



Farmer Invented. Farmer Tested. Farmer Proven.®

WHAT I'VE LEARNED FROM 40 YEARS OF INDEPENDENT ON-FARM RESEARCH

Marion Calmer in 1974
Hill Dropping in 40" Rows
3 Plants every 24" = 20K

Farming on my
own for 50 years



SUCCESSFUL FARMING[®]

FOR FAMILIES THAT MAKE FARMING THEIR BUSINESS™

BUSINESS

Side-by-side:
**WATER TEST
KITS** ... 16

PRODUCTION

Precision
hoeing ... 36

Cover story:
**Farmer-run
research** ... 38

FAMILY

'Play or pay'
health care ... 51



ON THE COVER: Alpha, Illinois, research-minded farmers are: Marion Calmer (green shirt), Gary Kness (front), Jeff Newman (red shirt). In background: Virgil Calmer, Kevin Colburn, Joe Kness. See page 38. Cover photo: Russ Munn

40 Years
Independent
†
On-Farm
Research

Farm Journal

The Magazine of American Agriculture

January 1996



COVER STORY

**Combine conquers
narrow-row corn...16**

MARKETS

How high can corn go?...13



PRODUCTION

**The economics of
site-specific farming...18**

NEW SECTION!

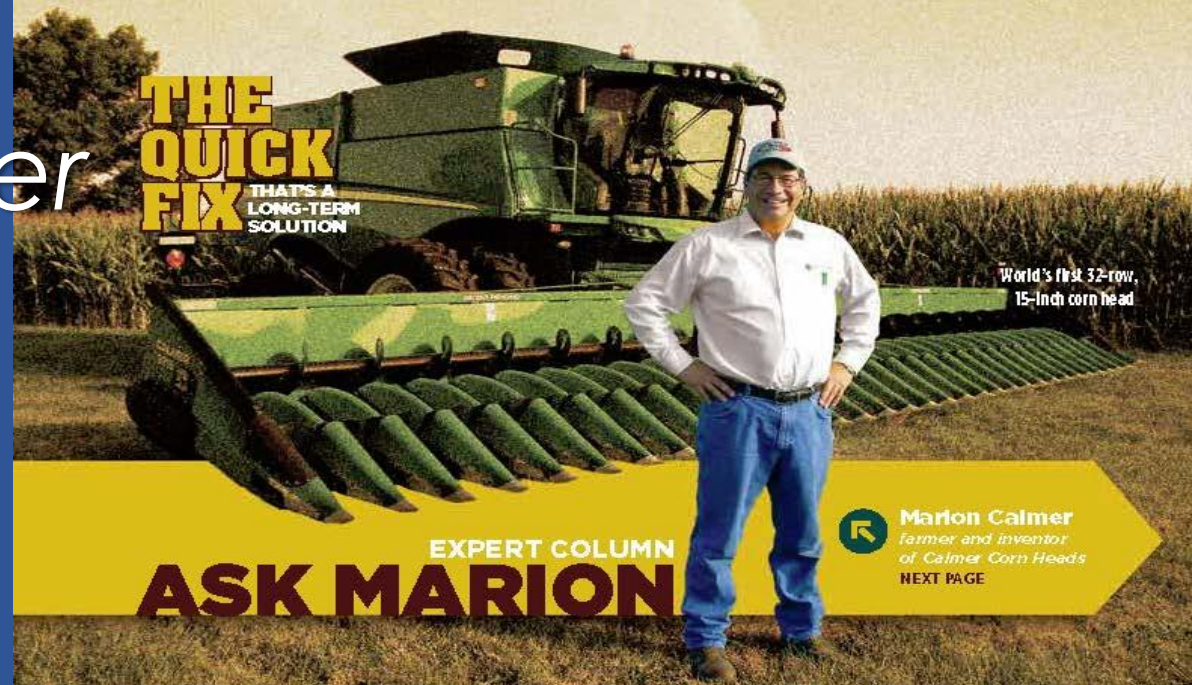
Working Family debuts in this issue...32

3A
BASIC
0001

Inventing for
30 years
Now Have
39 Patents

Founded Calmer
Corn Heads
20 Years ago

The PROGRESSIVE FARMER



THE QUICK FIX
THAT'S A LONG-TERM SOLUTION

World's first 32-row, 15-inch corn head

EXPERT COLUMN
ASK MARION

 **Marion Calmer**
Farmer and inventor
of Calmer Corn Heads
NEXT PAGE

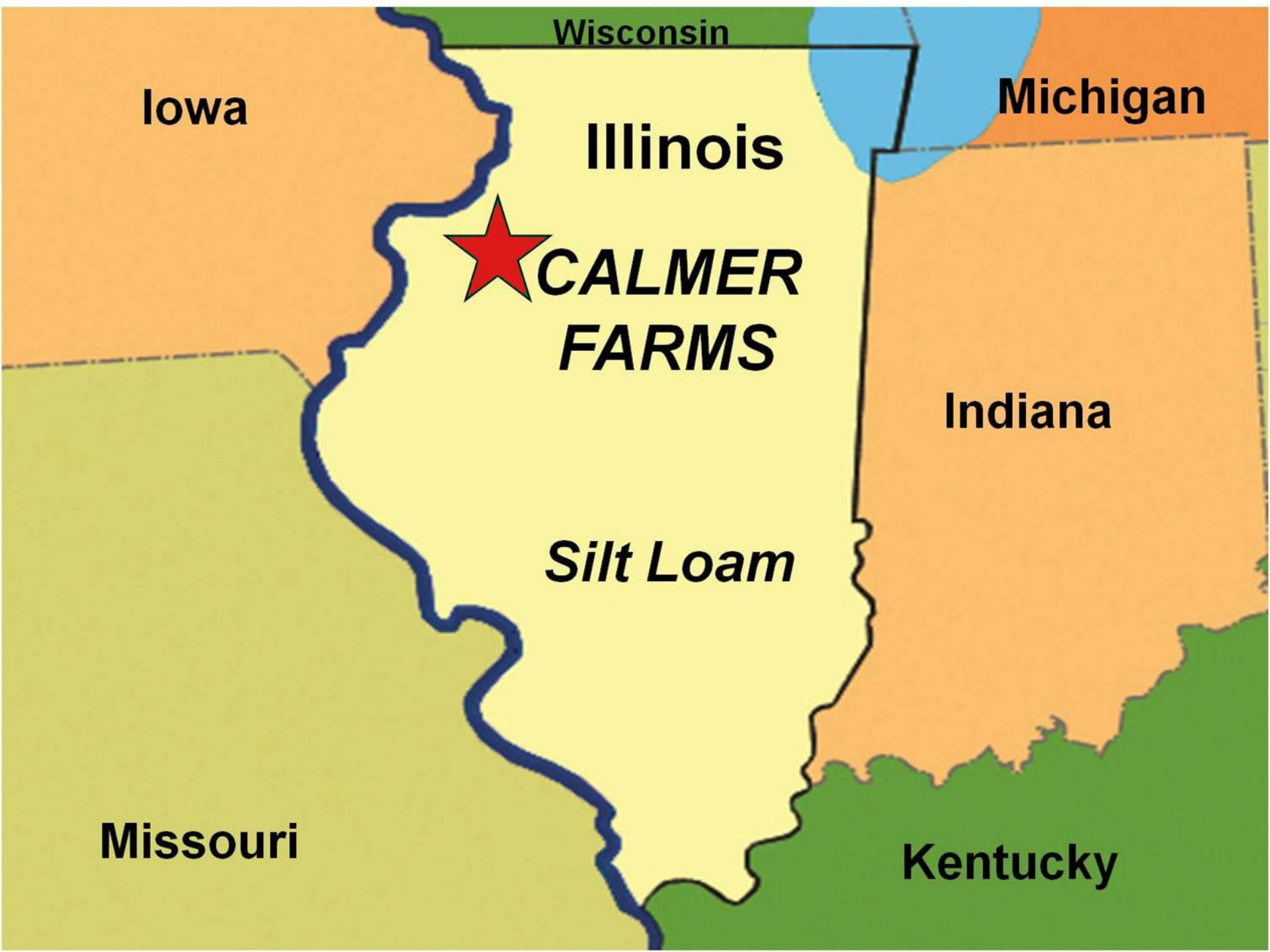


 **Calmer Corn Heads**
**WE KNOW IT WORKS
BECAUSE WE USE IT ON
OUR OWN FARMS**

2021

Oxford Township
Road Commissioner
Since 2021





Wisconsin

Iowa

Michigan

Illinois

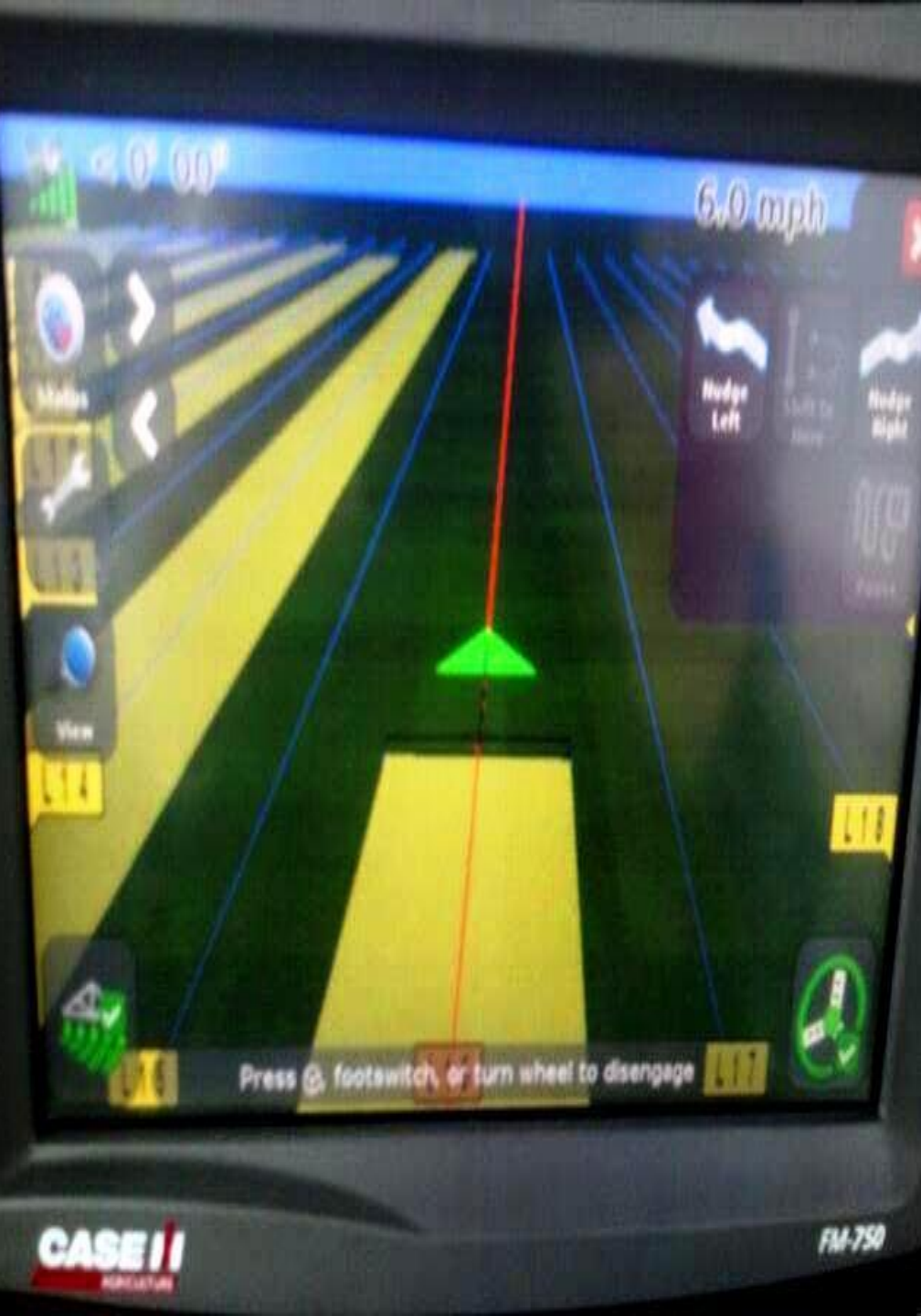
 **CALMER
FARMS**

Indiana

Silt Loam

Missouri

Kentucky

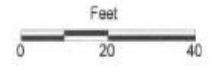
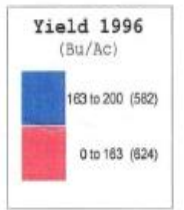
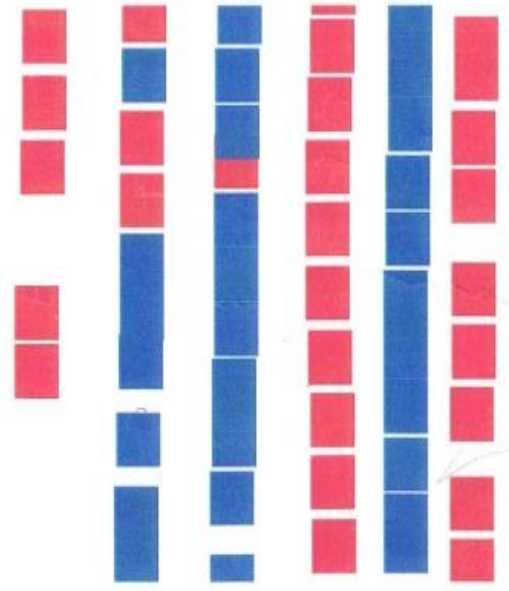


AFS

CASE IH



30" 15" 15" 30" 15" 30"



Calmar: F4
 4/6/96
 Crop: Corn - *Stine 9701*
 Average Yield: 156.6
 Average Moisture: 25.9



Corn Research

- Row Spacing
- Population
- Nitrogen
- P+K
- Residue Management



Farmer Invented. Farmer Tested. Farmer Proven:

WHAT I'VE LEARNED IN 40 YEARS OF INDEPENDENT ON-FARM RESEARCH




www.CalmerCornHeads.com/in-the-field

*In the beginning,
corn row spacing was
determined by the
width of the rear end
of a...*



45" Rows @ 32K





15"

ROWS

@

32K

Solid Seeded Corn Will:

- Maximize Yield
- Maximize Weed Control
- Maximize Erosion Control
- Maximize Production of OM

Corn Row Spacing Study

2014

221 bu



30"

233 bu



\$60

15"

\$5 corn



Mistakes I've Made

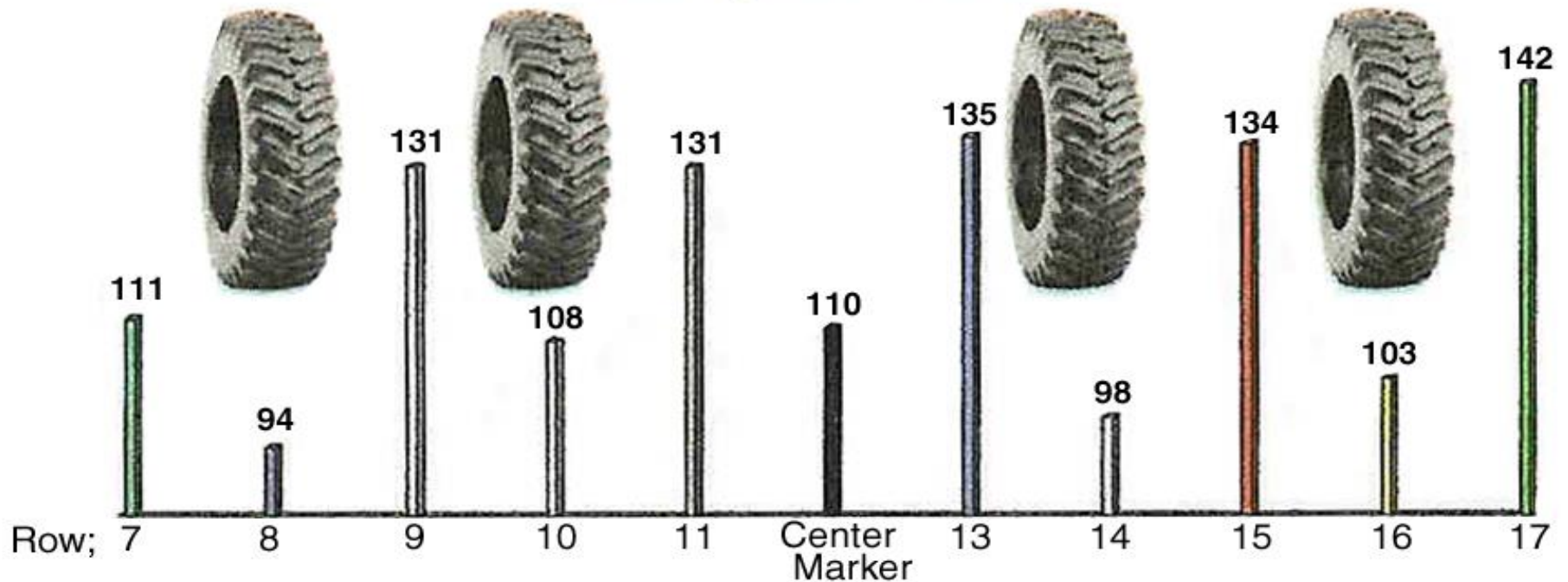
Mistake #1

Planting into compacted tire tracks



Tire Track Impact On Corn Yields

When the 15" Split Row is Planted into the CENTER of an 18.4 x 46 tire.
Planting Date - 05-06-95

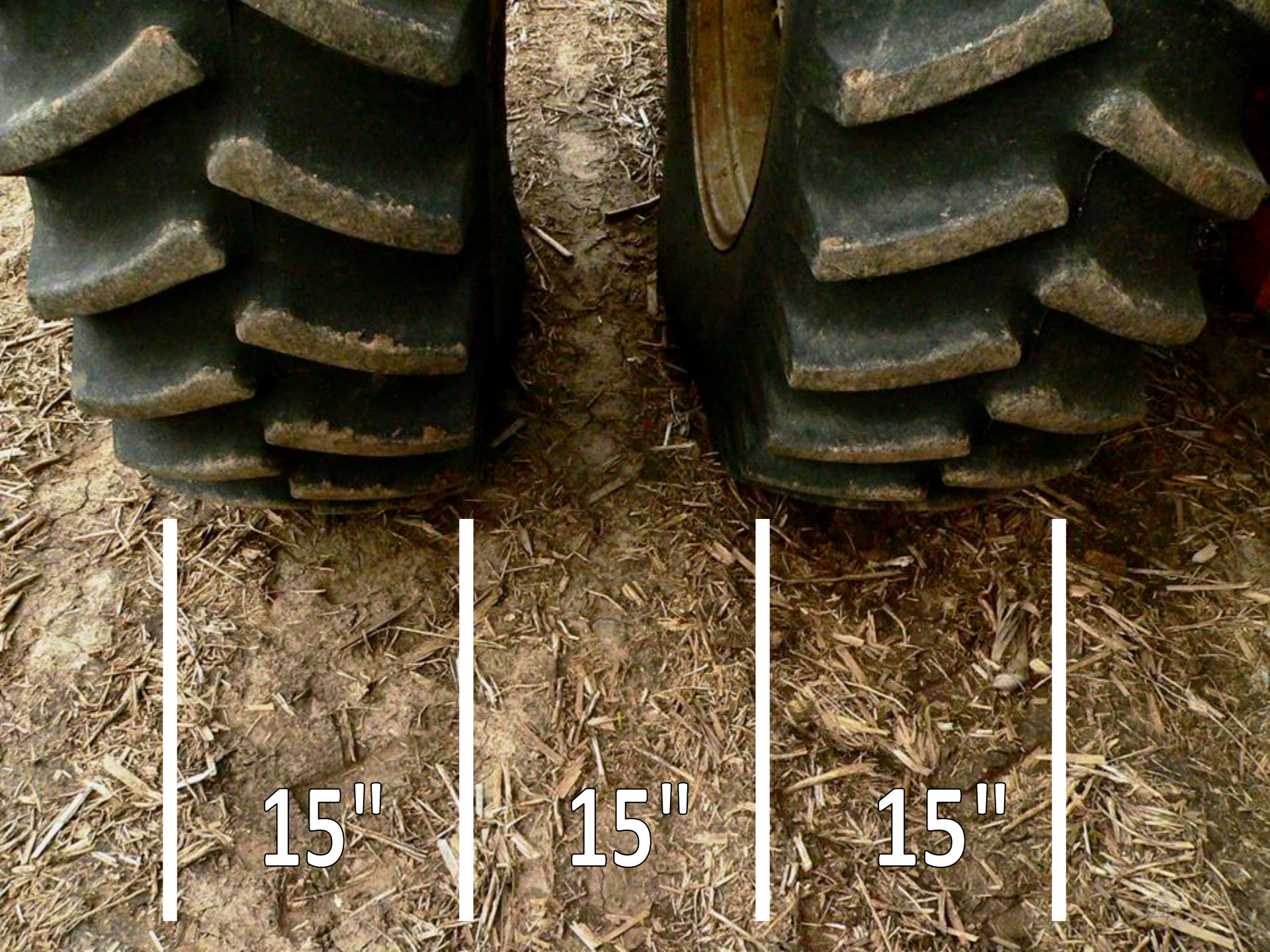


Avg Yield of Entire Planting width = 125
Avg Yield Without Mrkers & Tire Rows = 131
Avg Yield Without Tire Rows = 130

A red tractor is shown from a rear-three-quarter view, parked on a gravel surface. The tractor has four large, tall, narrow tires with a deep, V-shaped tread pattern. The tractor's body is primarily red with some black components. The background shows a clear blue sky and some distant trees and a fence.

Mistake #2

Buying tall skinny tires



15"

15"

15"



150 # of N in fall





75 # N w/Chemicals



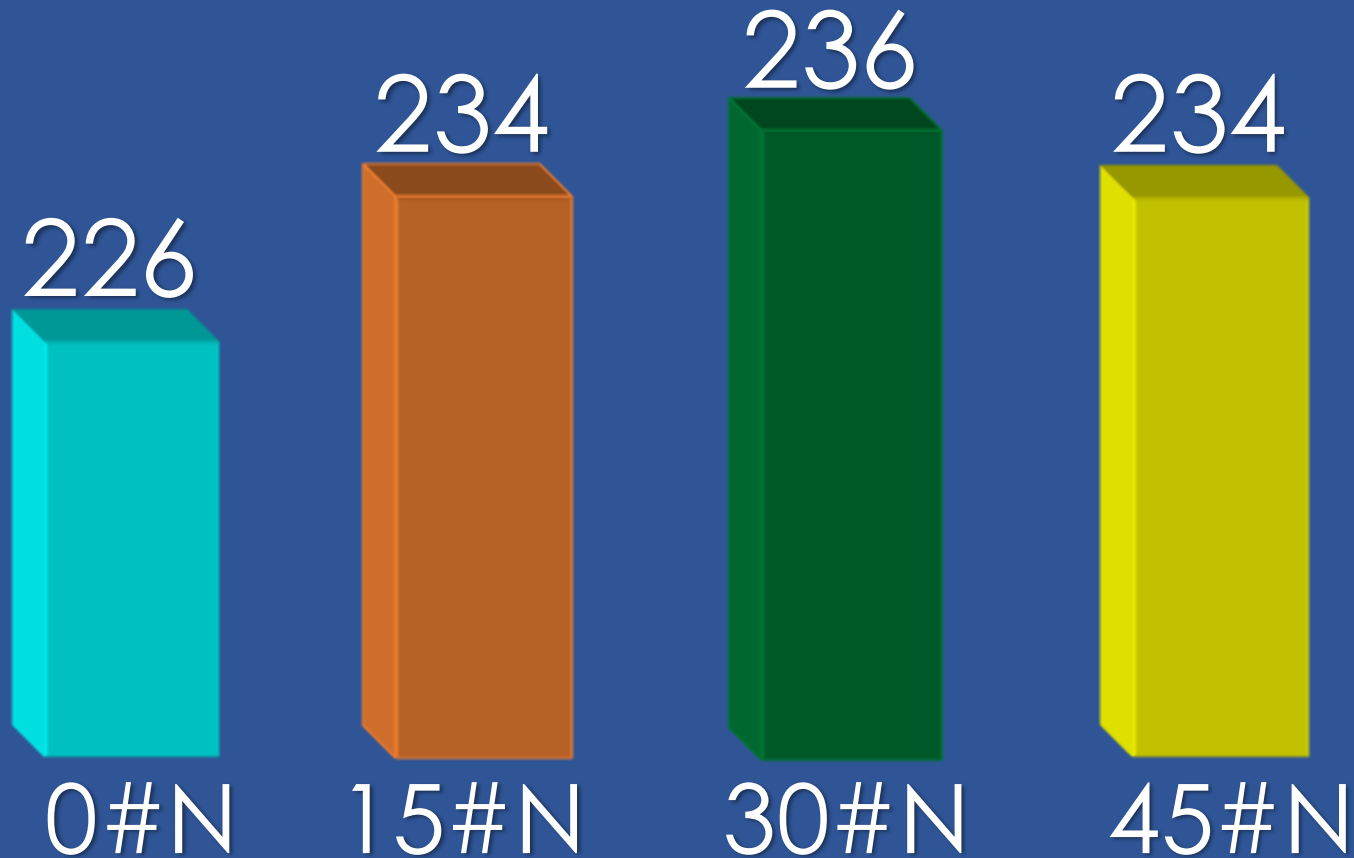
75# N Sidedress 300# Total

**\$1 spent on N
grows \$4 worth of
corn**



Starter N

2009 Corn





**NEW RECORD SET IN 2023: 623 BU/AC
HARVEST POPULATION STOOD AT 48,700
PLANTS PER ACRE**

Plow Down
Phosphorus Moves 1 Inch
Potassium Moves 2
Inches



60' w/
P&K

60' w/o
P&K

60' w/
P&K

60' w/o
P&K

Over 20 years, I **spent \$936** in dry
P&K to grow **\$395** in grain



\$1 worth of P&K only grows approx.
\$.40 back in grain

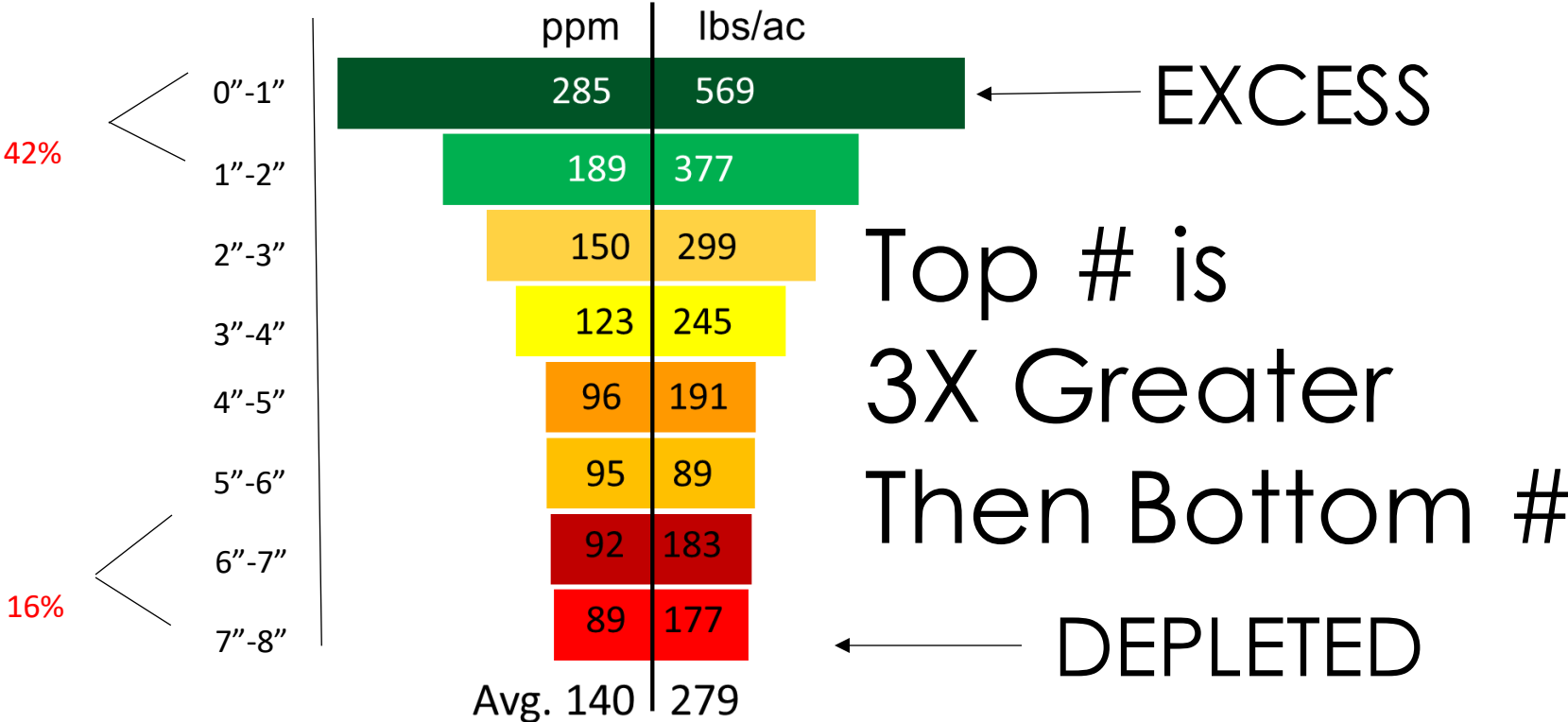
**Calmer
Farms**

**Struggles With
Stratification**

309-629-9000



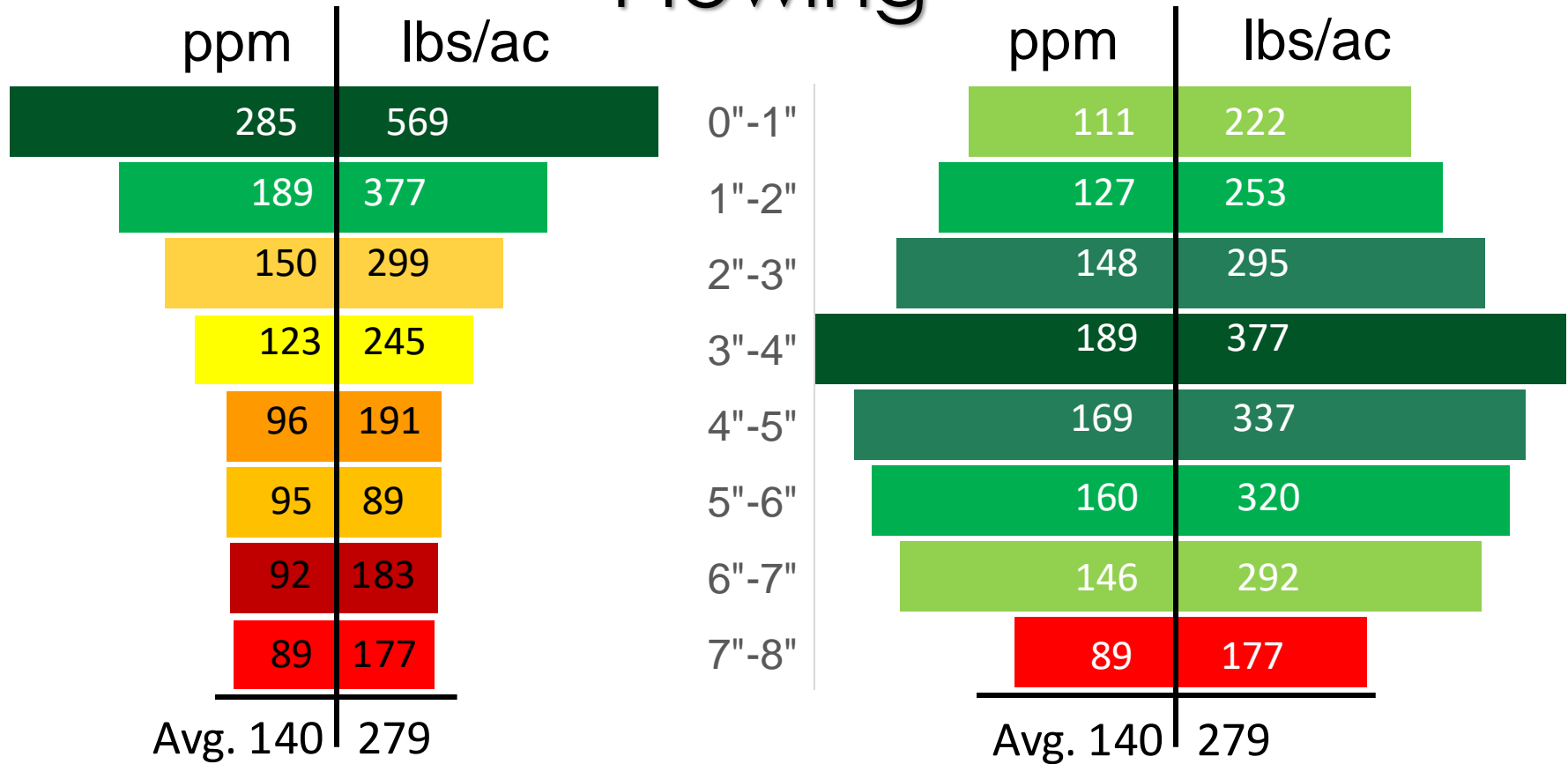
14 Years of Surface-Applied Potassium



In 2021, I
Moldboard Plowed
14 Years/\$1,000 Worth
of Surface-Applied P&K
into the Rootzone on
1.4 Acres.



Potassium Before vs. After Moldboard Plowing



Soybean Yield Advantage to Destratification

Yield



■ P&K Stratified on Surface

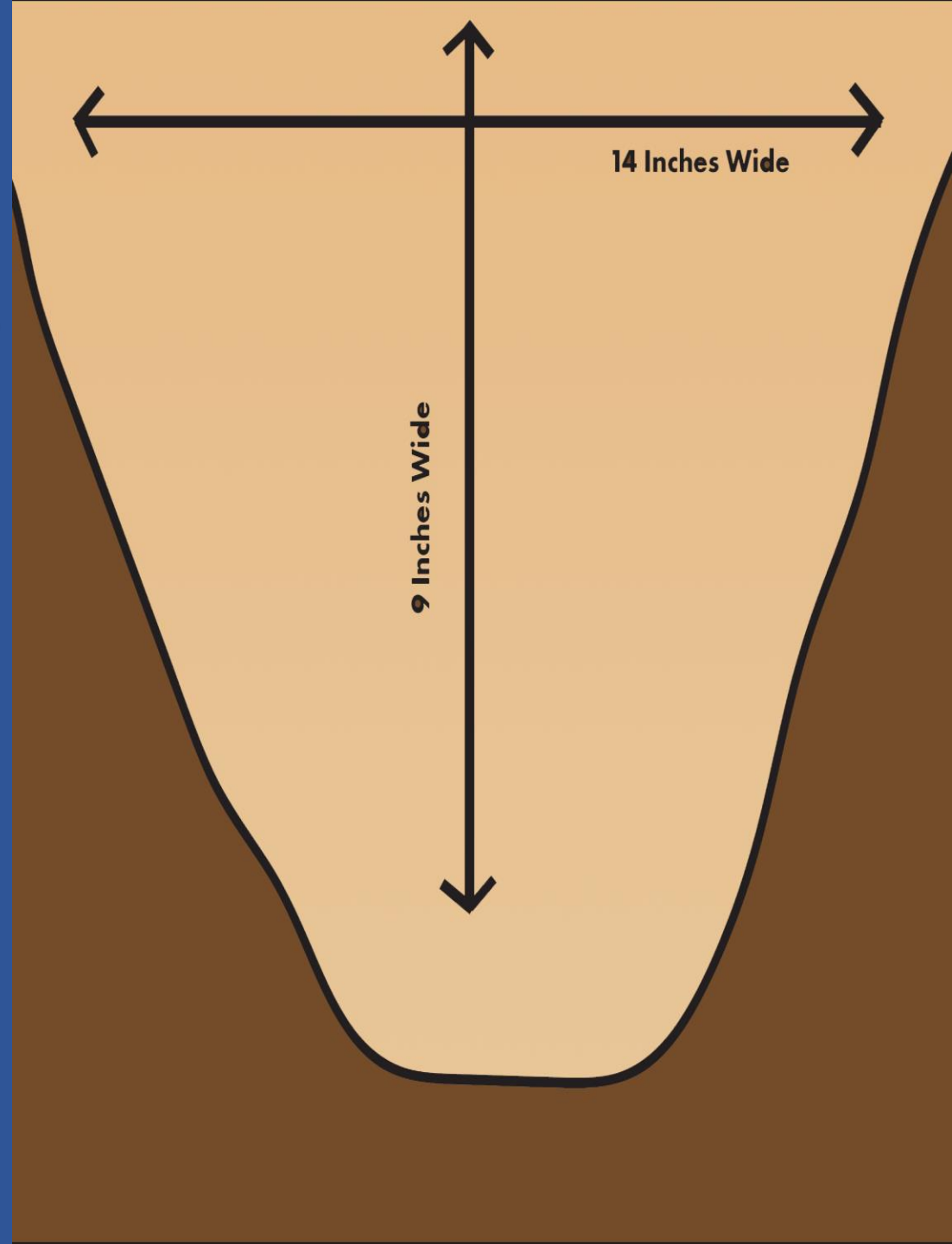
Difference in Plots June 2023





Unrestricted Root Zone

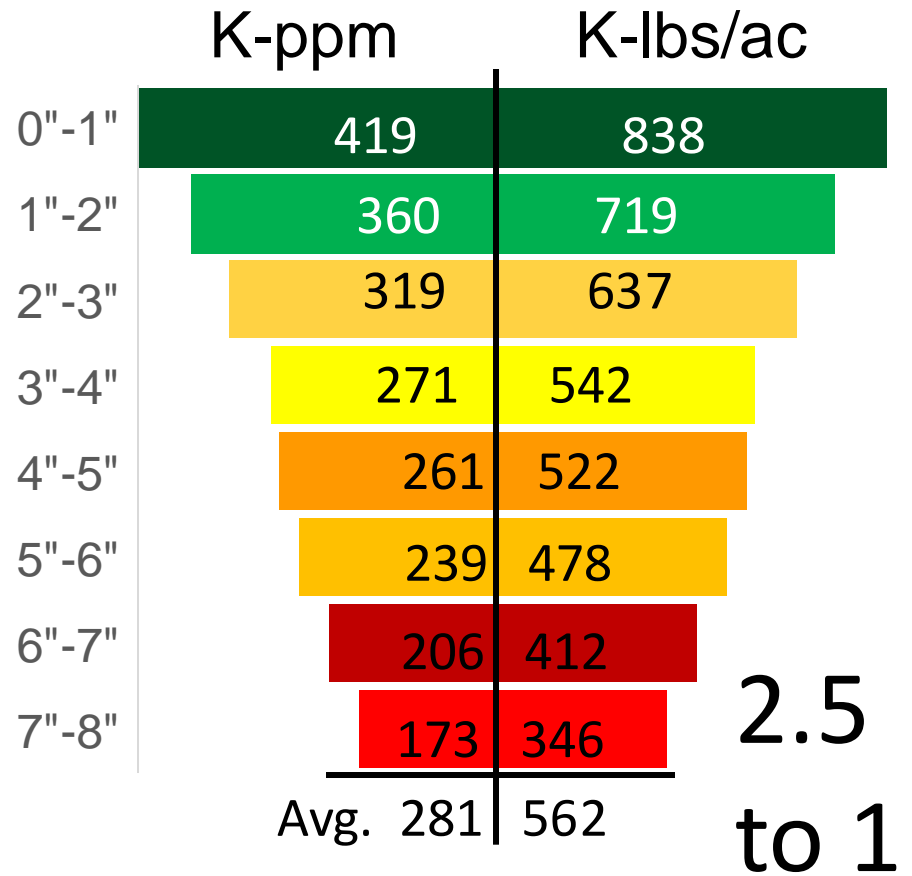
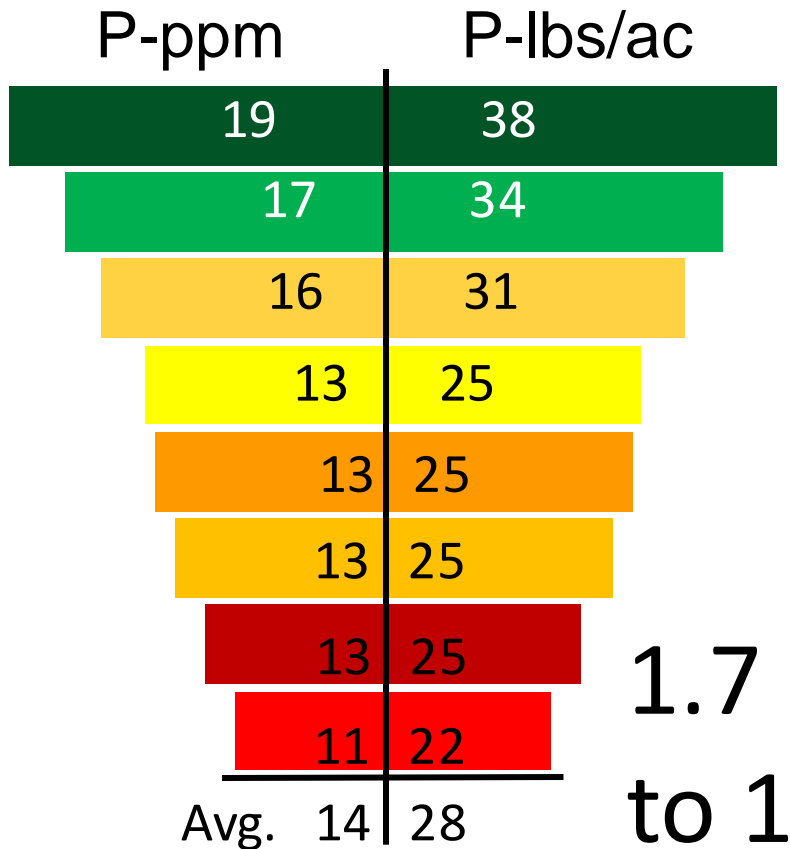
Maximum roots
+Maximum fertility
=Maximum yield



COVER CROPS



Virgin Soil 2022 (Continuous Grass)



A+L

GMS

USI

pH

6.8

6.9

7

P

28 #/ac

38 #/ac

72 #/ac

K

790 #/ac

689 #/ac

730 #/ac

%om

5.2%

6.6%

3.2%

	A+L	GMS	USI
pH	6.8	6.9	7
P	28 #/ac	38 #/ac	72 #/ac
K	790 #/ac	689 #/ac	730 #/ac
%om	5.2%	6.6%	3.2%



Purple Leaves = Phosphorus

Deficiency

Nutrient Deficiencies





pH & Nutrient Availability

Soil Acidity	N%	P%	K%
7.0	100%	100%	100%
6.0	89%	52%	100%
5.5	77%	48%	77%

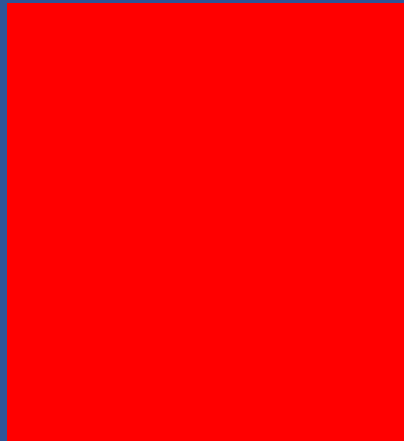






No-Till vs Strip-Till in 30" Soybeans

65 bu/ac



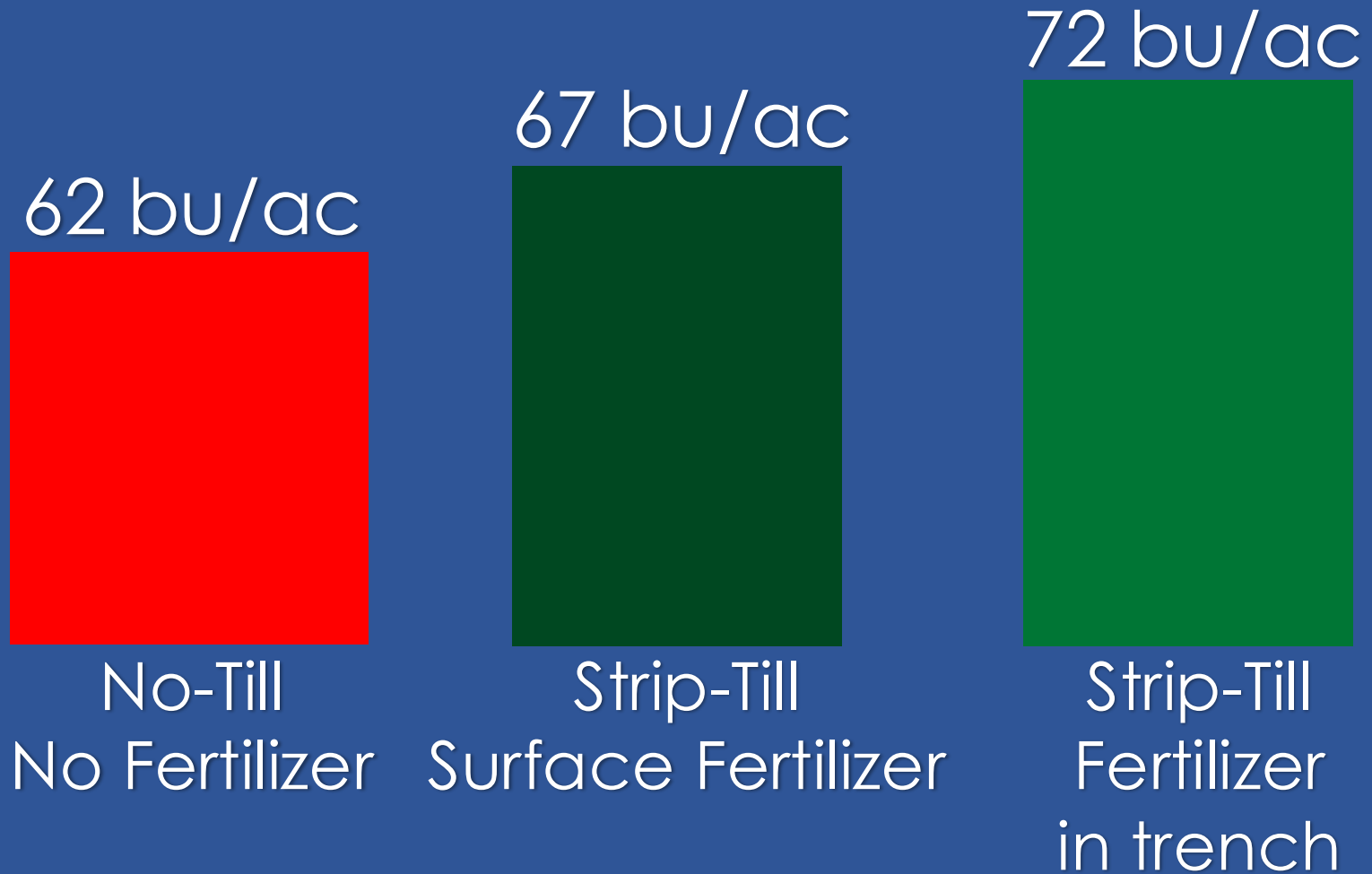
No-Till

67 bu/ac



Strip-Till

Dry Fertilizer Response to Strip-Till in 30" Soybeans







Mattress - *Liability*



MAT - *Asset*



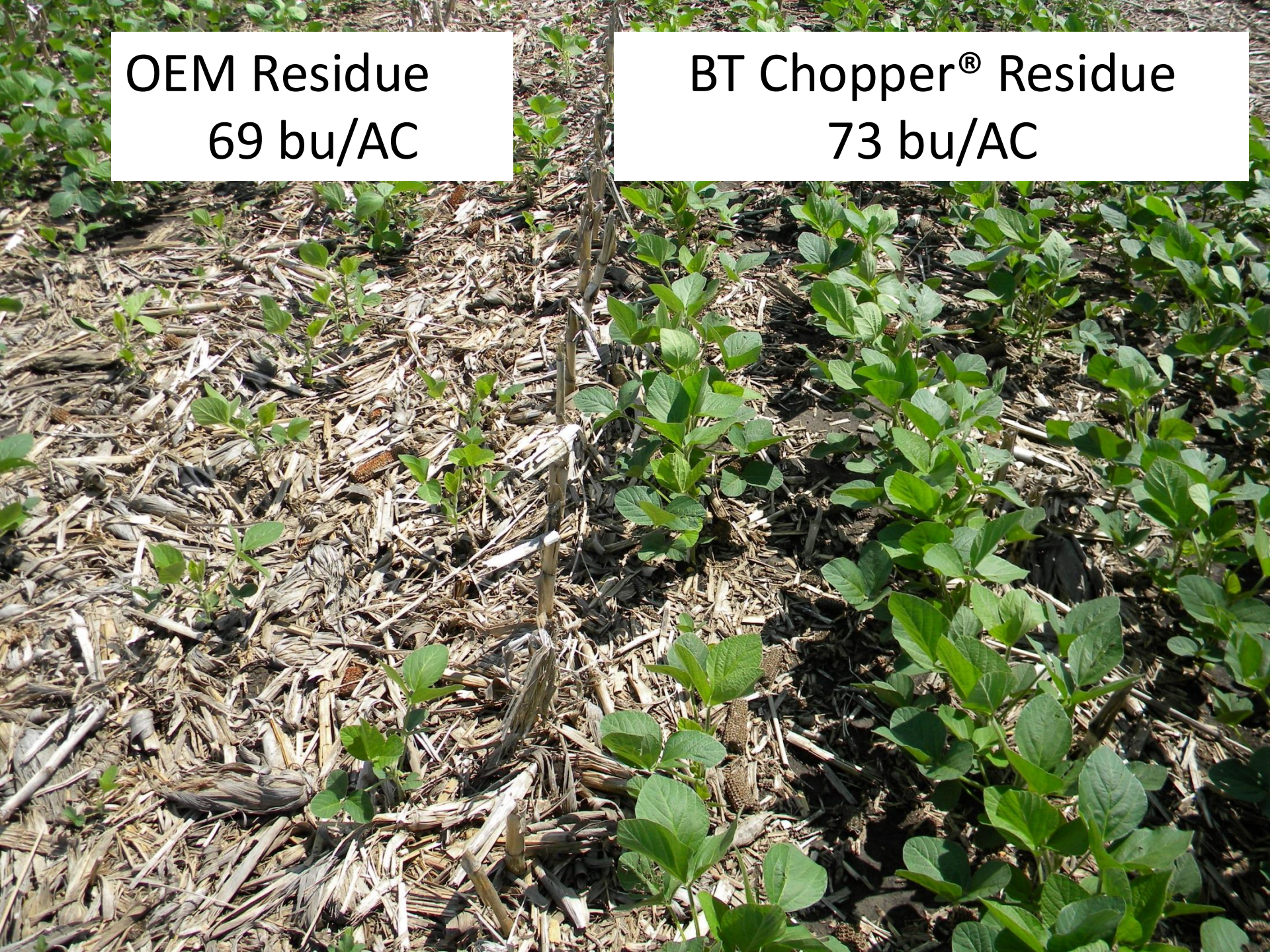
Problem!



Problem!

OEM Residue
69 bu/AC

BT Chopper[®] Residue
73 bu/AC





Start soybean harvest on the
downwind side of the field



Problem

Solution





OEM Residue



BT Chopper Residue



Photo Compliments of PhD student Alison Vogel -
University of Illinois' Department of Crop Physiology

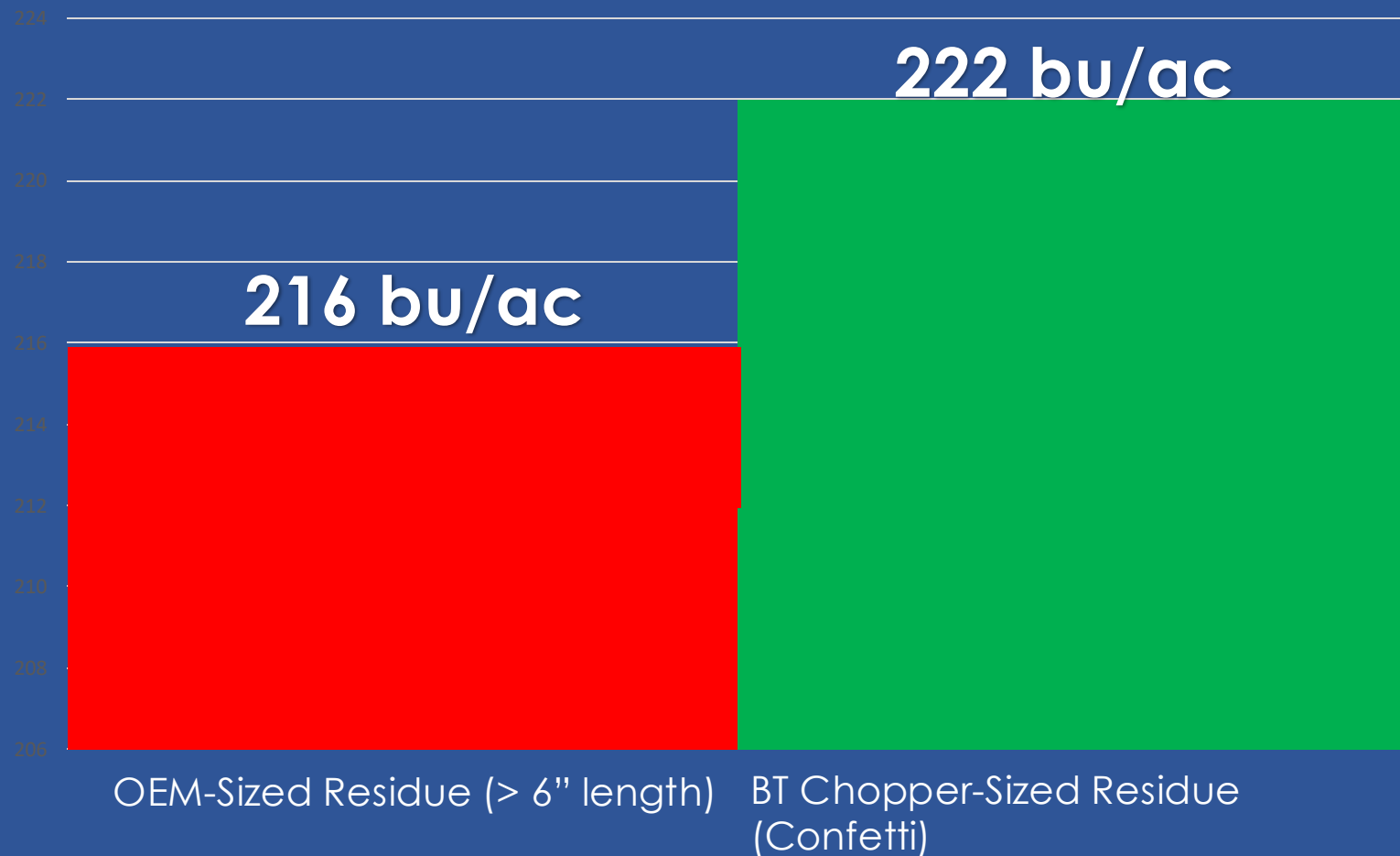
OEM Stalk Rolls



BT Chopper Stalk Rolls



Yield Comparison: OEM-Sized Residue Vs. BT Chopper-Sized Residue



Data Compliments of University of Illinois' Department of Crop Physiology

Soybean Research

- Soybean Populations
- Soybean Row Spacing
- Stripped Till Fertilizer



PIONEER
Pioneer
HERBICIDE RESISTANT
SEE TAG

93M10
PIONEER
HERBICIDE RESISTANT
SEE TAG



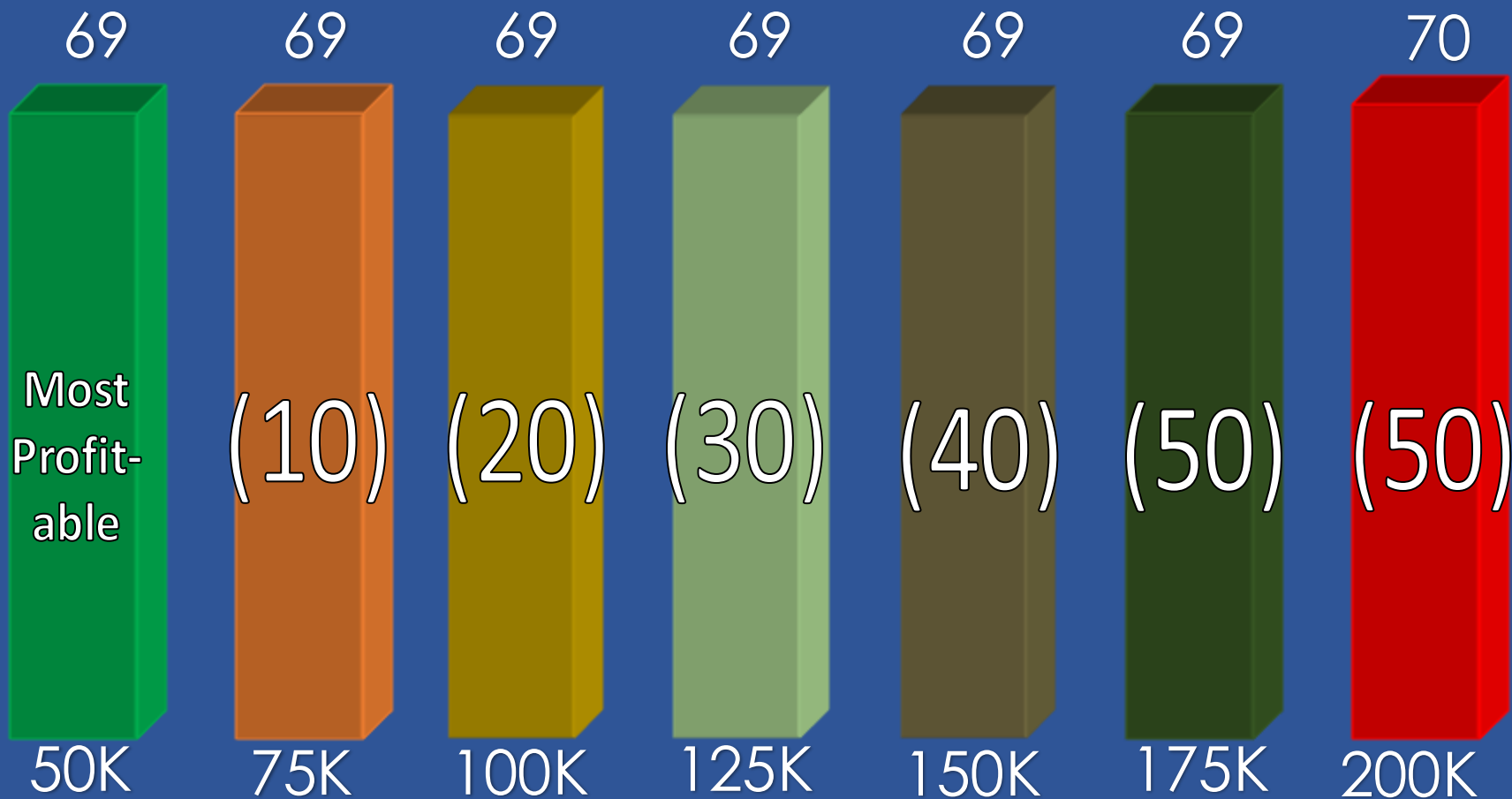
**HERBICIDE RESISTANT
SEE TAG**



PIONEER
BRAND

**SOYBEAN
SEED**

Long Term (6 Year) Soybean Planting Population Study 2010-2015



@ \$60/ bag, 25K seeds cost \$10 / Soybean value @ \$10/bu

*As populations increase, the potential for lodging and white mold also increase



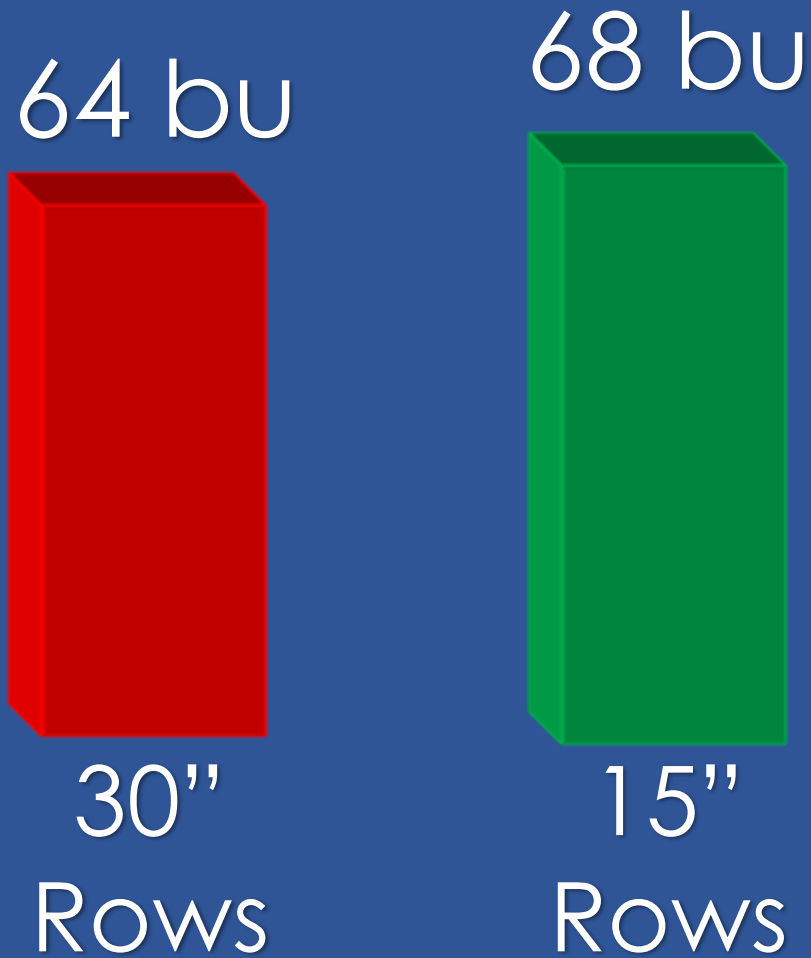
World Record Soybean Holder
Alex Harrell of Leesburg, GA 218 bu/ac
Population 110,000 seeds per acre





Drilled
15" Rows
30" Rows

Long Term (4 Year) Soybean Row Spacing Study



40 Years of Research

- Row Spacings +8 Corn +4 Beans
- Population 35k in corn/100k in soybeans
- Nitrogen \$1 Spent = \$4 Corn
- P&K \$1 worth = \$1.40 back
- Residue Management +8bu



Farmer Invented. Farmer Tested. Farmer Proven.

WHAT I'VE LEARNED IN 40 YEARS OF INDEPENDENT ON-FARM RESEARCH



www.CalmerCornHeads.com/in-the-field



MARION CALMER

309-368-1182

YouTube:
@Calmer Corn Heads

Calmercornheads.com