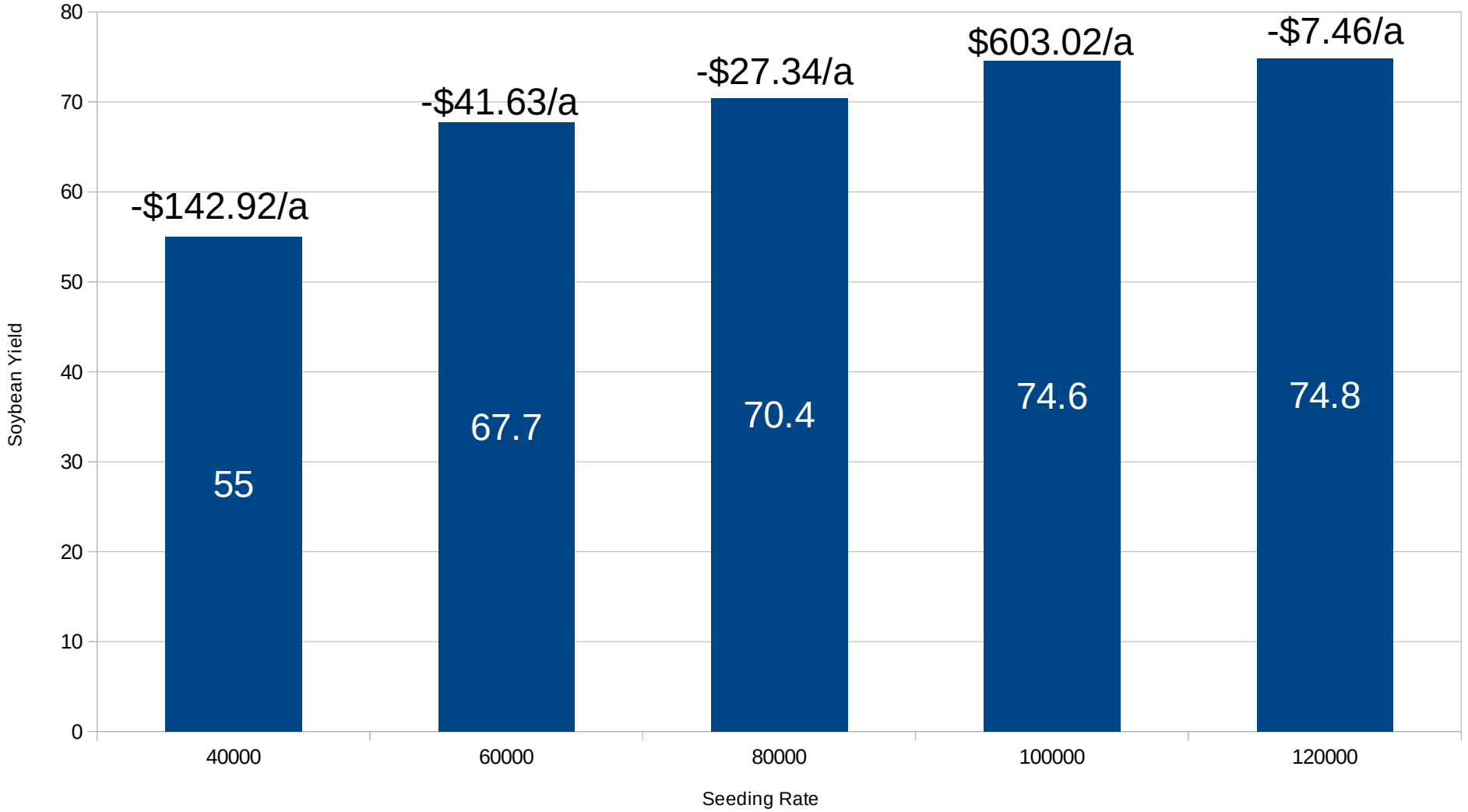
Soybean Population

LeClaire, IA, Planted 5/2/18, Notill, 15” rows

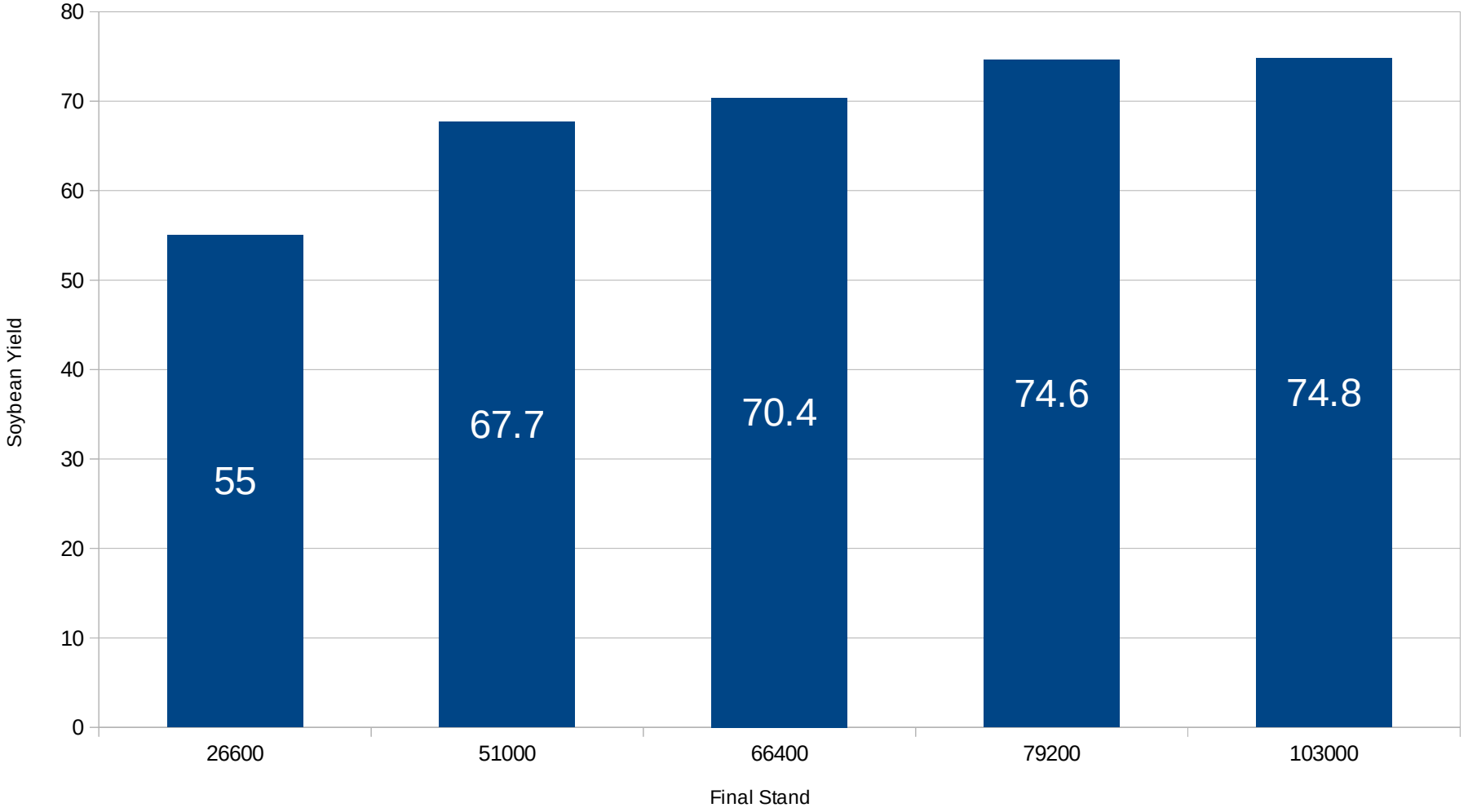


Low seeding rate had 5-7 Bushels lost in harvest, $8.70 Beans, $65.00 Seed

IFarmIS

Soybean Population

LeClaire, IA, Planted 5/2/18, Notill, 15” rows



Low seeding rate had 5-7 Bushels lost in harvest

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26000 stand beans May 30, 2018

IFarmIS

May 30, 2018

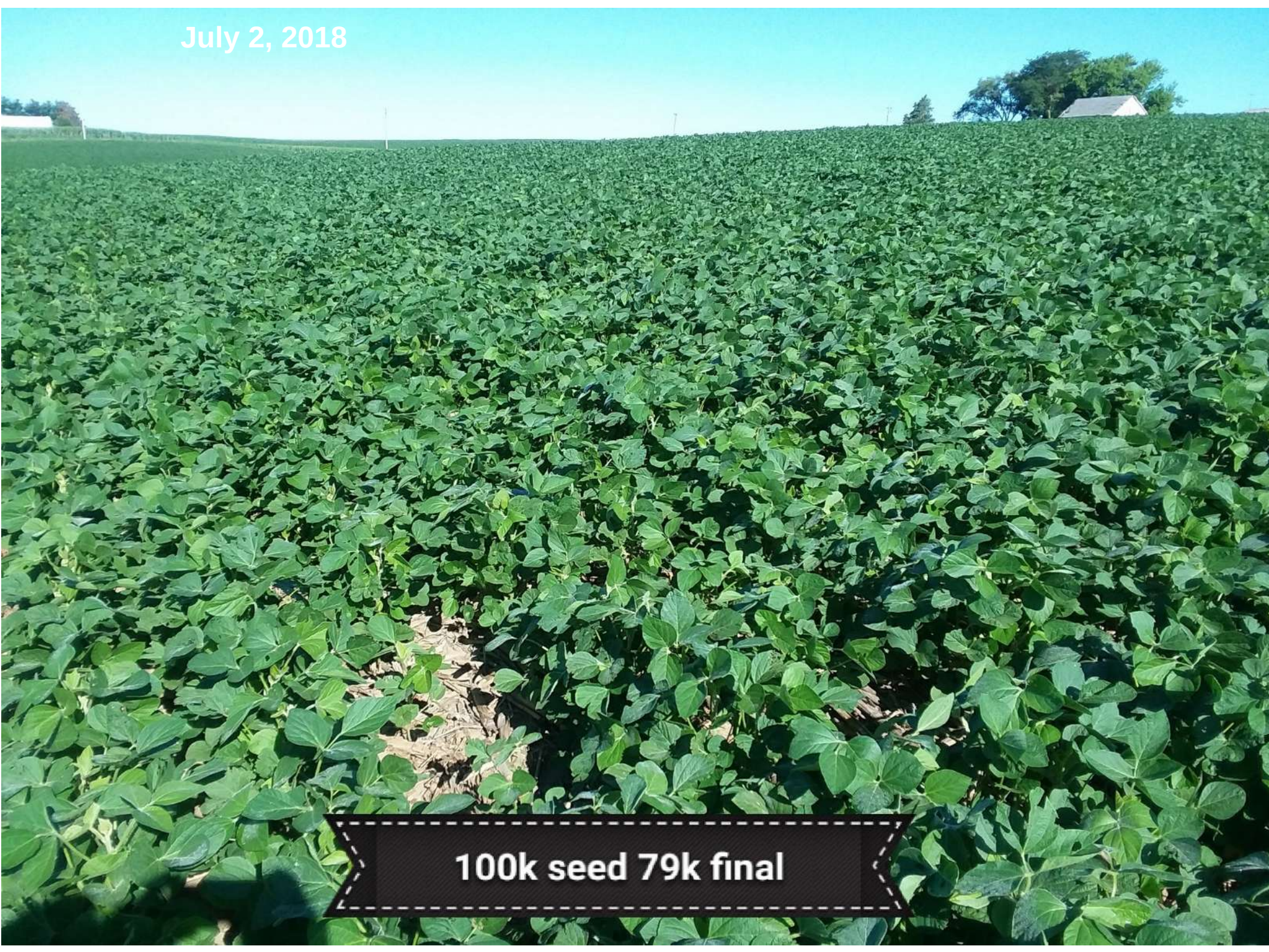
40000 seeded

100000 Seeded


July 2, 2018
40k seed 26k final

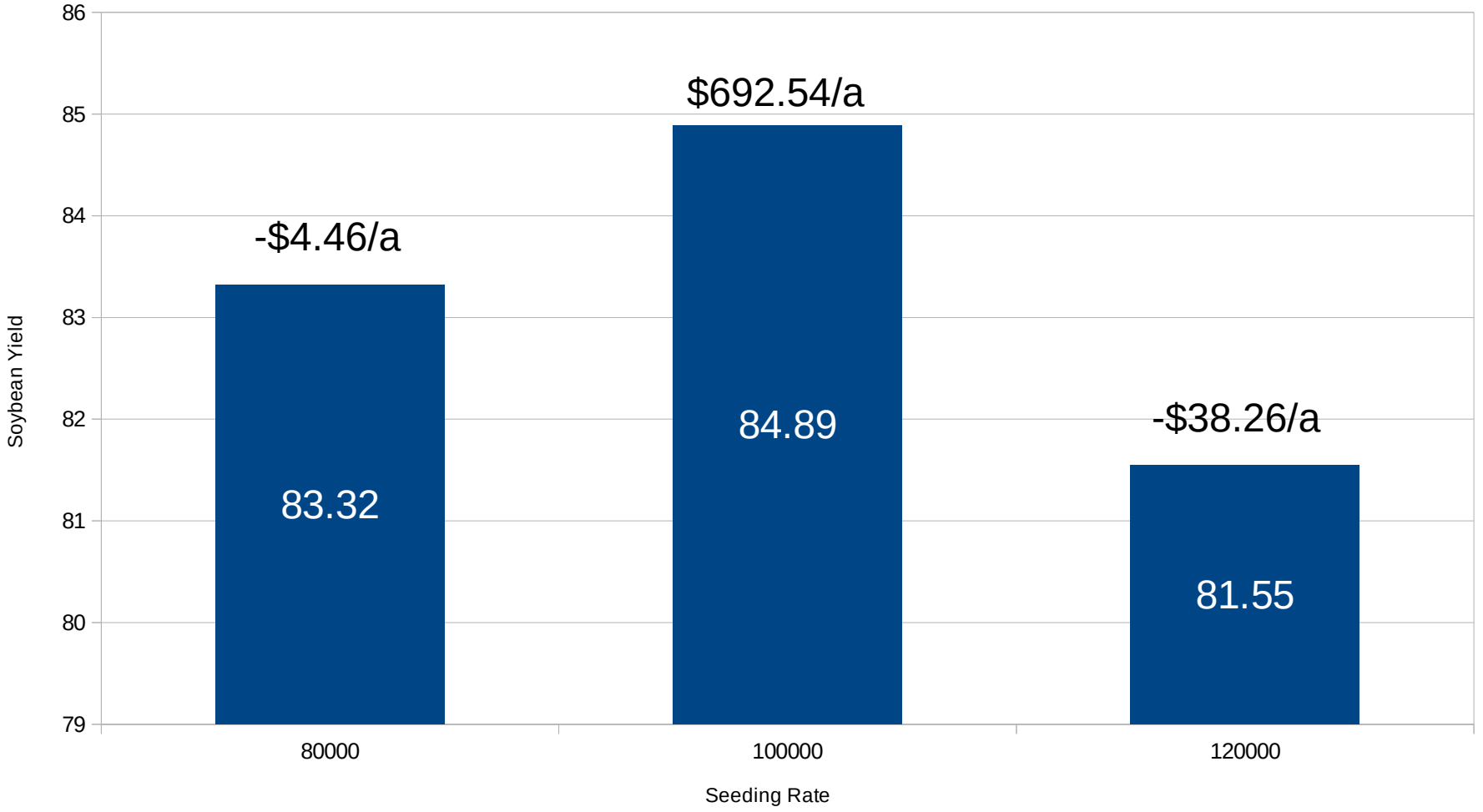

July 2, 2018
60k seed 48k final


July 2, 2018
80k seed 66k final


July 2, 2018
100k seed 79k final

Soybean Population

Monticello, IN, Planted 4/29/18, 30” rows



$8.70 Beans, $65.00 Seed

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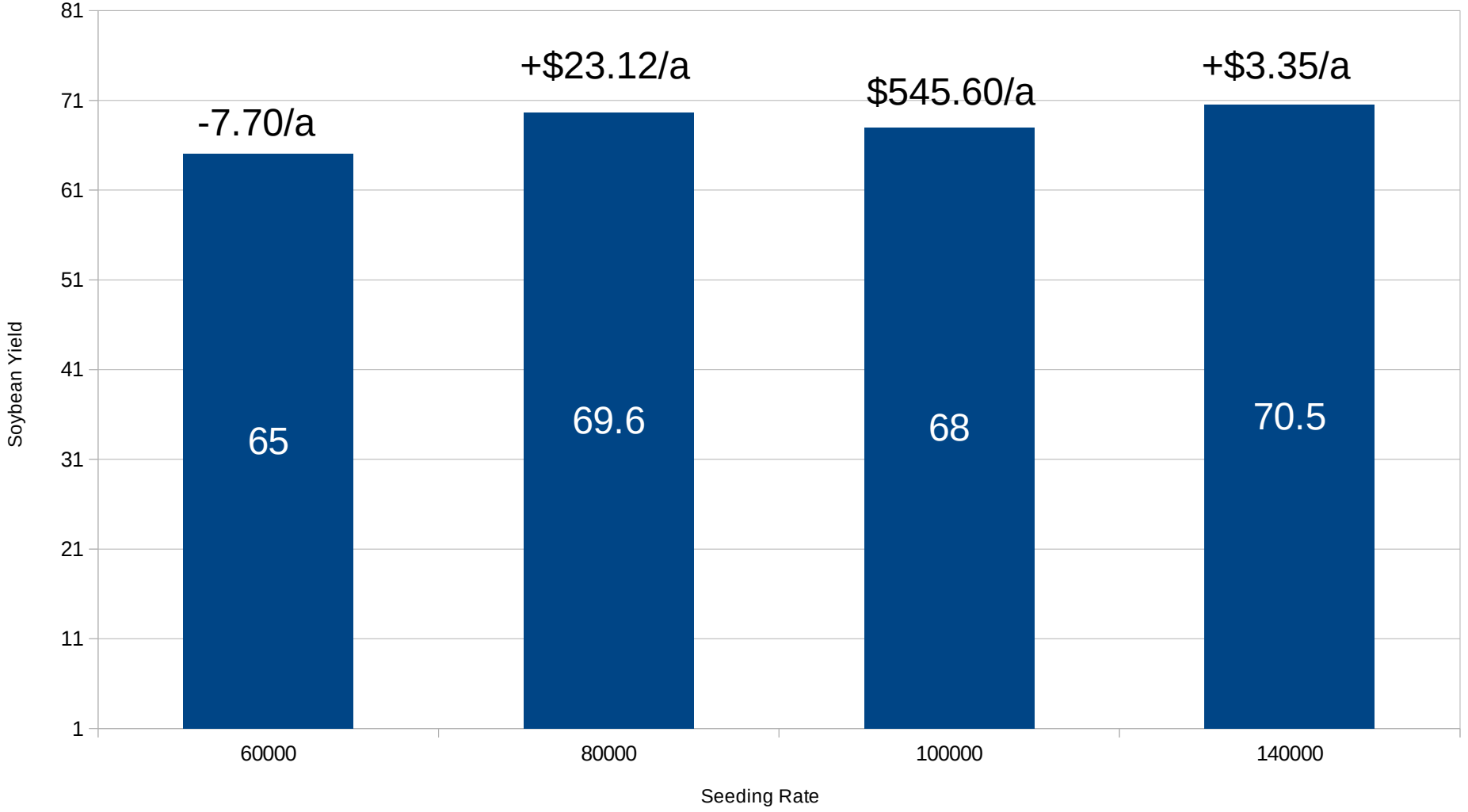
Soybean Population

Riceville, IA, Planted 5/22/18, VT, 30” rows



Heavy Rain all season

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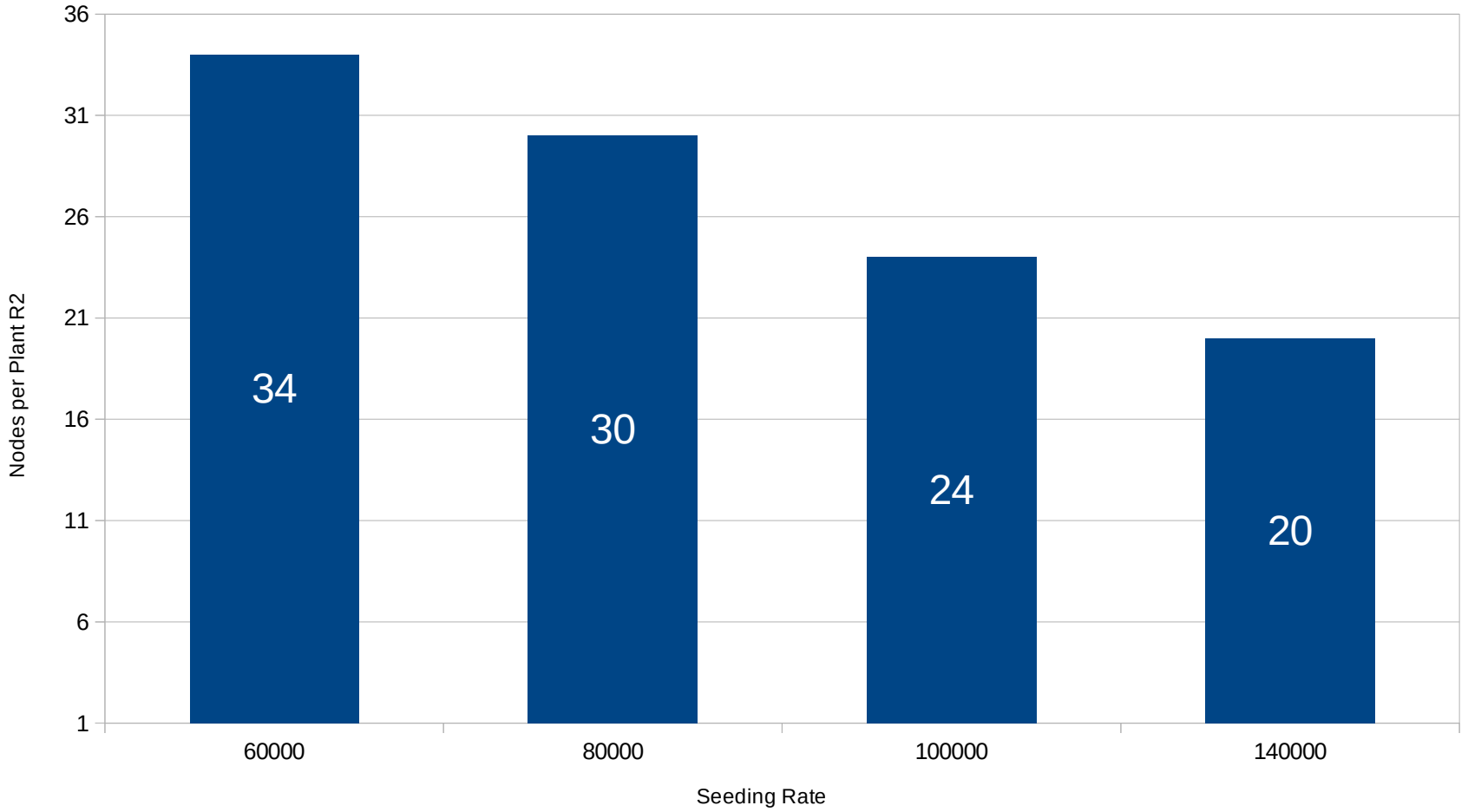
Soybean Population

Riceville, IA, Planted 5/22/18, VT, 30” rows

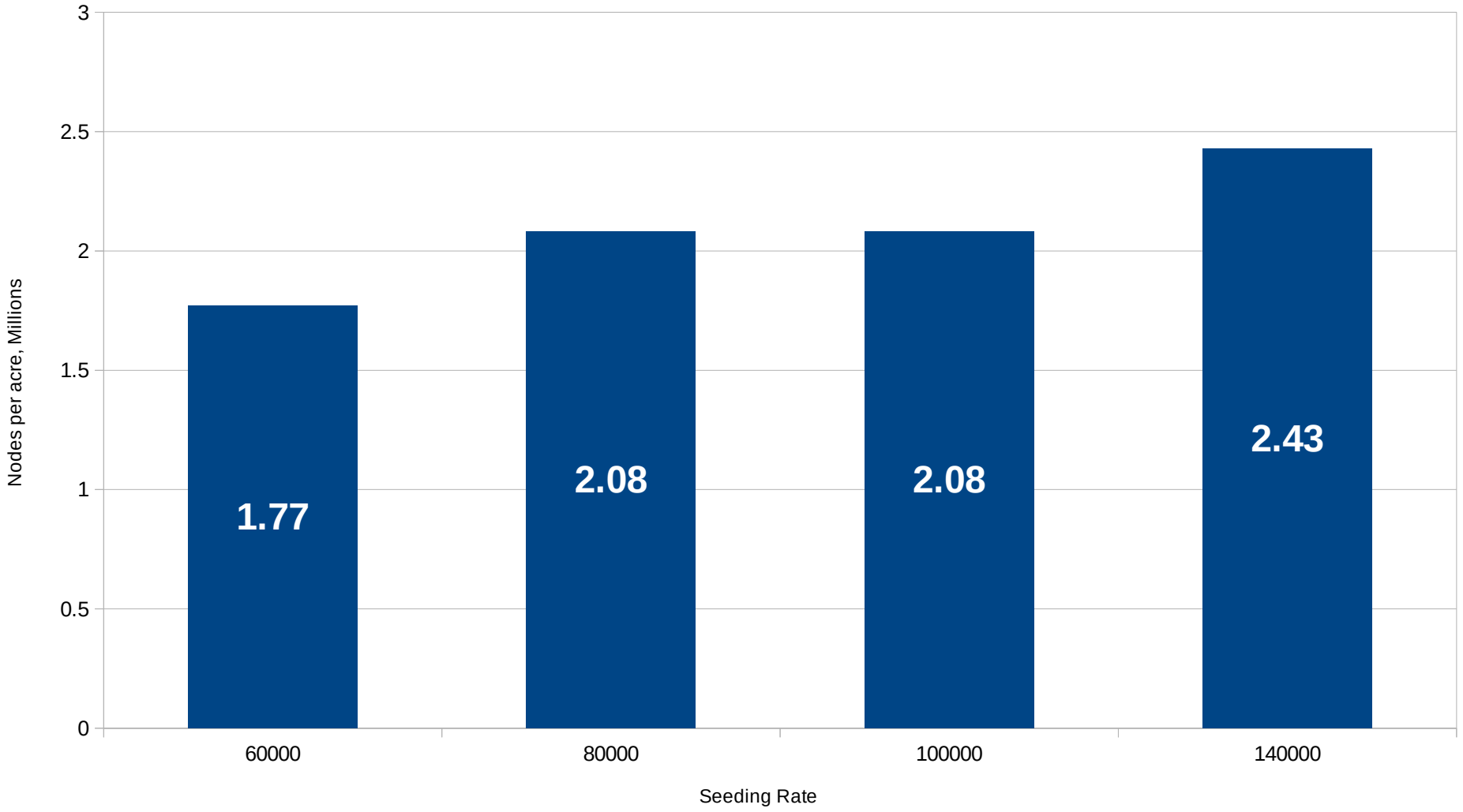


Heavy Rain all season

IFarmIS

Soybean Population

Riceville, IA, Planted 5/22/18, VT, 30” rows



Heavy Rain all season

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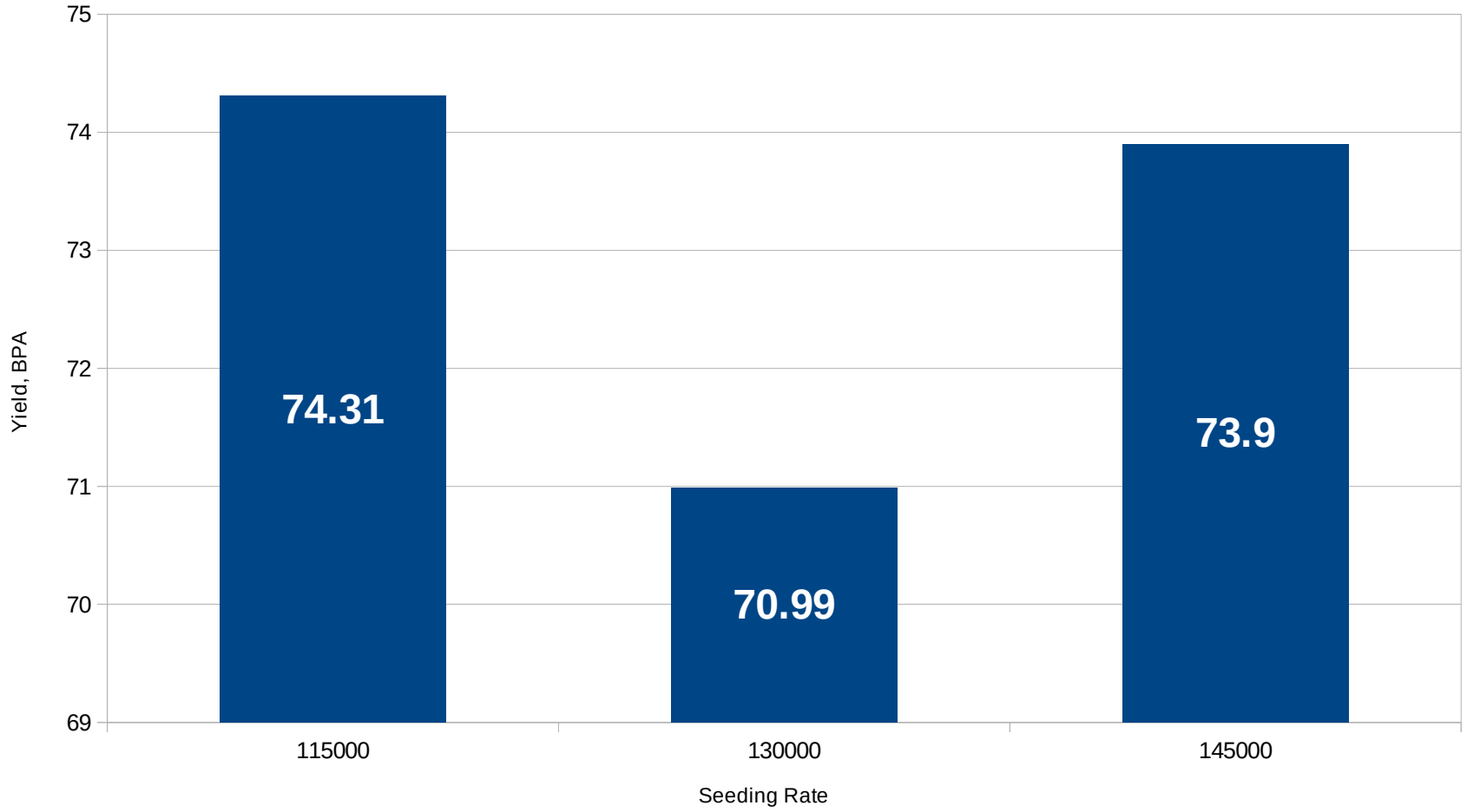
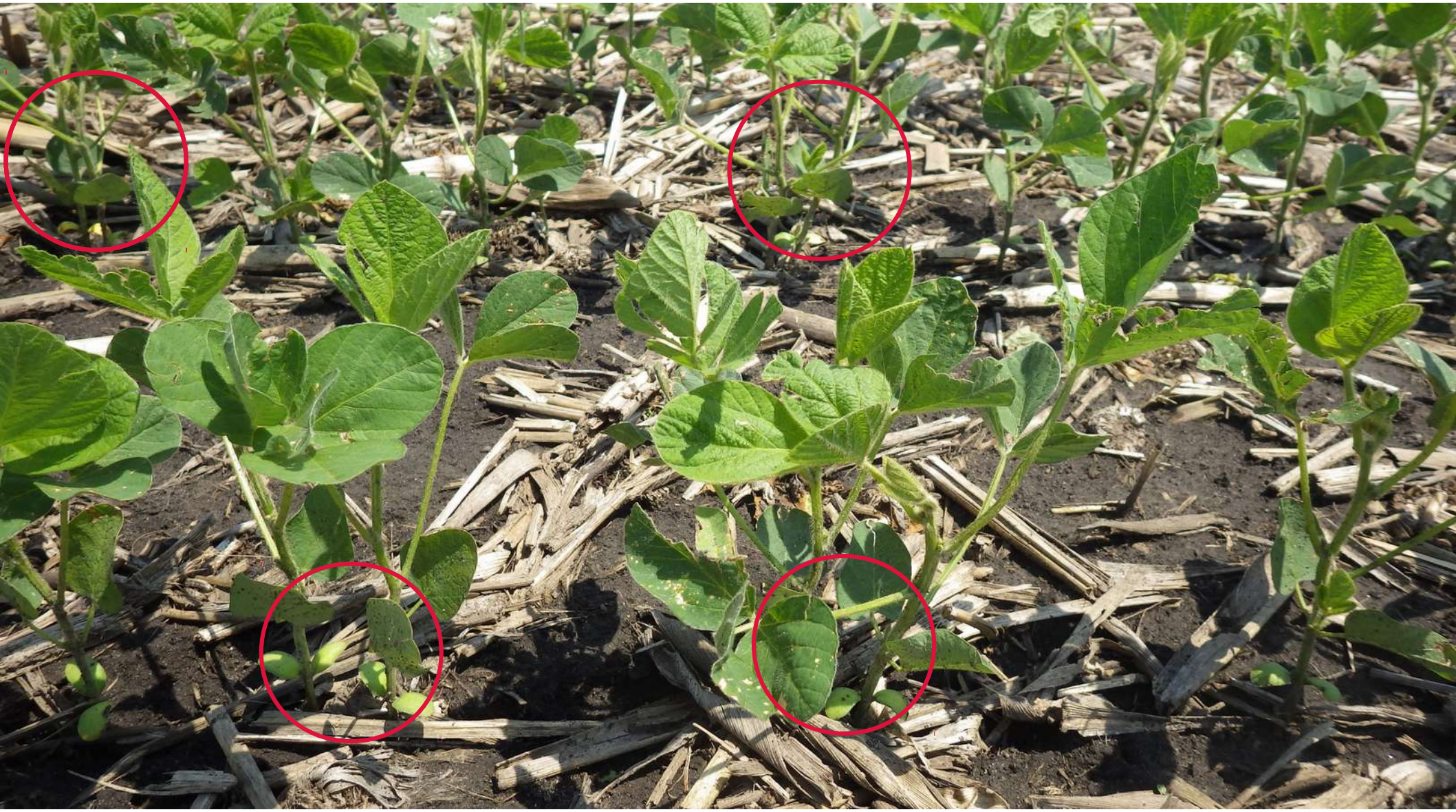
Soybean Population Trial East Side



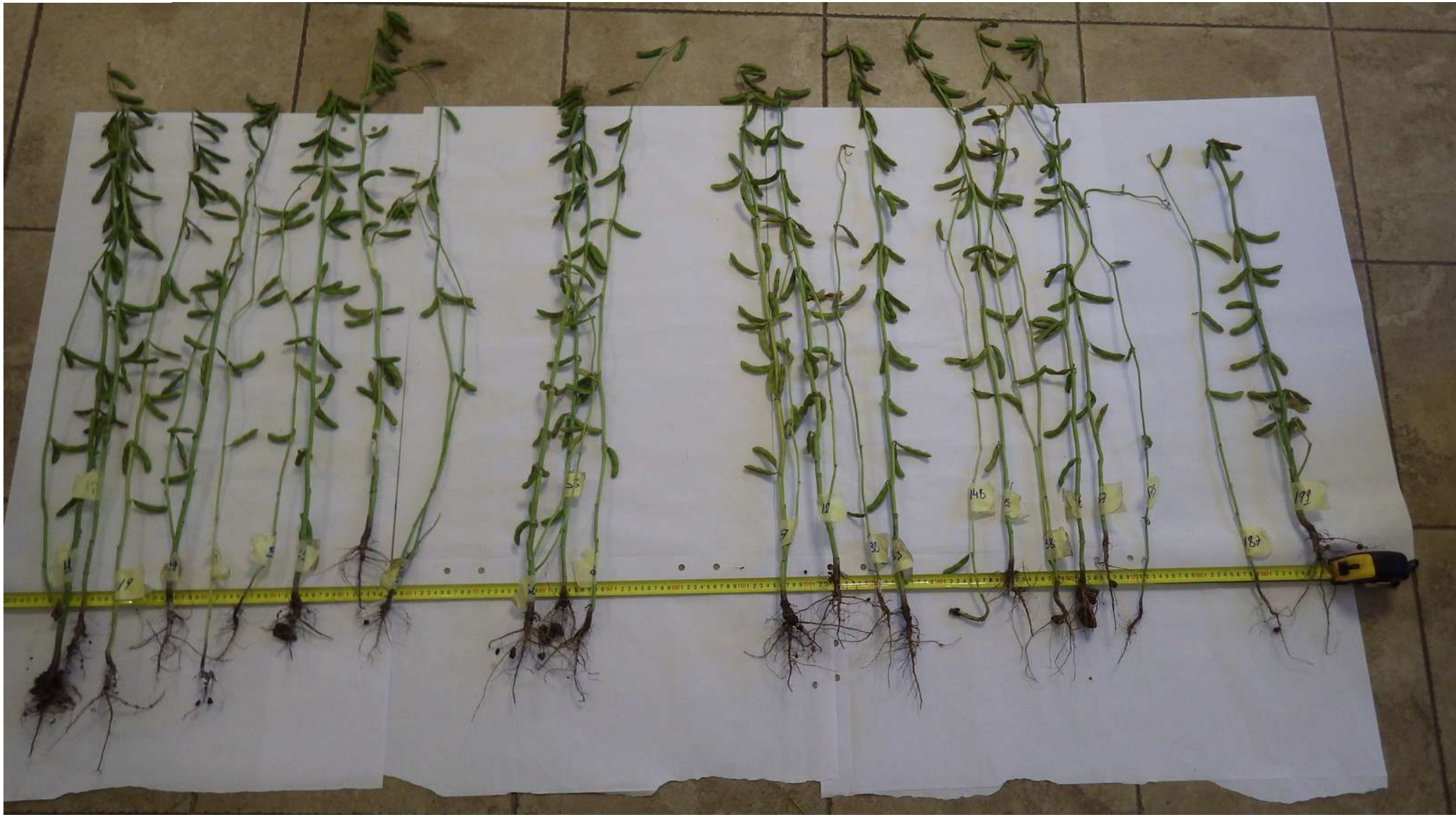


John Deere Soybean Plate

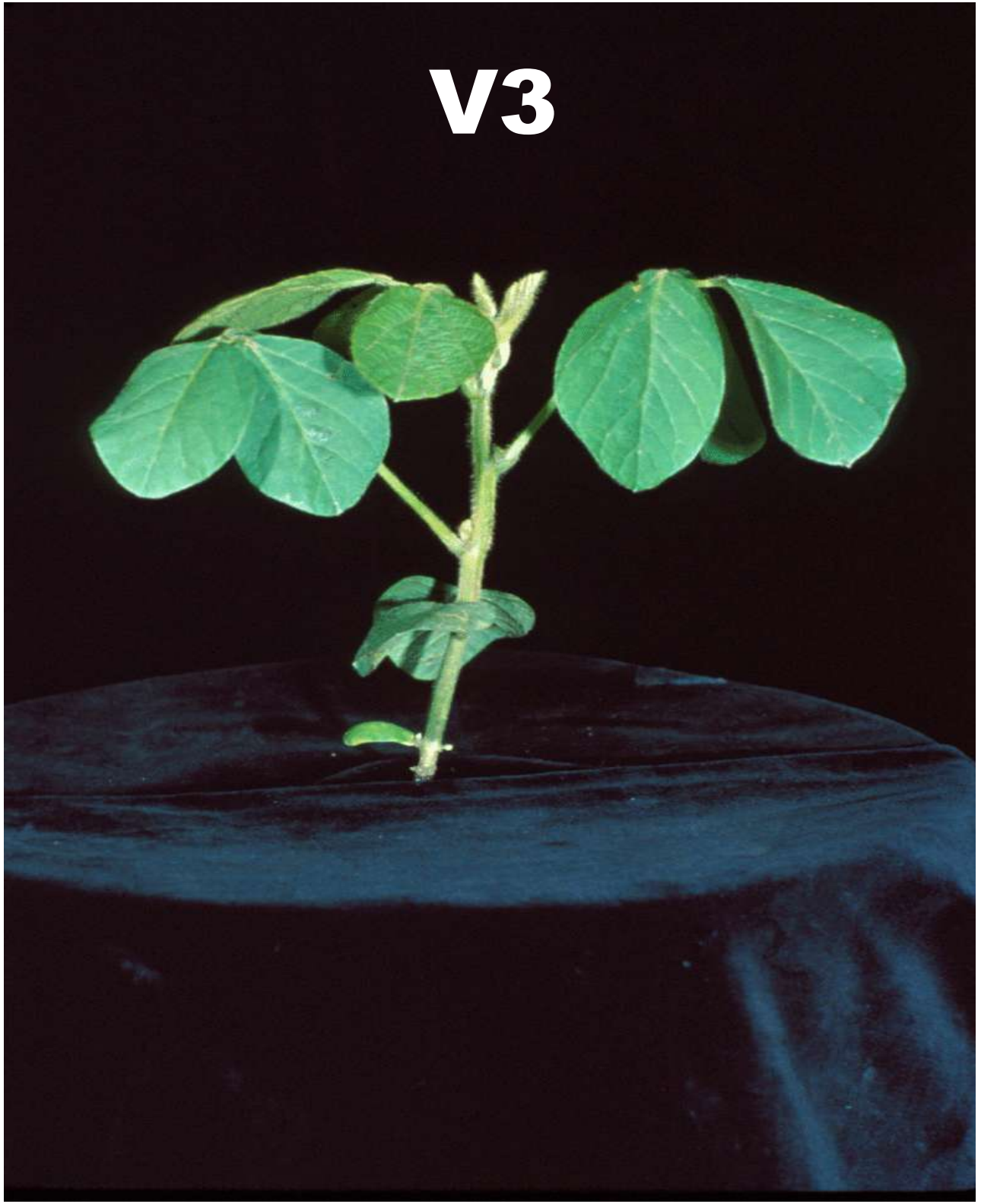

John Deere Cotton Plate

John Deere Cotton Plate A56261


R-10



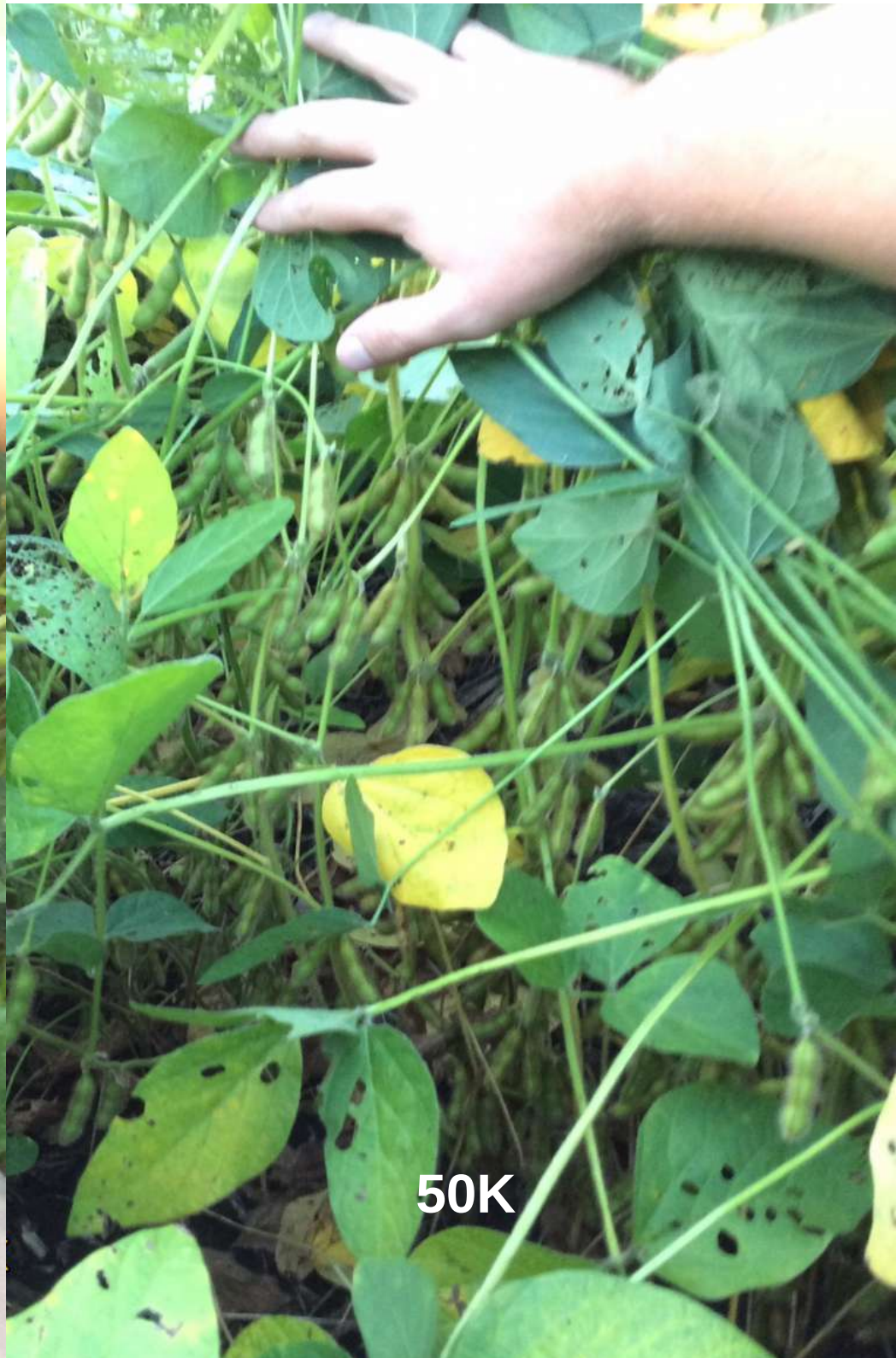
20 Inch Beans, seeded at 140,000, Harvest population is 104,000


V3


150
50k
75
100
125
150
50
150


150k
50k


150K


50K

Soybean Populations for Maximum Profit

Next Steps

- **Modify by variety**
  - **And by Description, “medium thin, medium bush”**
- **Add impact by yield goal and soils**
- **Understand how to adjust by germination issues**


Narrow Band
Brown or Black Eyes

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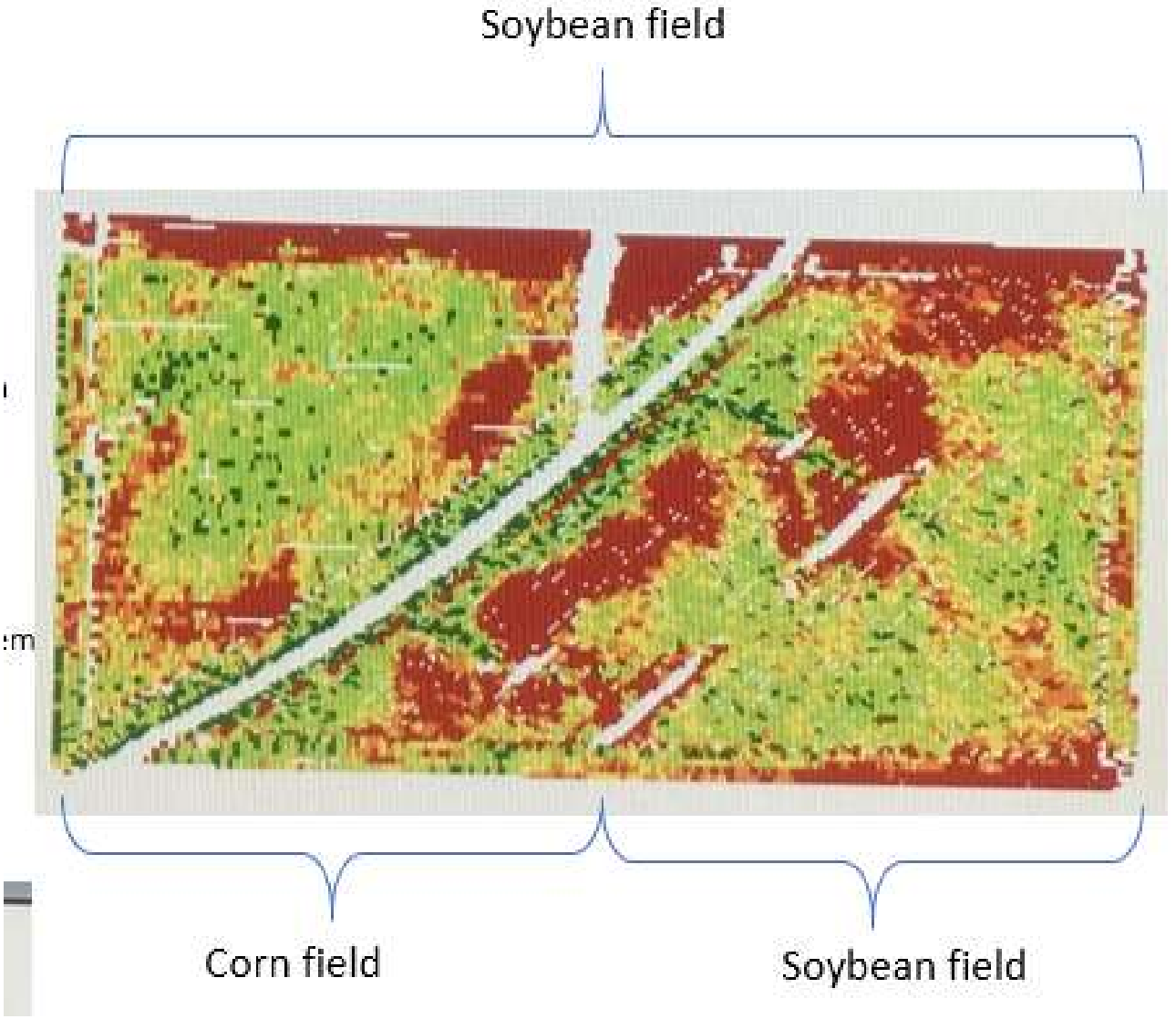
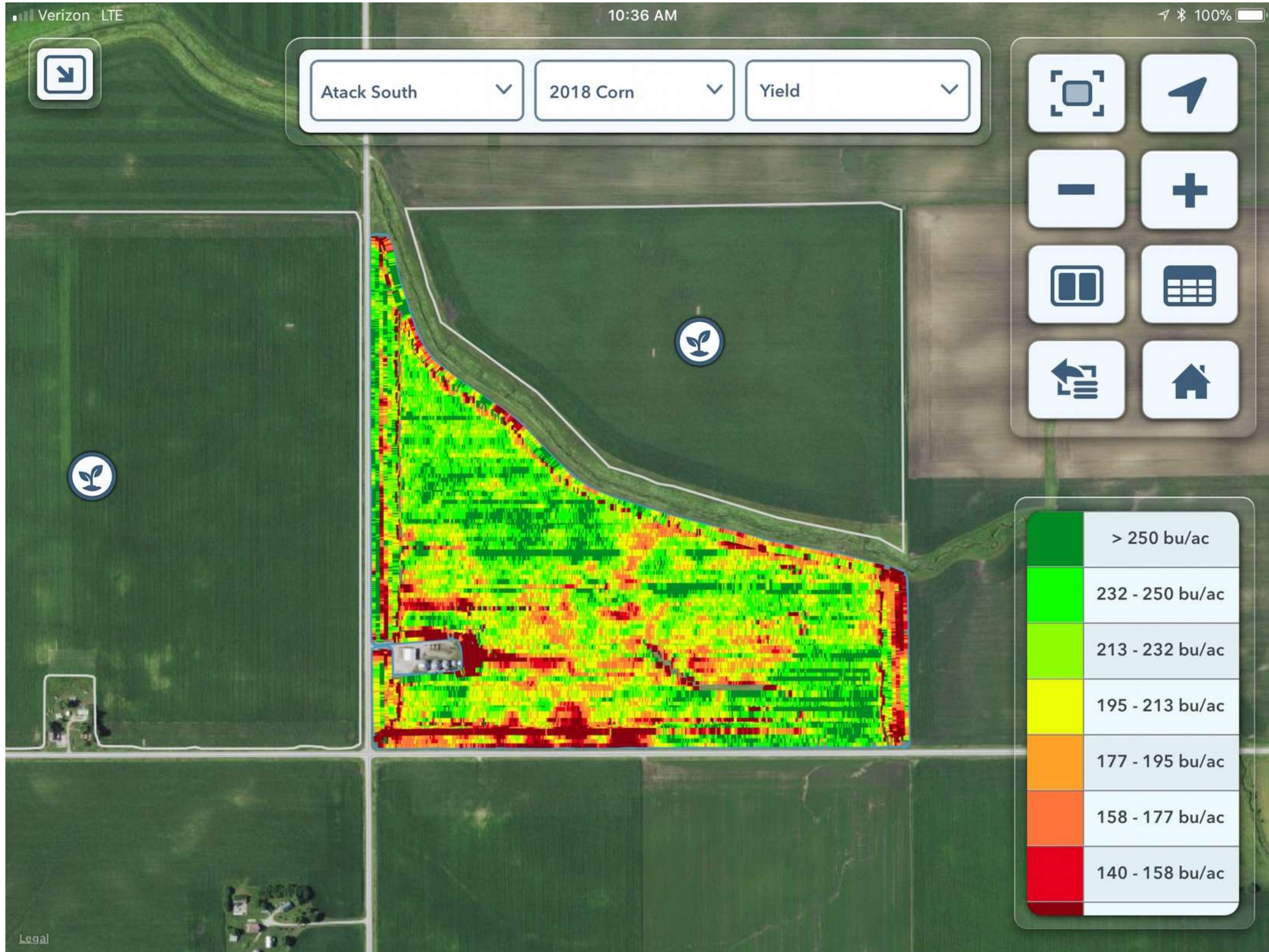

Soybean field
Corn field
Soybean field


Verizon LTE
10:36 AM
100%
Atack South
2018 Corn
Yield
> 250 bu/ac
232 - 250 bu/ac
213 - 232 bu/ac
195 - 213 bu/ac
177 - 195 bu/ac
158 - 177 bu/ac
140 - 158 bu/ac
Legal

Border

Interior

Border

Interior

East End

West End


Interior


Border

Smarter Use of Inputs

Fertilizers

- Fertilizer is up and grain is low
- Be smart with your money
  - Place your investment for best return
- Key Mistakes
  - Applying fertilizers you do not need
  - Not applying fertilizers you do need
  - Many times in the same field

- How to do it better

Organic P Testing

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Location	OM	P1	P2	Organic P
Princeton, IL	2.9	35	39	513
Princeton, IL	3.6	33	60	431
Carthage, IL	2.6	21	37	348
Carthage, IL	3.0	40	69	462
New Boston, IL	2.1	23	41	314
New Boston, IL	2.7	17	47	322
Leonard, ND	2.2	29	50	423
Leonard, ND	3.8	22	47	440

How much P is out there?

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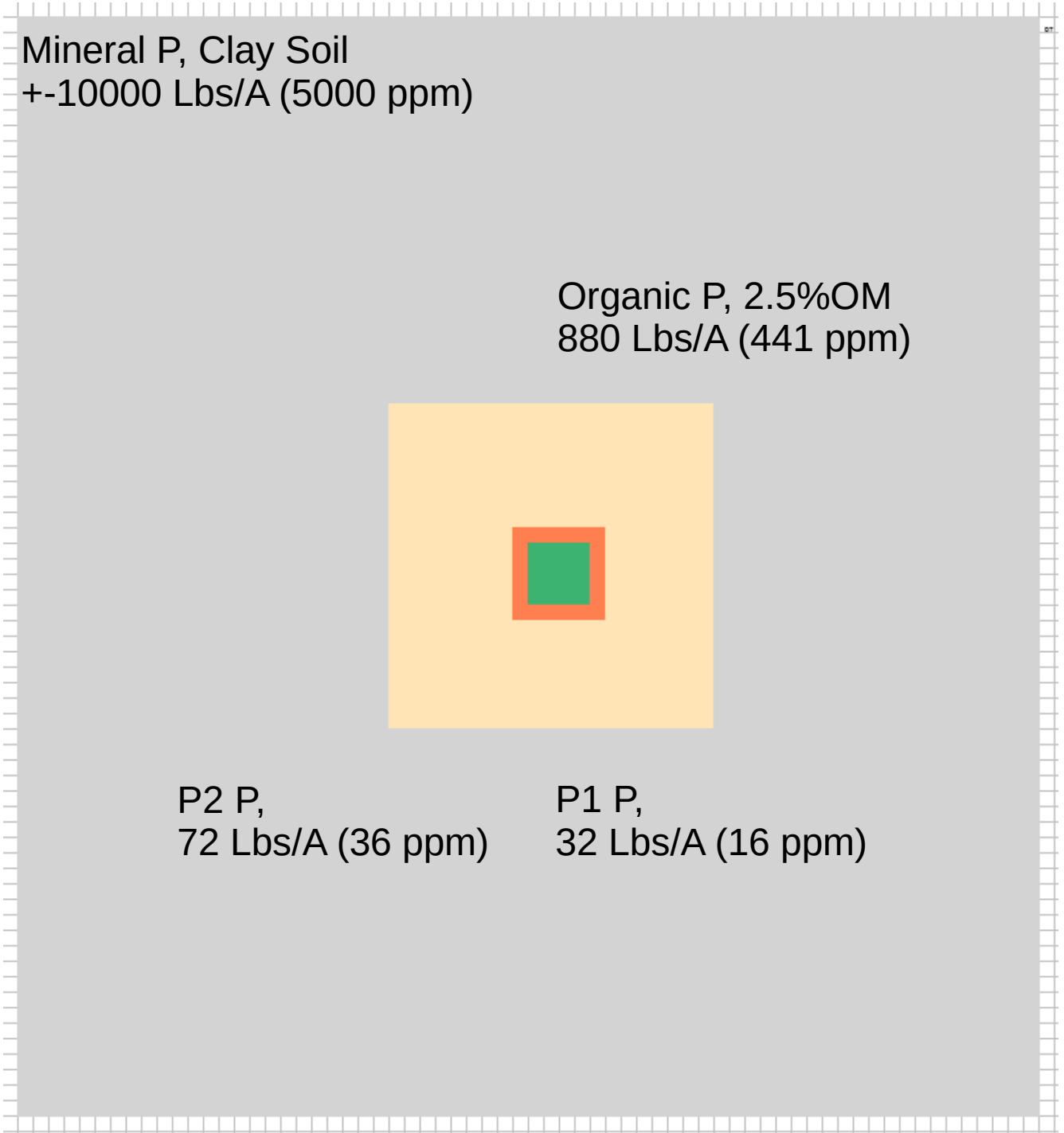
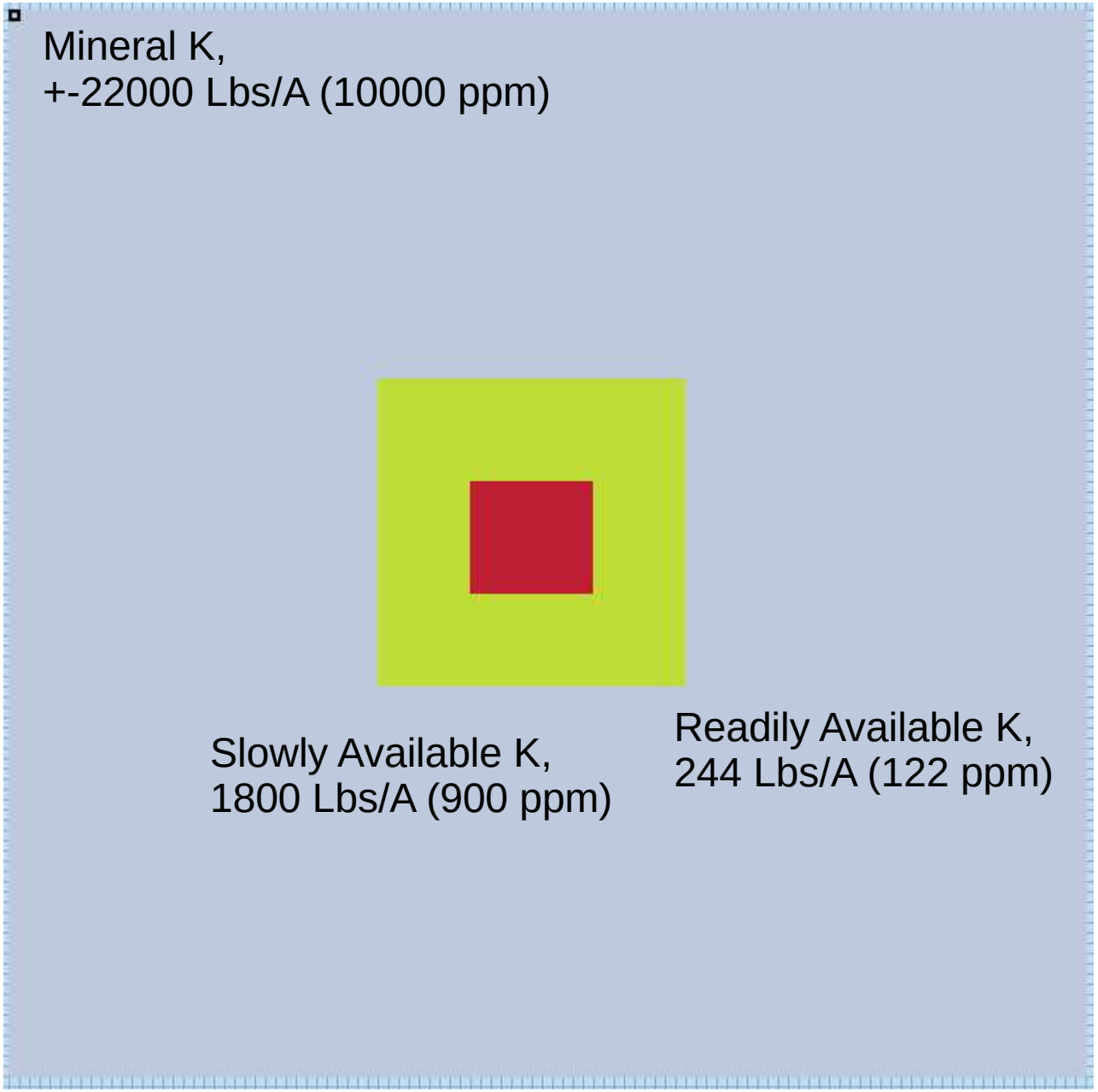
Total P, top 6 inches,
Clay Loam Midwest soil
Around 11000 Lbs per acre
Removal for 32,000 Bu.



How much K is out there?

IFarmIS

Total K, top 6 inches,
Clay Loam Midwest soil
Around 22000 Lbs per acre
Removal for 85,000 Bu.



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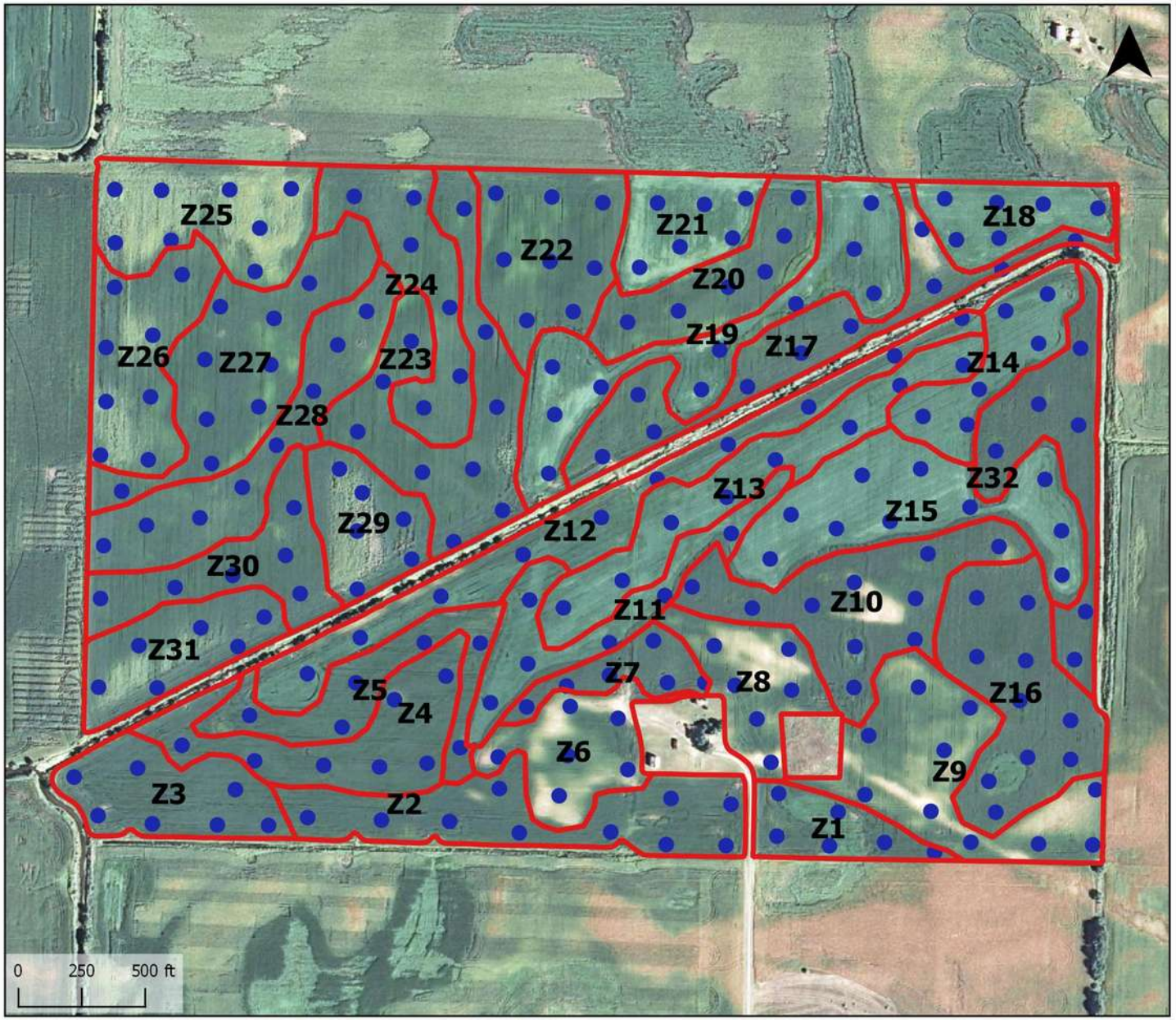
Grower: Profitable operation.	Field: Smart South; 2018F



Smart Farm Zones
Sample Farm_SAMPLE

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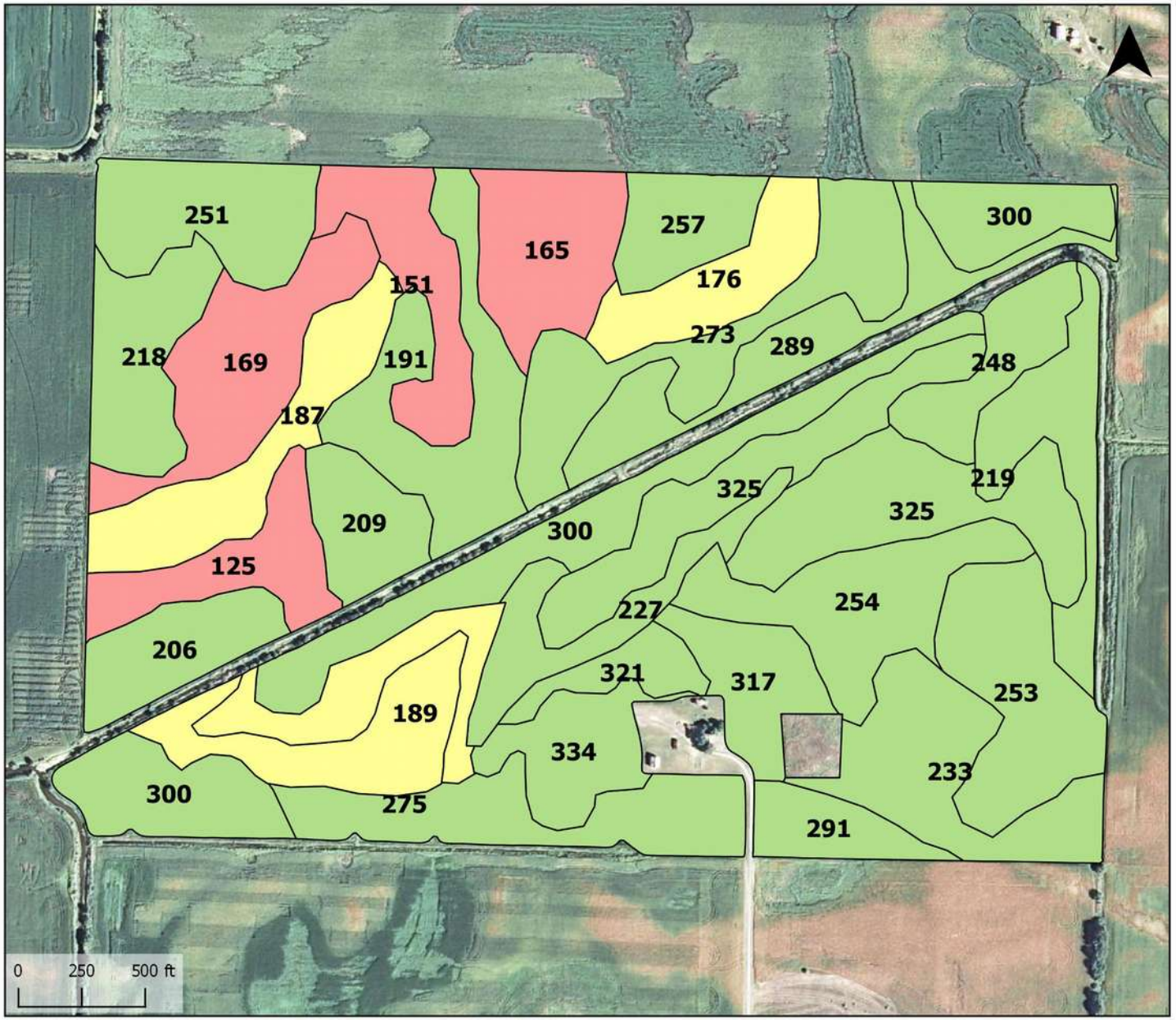

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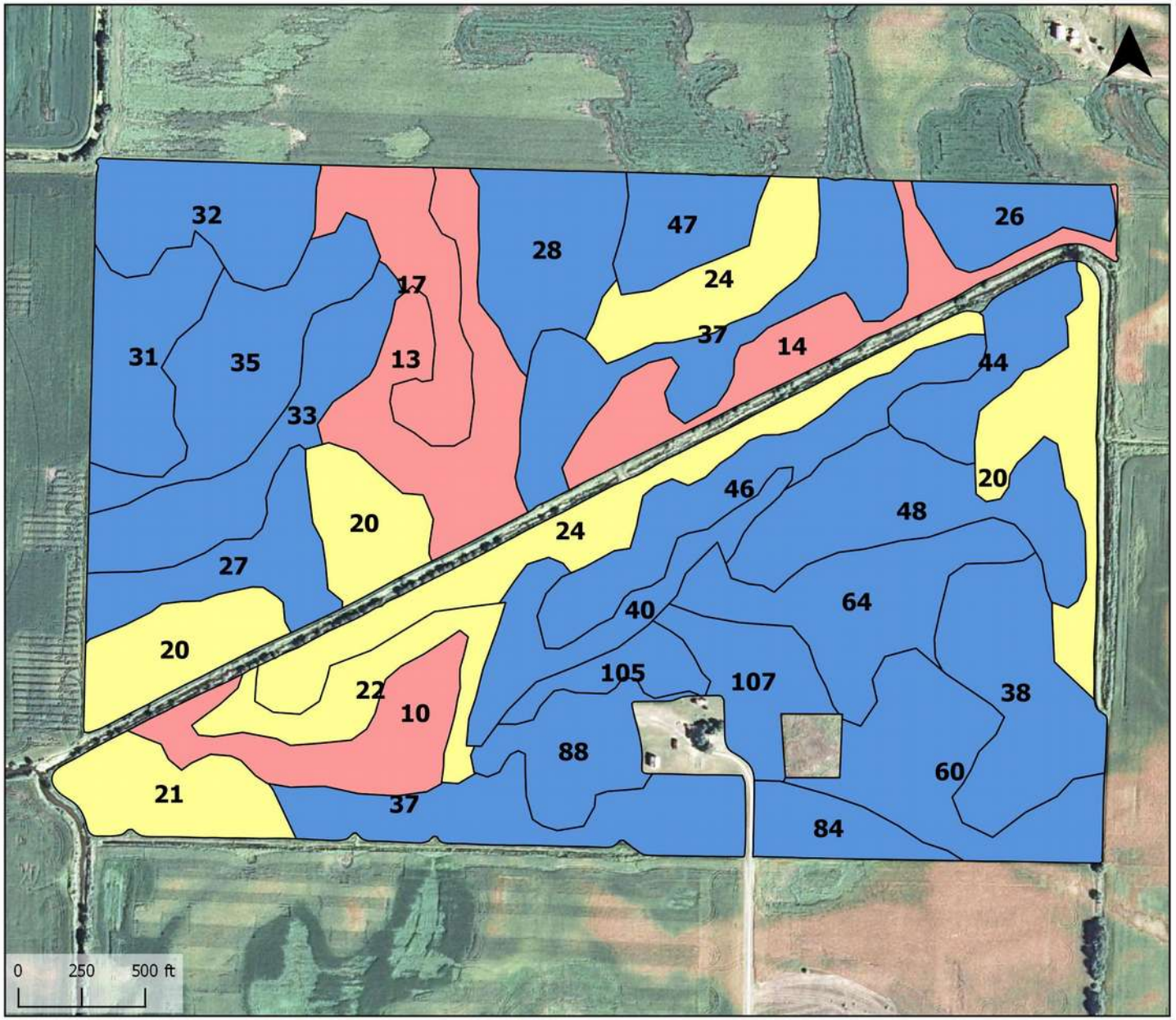

P1 (Bray) soil test 2018S

- 1 - 19
- 19 - 25
- 25 - 300

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Grower: Profitable operation.	Field: Smart South; 2018F

Corn Yield 2018

- 5.0 - 46.8
- 46.8 - 128.7
- 128.7 - 171.9
- 171.9 - 192.8
- 192.8 - 205.4
- 205.4 - 214.7
- 214.7 - 222.5
- 222.5 - 229.6
- 229.6 - 237.0
- 237.0 - 246.6
- 246.6 - 399.9

Average yield 203 Bu.

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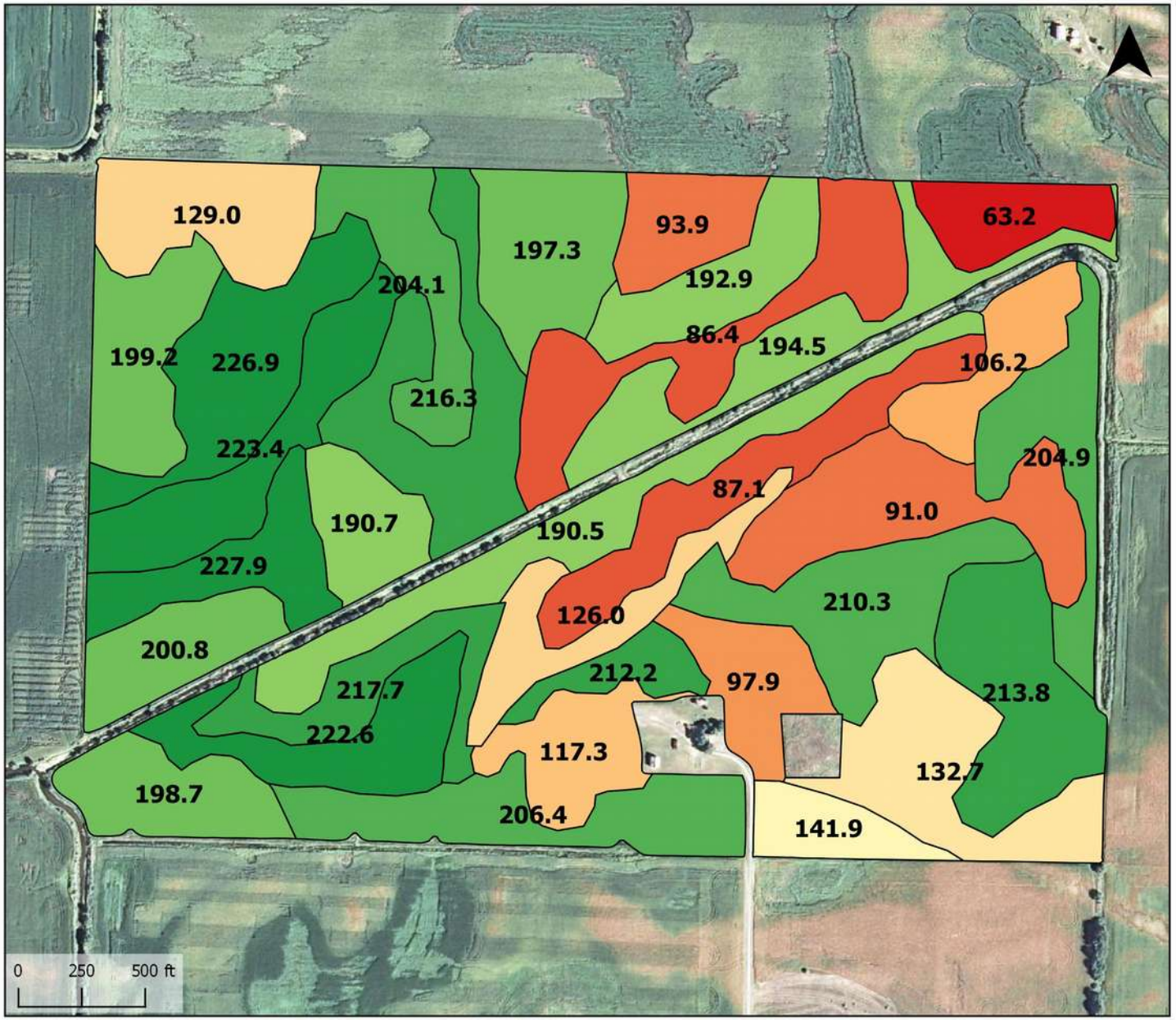
IFarmIS

Grower: Profitable operation.	Field: Smart South; 2018F



Zone Average YIeld 2018

- 63.1850 - 71.4183
- 71.4183 - 79.6516
- 79.6516 - 87.8848
- 87.8848 - 96.1181
- 96.1181 - 104.3514
- 104.3514 - 112.5847
- 112.5847 - 120.8179
- 120.8179 - 129.0512
- 129.0512 - 137.2845
- 137.2845 - 145.5178
- 145.5178 - 153.7511
- 153.7511 - 161.9843
- 161.9843 - 170.2176
- 170.2176 - 178.4509
- 178.4509 - 186.6842
- 186.6842 - 194.9175
- 194.9175 - 203.1507
- 203.1507 - 211.3840
- 211.3840 - 219.6173
- 219.6173 - 227.8506

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Fertilizer “Philosophies”

- Flat rate application
- Removal by yield by field
- Removal by yield monitor
- Put what is needed where by zone, yield goal, removal and soil test level

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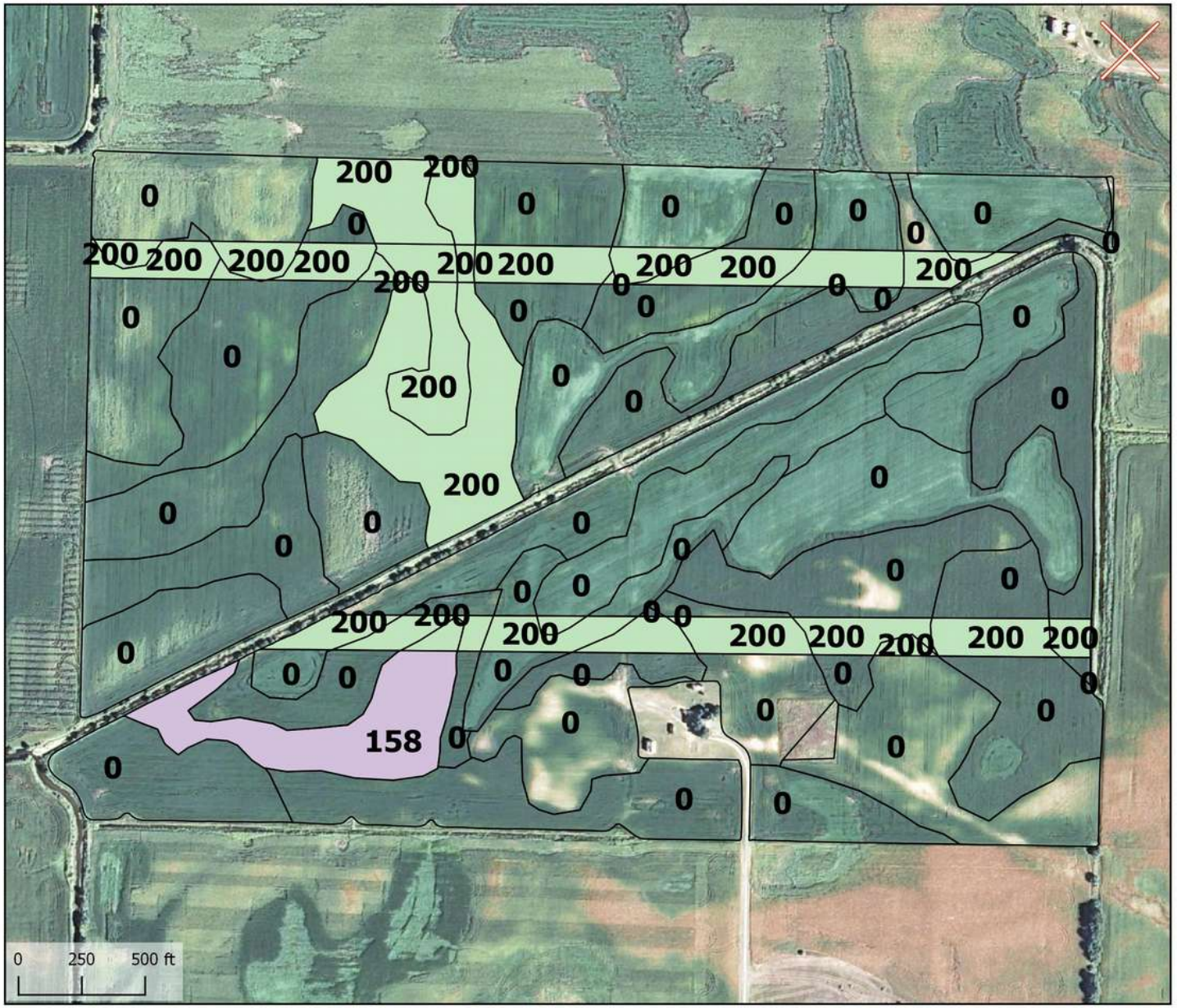
Grower: Profitable Operation	Field: Smart South; 2018F



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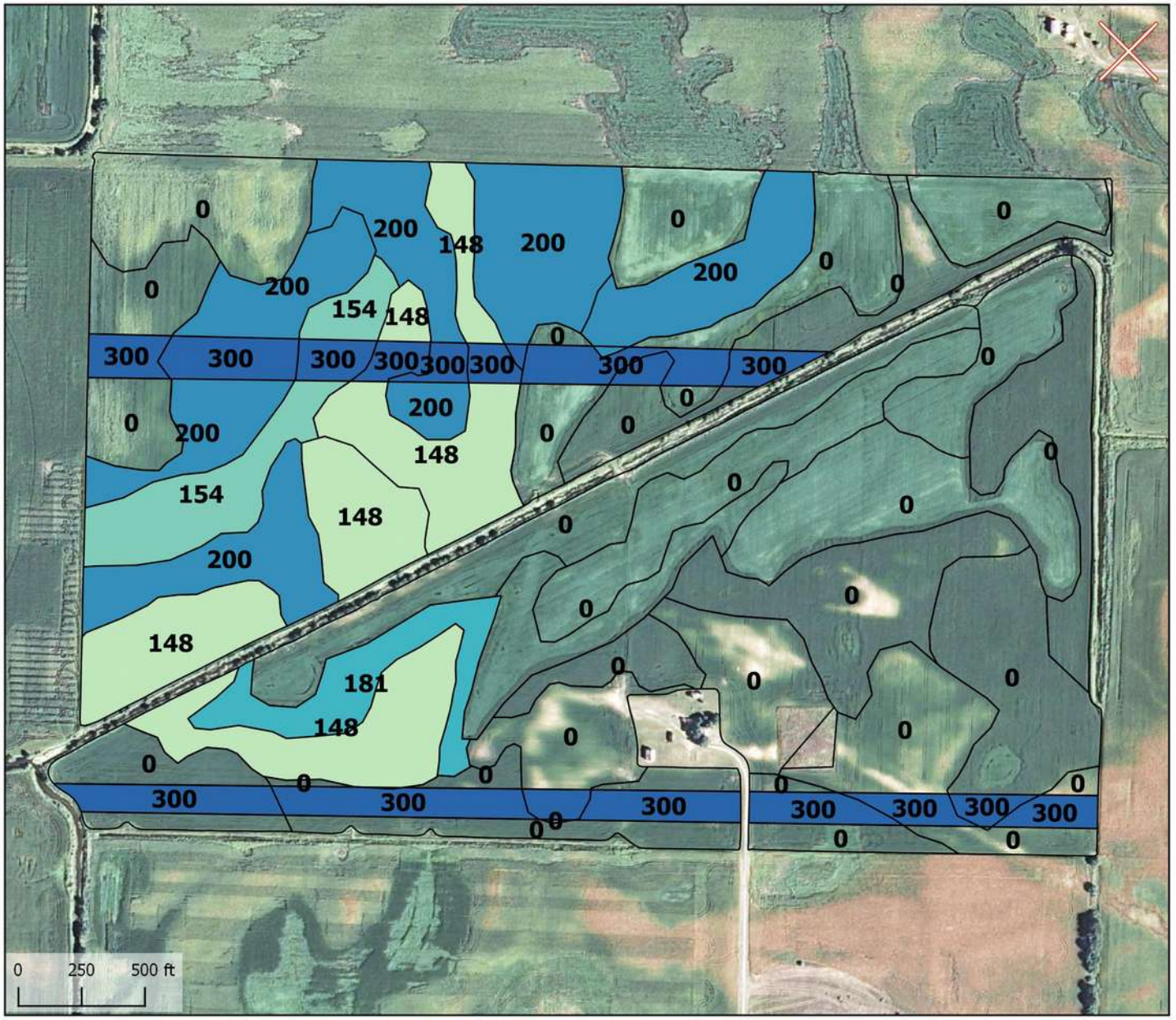
Grower: Profitable Operation	Field: Smart South; 2018F



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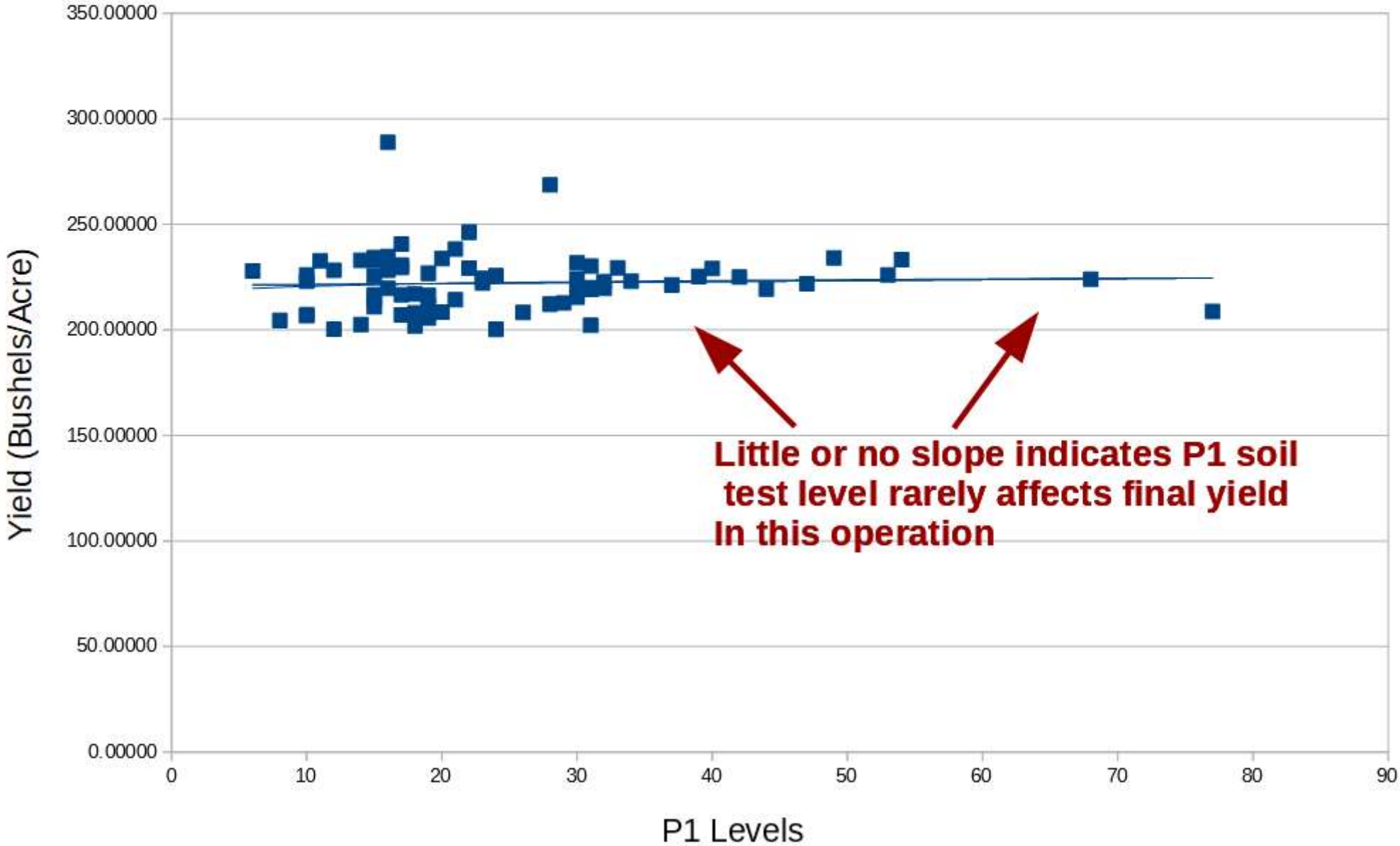
Economics of Fertilizer Philosophies

Method	Tons Dap	Tons Potash	Application Charges	Net Cost $
Flat 150 Dap, 100 Potash	17.6	11.75	1410	15658.50
By Removal for 203 BU. Corn	18.15	10.34	1410	15404.50
By removal by Zone Yield	14.47	8.74	2232.50	13579.70
Where needed by zone, soil test, yield goal, removal	2.37	7.05	2232.5	6248.75

Dap at $552, Potash at $384, Vrt Spreading at $9.50 and SRT Spreading at $6.00

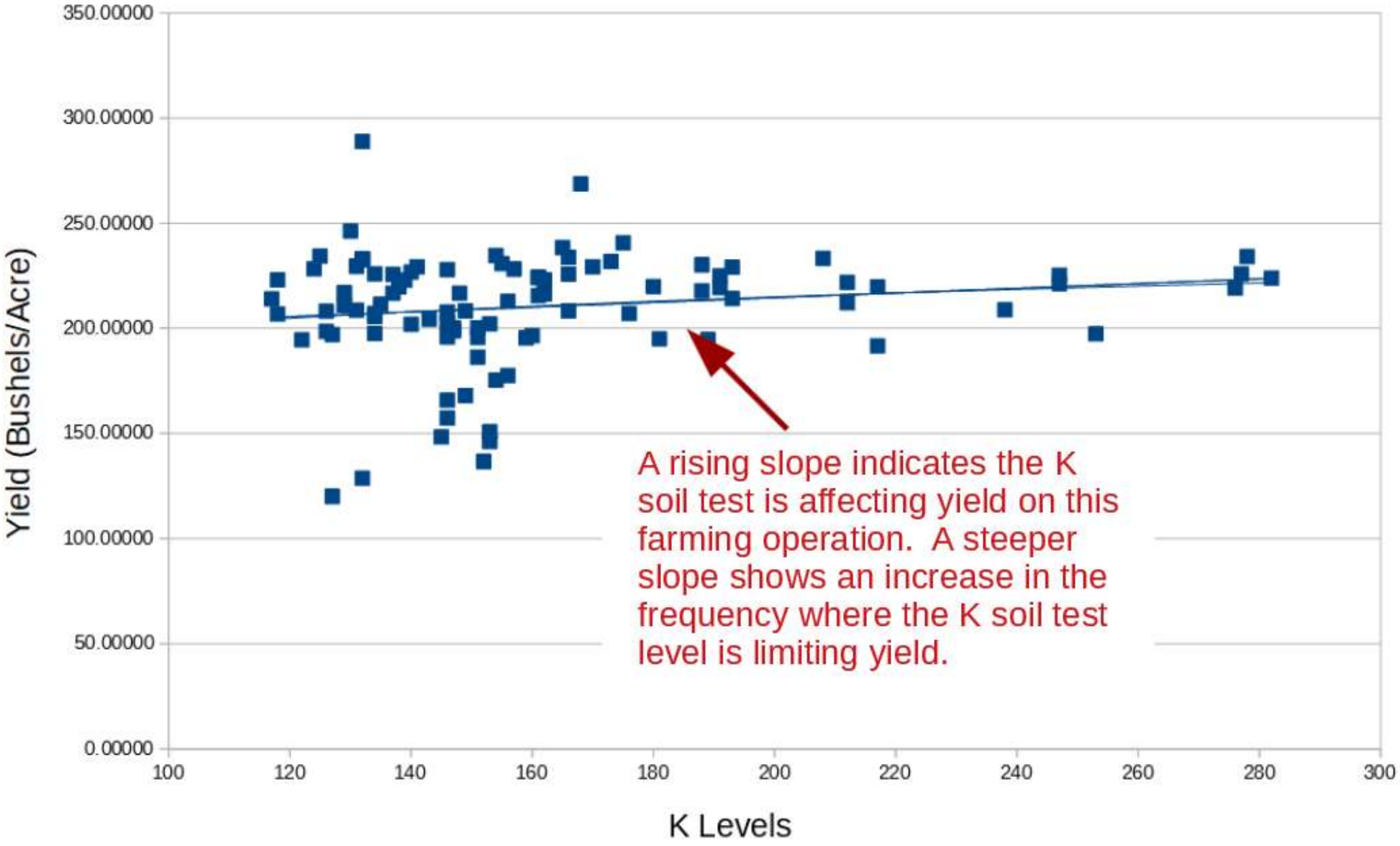
IFarmIS Client Corn 2017

Yield by P1 phosphate soil test

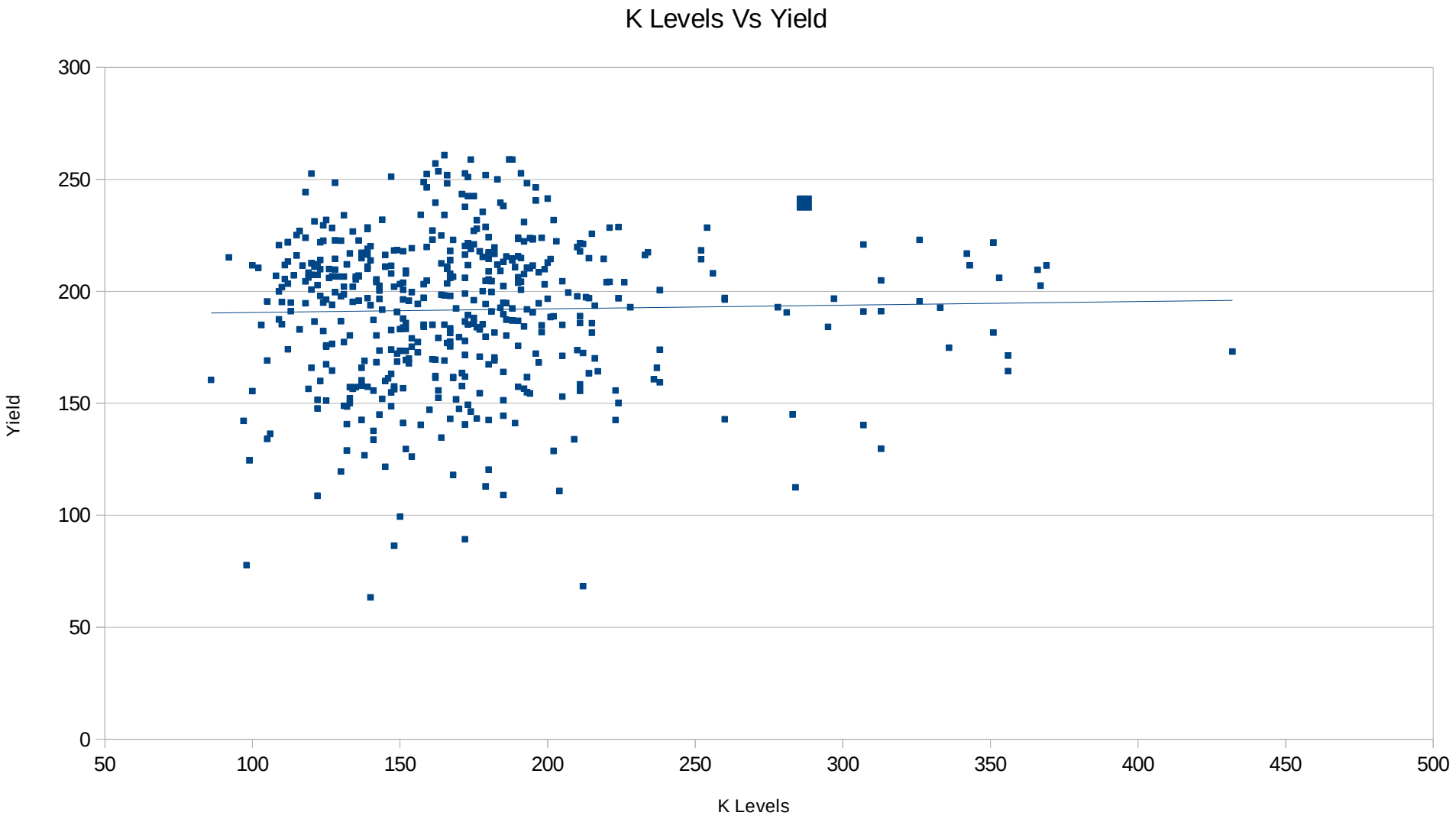


IFarmIS Client Corn 2017

Yield by K soil test

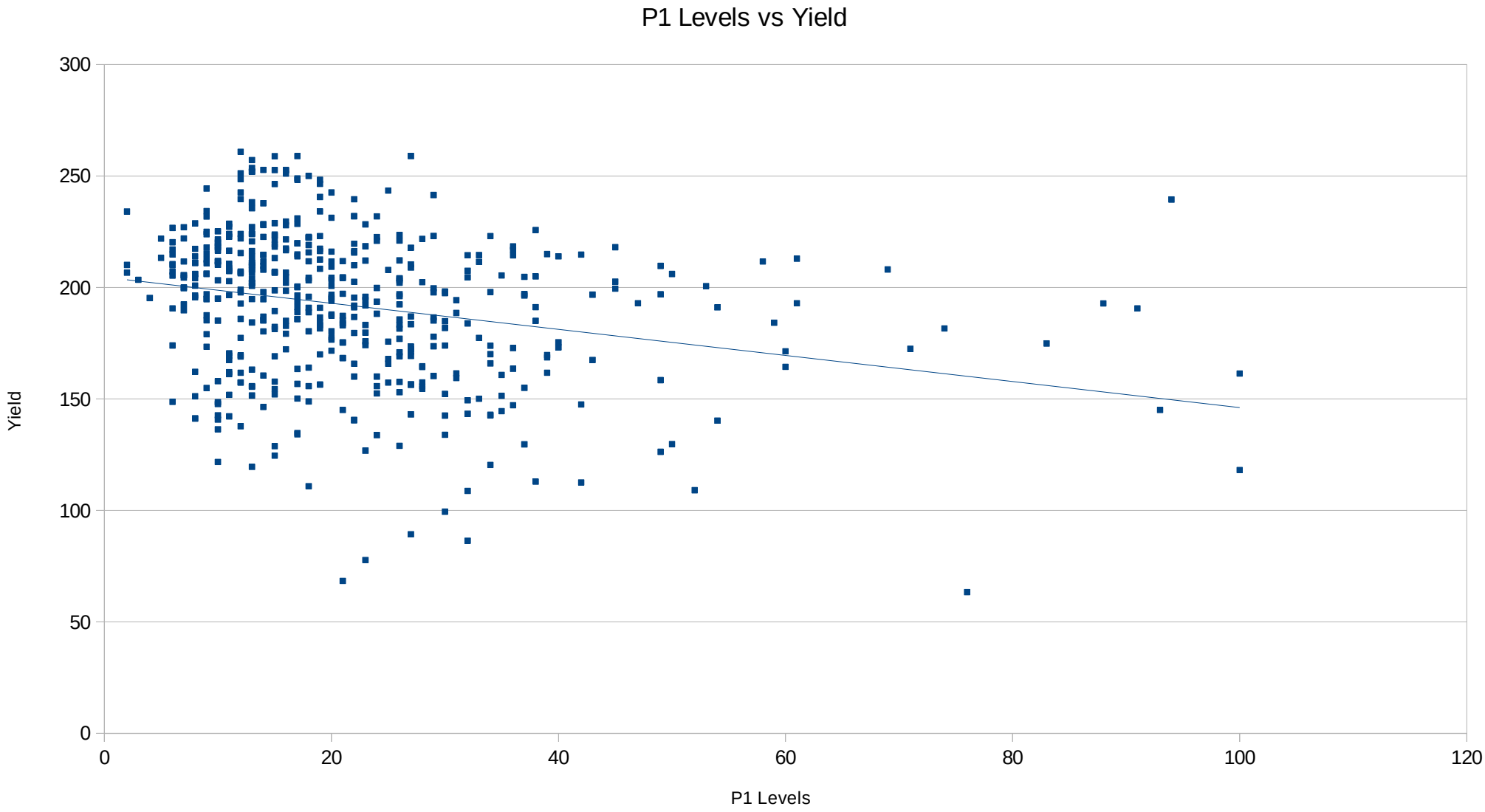


Yield by soil test level



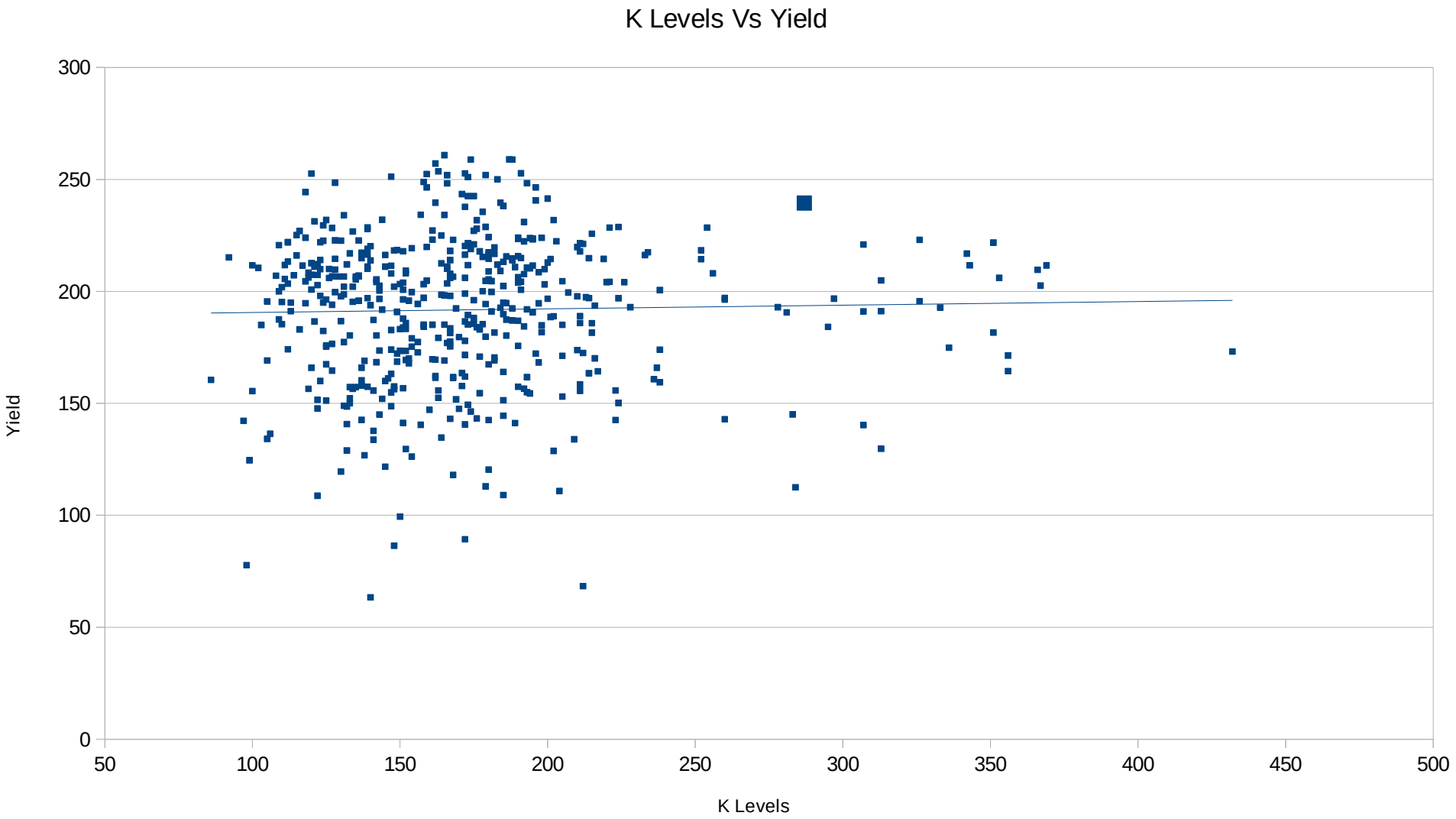
2018 Corn

Yield by soil test level



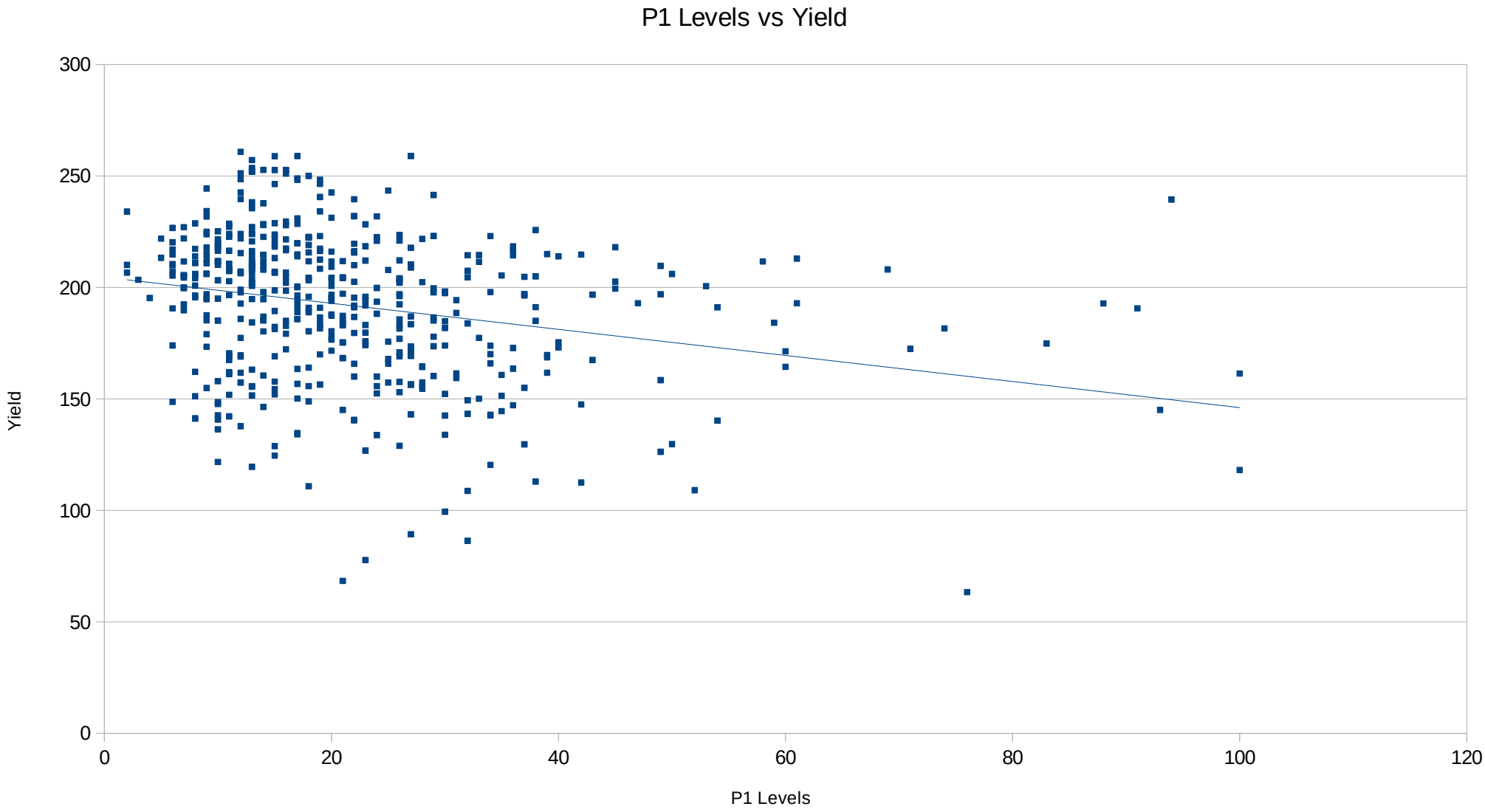
2018 Corn

Yield by soil test level



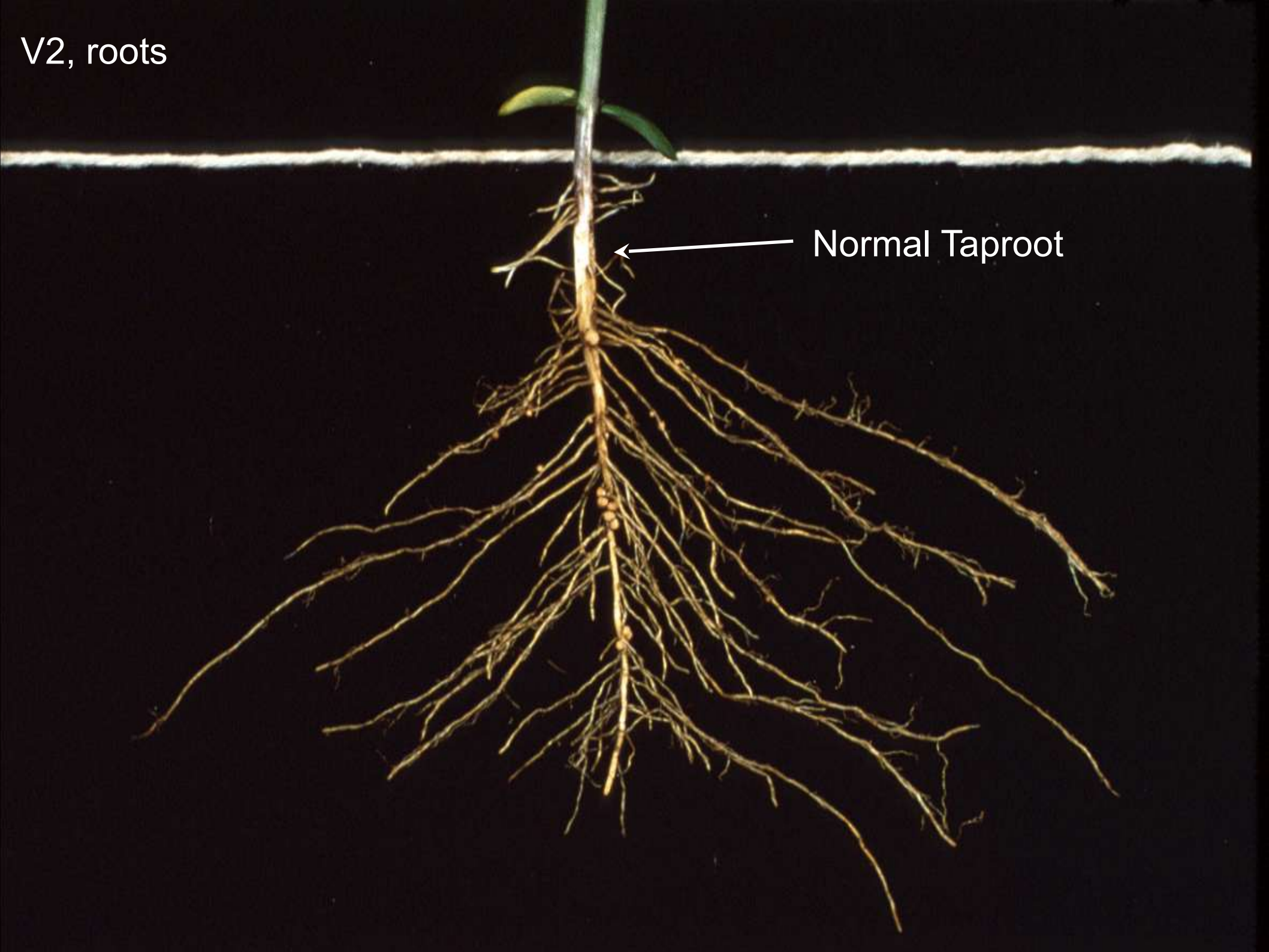
2018 Corn

Yield by soil test level



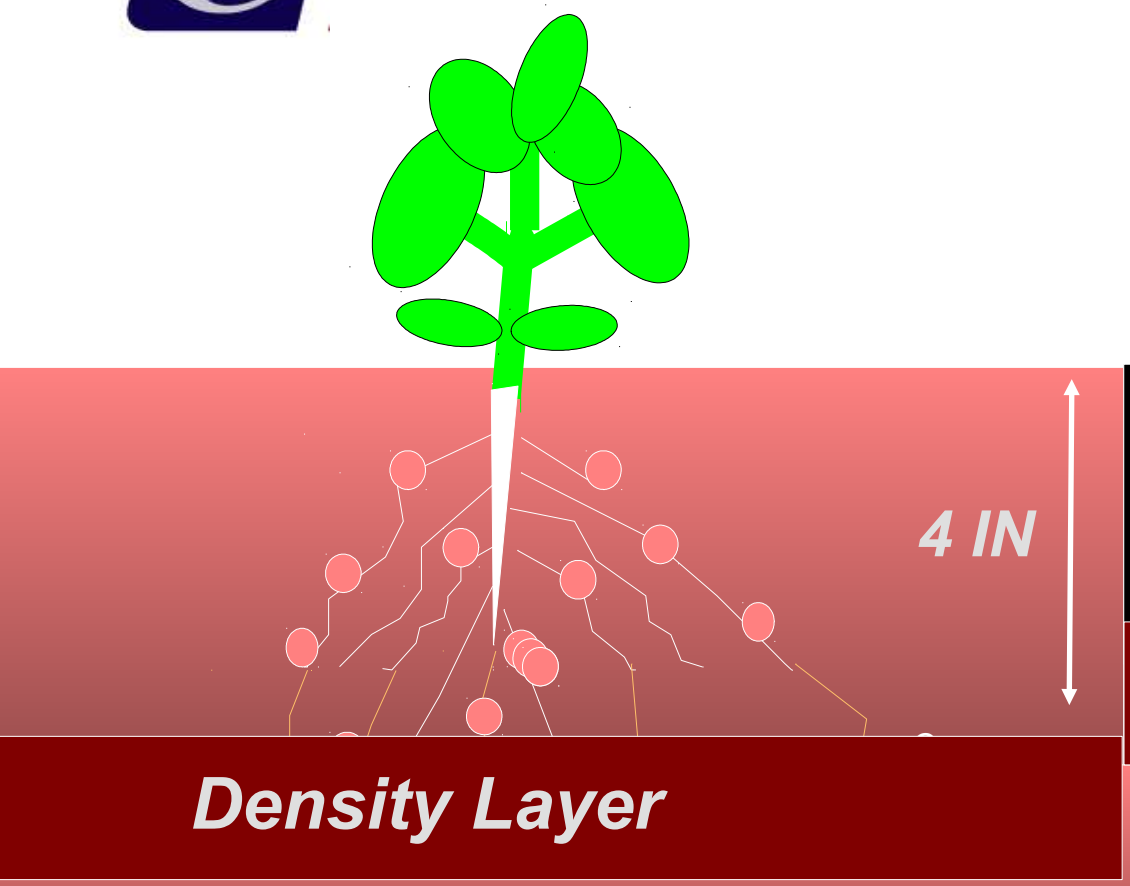
2018 Corn

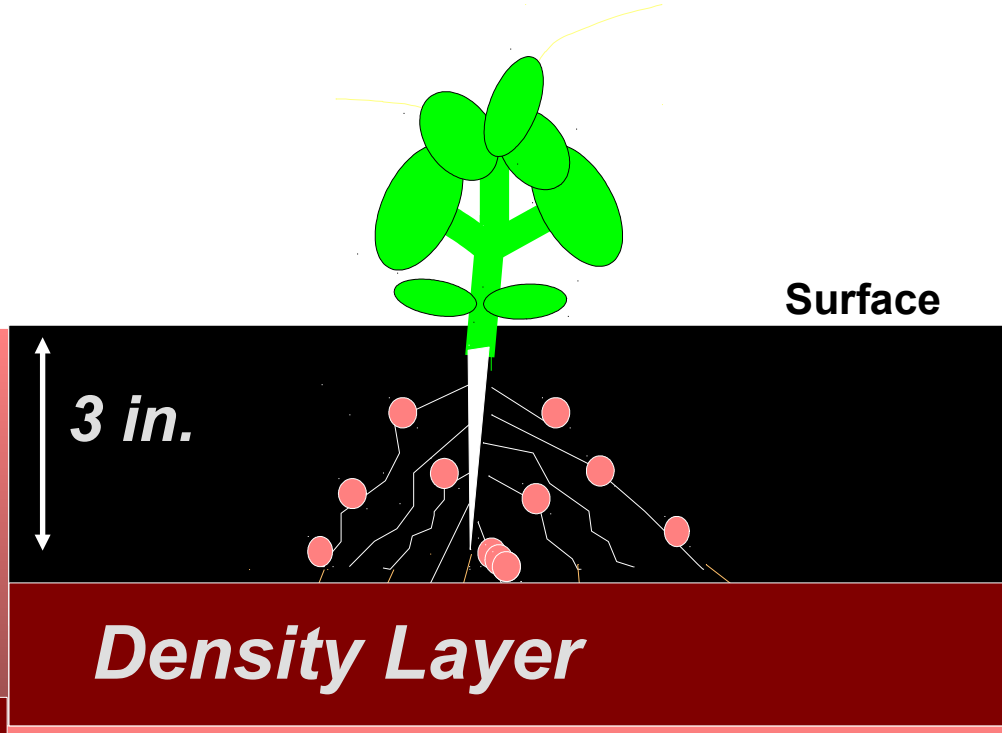
Soybeans – Effective root mass


V2, roots
Normal Taproot


Abnormal Taproot

Effective Rooting Mass





Every Extra inches cm of ERM makes an additional 330,000 lbs/a of soil and resources available to the crop.