



DIRTY LITTLE SECRETS FROM THE SOIL

CONFESSIONS OF A BAD SCIENTIST WITH AN AWESOME SUBJECT



What have we learned in the last 6 years?

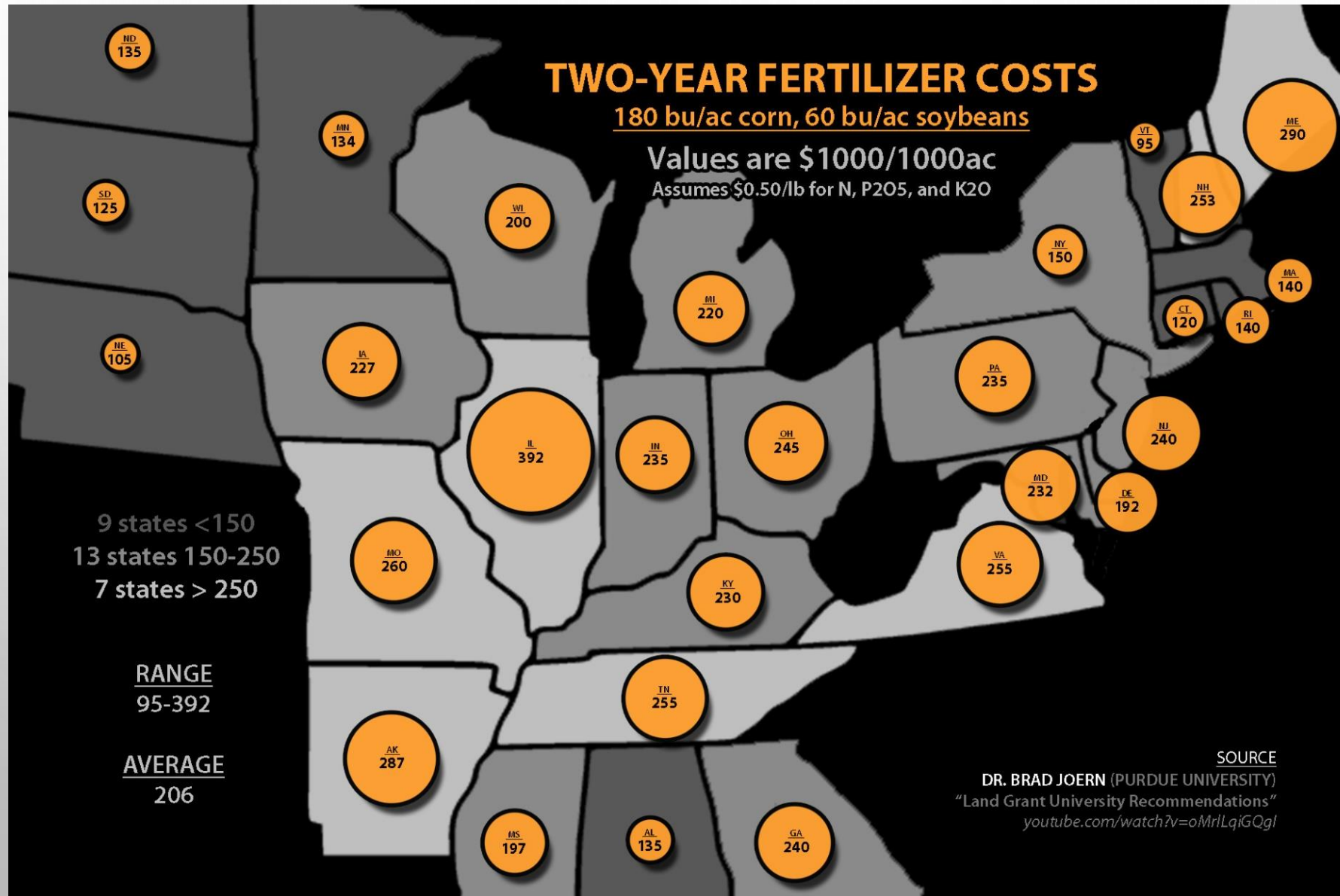
It's not a lack of minerals in the soil. It's a lack of biology
(Damn, I wish I said that first...)



MY FAVORITE HISTORIC LIE:
“RAIN FOLLOWS THE PLOW”



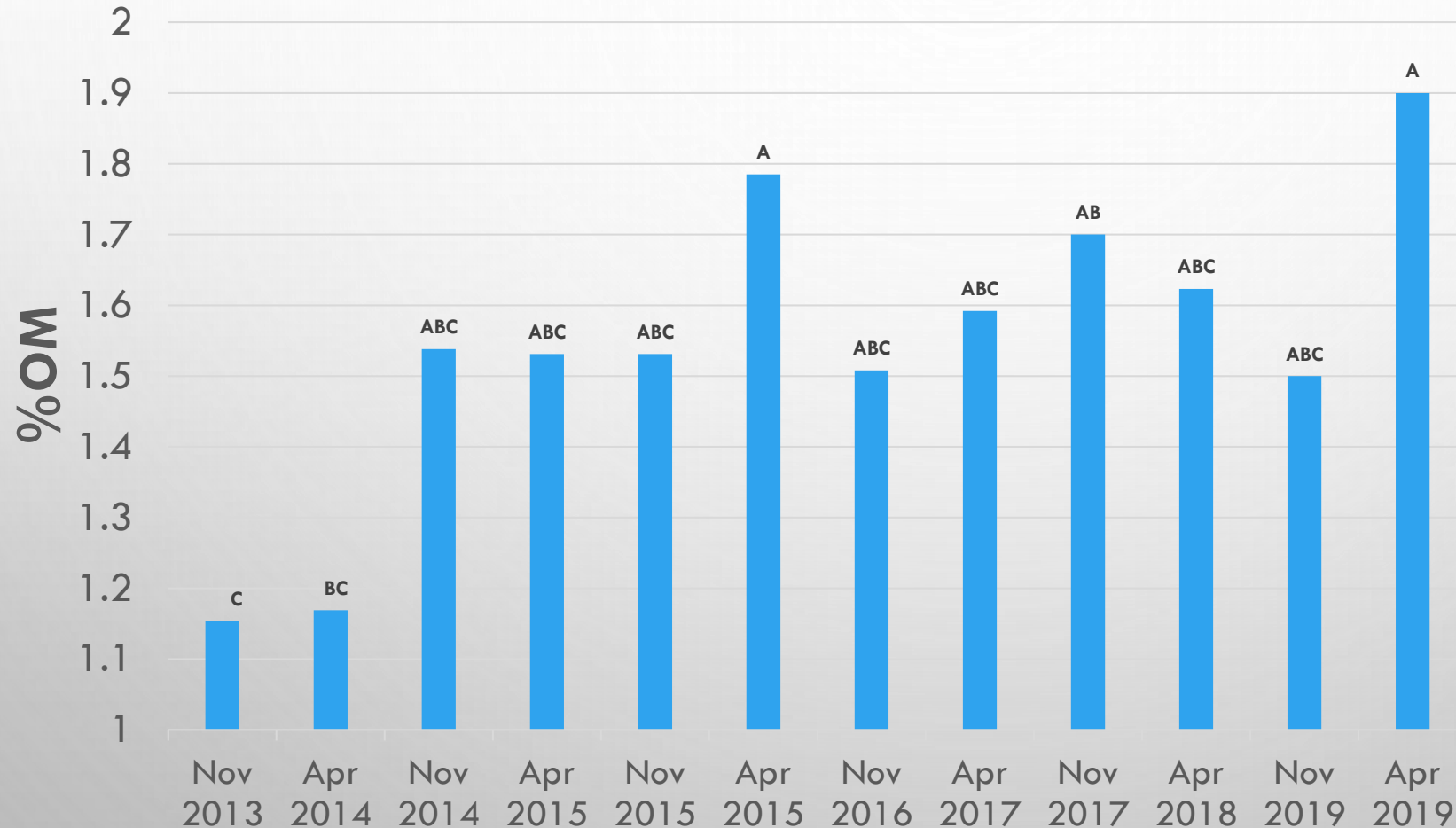
“YOU CAN TRUST LGU FERTILIZER RECOMMENDATIONS”



Brad Joern
“Magic at
the Border”

“YOU CAN’T BUILD ORGANIC MATTER”

It’s too hot and our soils are too sandy



Average of 13
Sample Zones on
50 ac in 3 SC counties

Means that do not share a letter are significantly different.

“MORE POTASSIUM, BETTER YIELD”

Warm Season
Cover

Cool Season
Cover

Warm Season
Cover

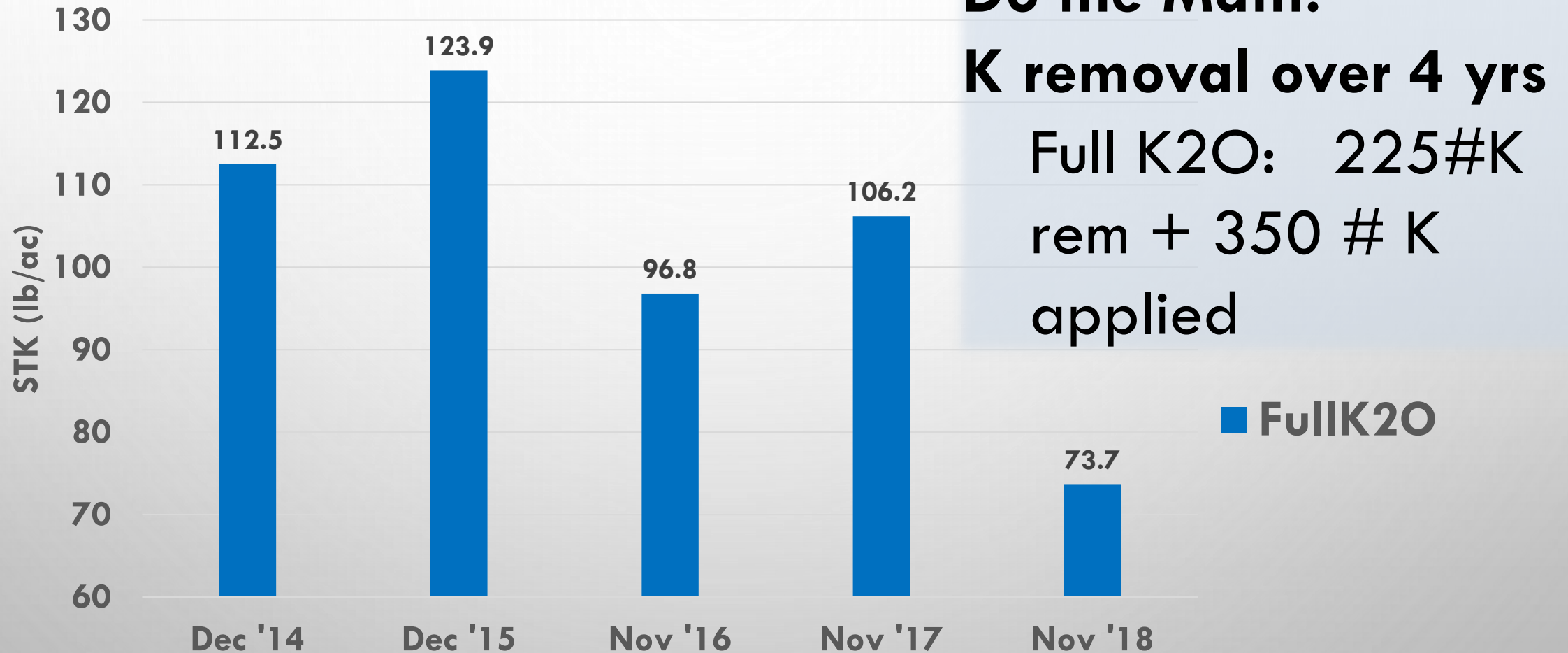
Cool Season
Cover

	Wheat 2015	Soybeans 2015	Corn 2016	Wheat 2017	Soybeans 2017	Corn 2018	Total Bu*		K2O Applied (lb) in 4 yrs
Rx K2O	50	41	144	51	64	93	442		420
Zero K2O	51	41	147	48	64	102	454		0

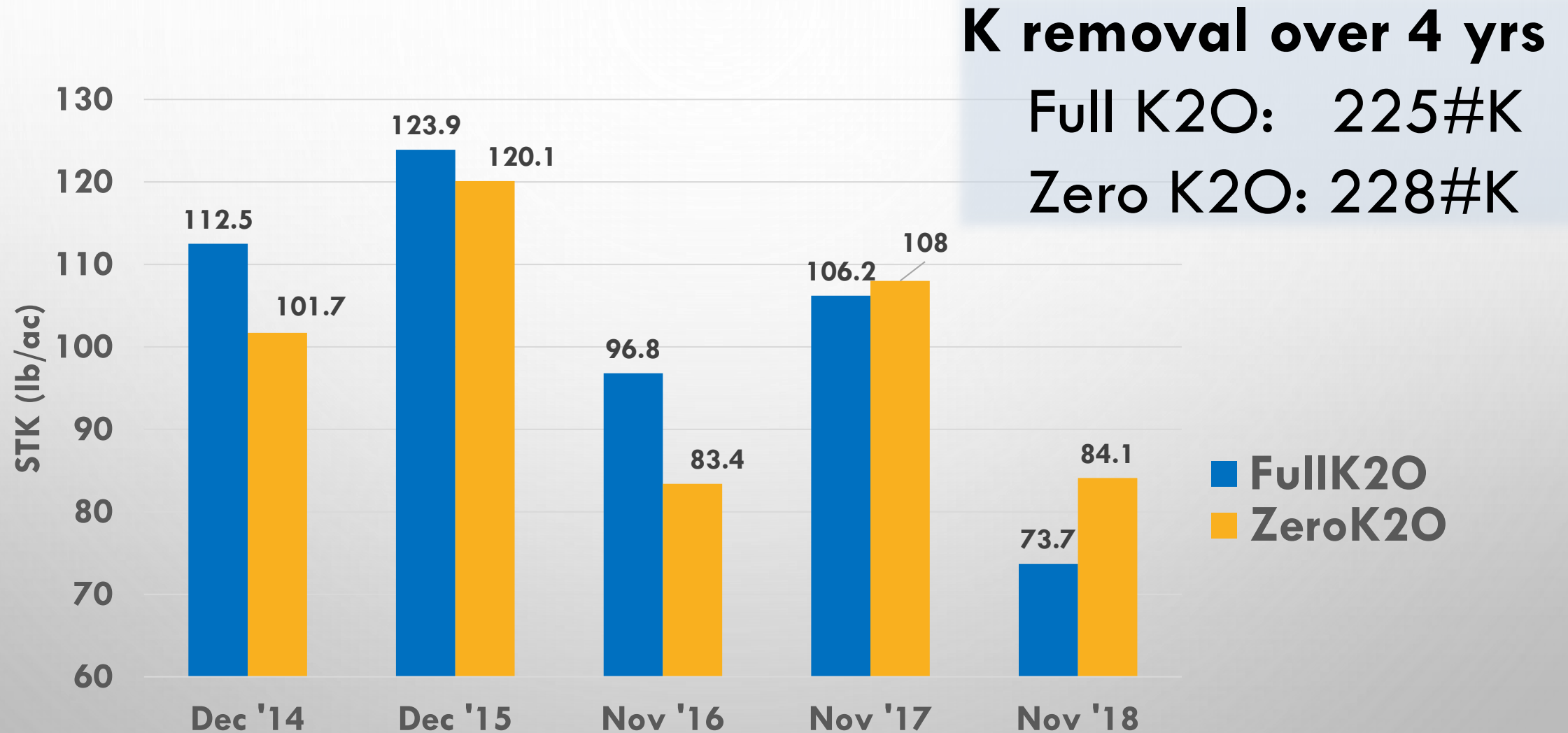
(350lb K)

“MEDIUM” SOIL TEST K RATING, 10 SIDE-BY-SIDE PLOTS EACH TRT

“GOT TO MAKE SURE YOU AT LEAST ADD CROP REMOVAL RATES FOR FERTILIZER”

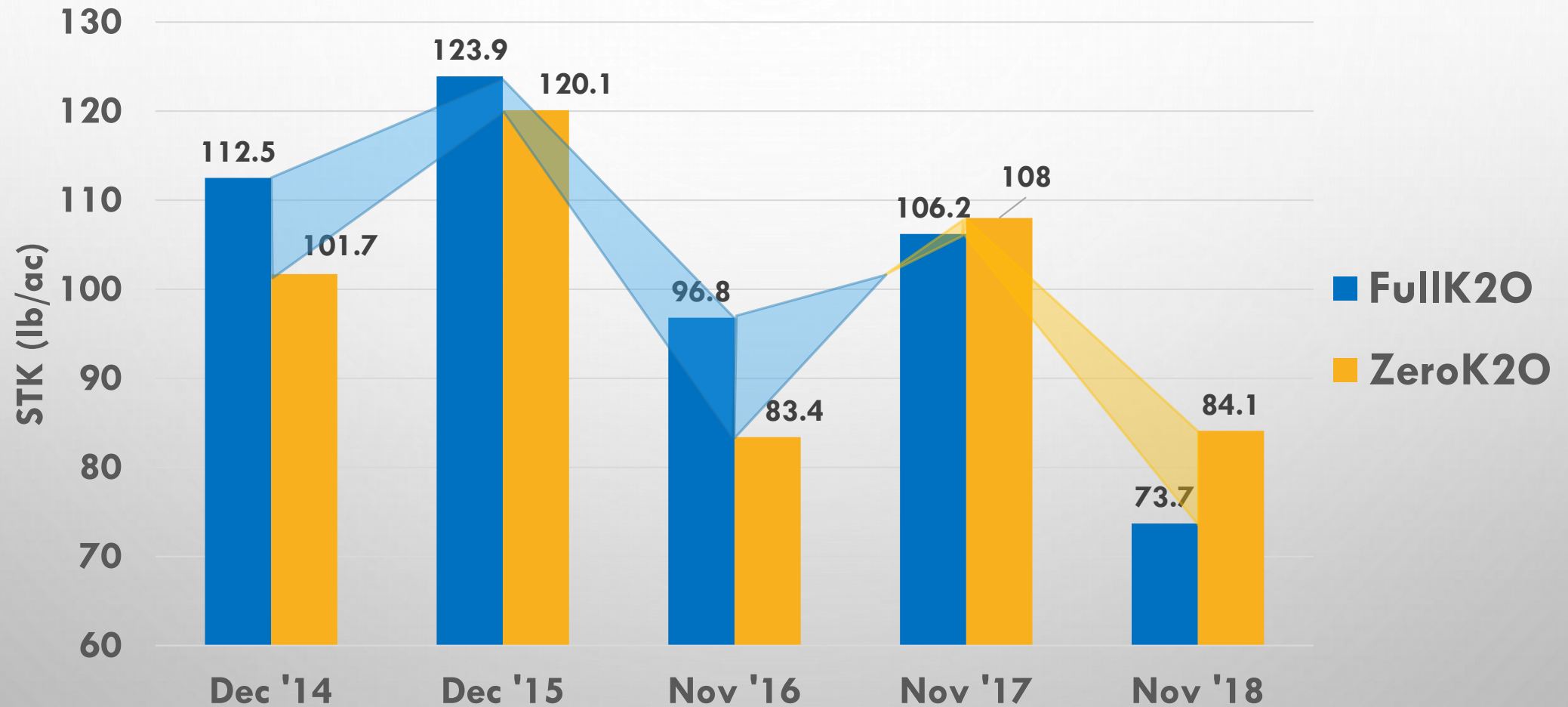


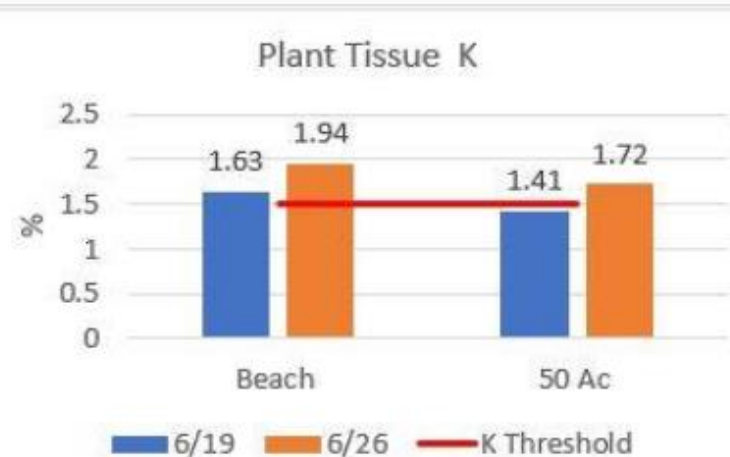
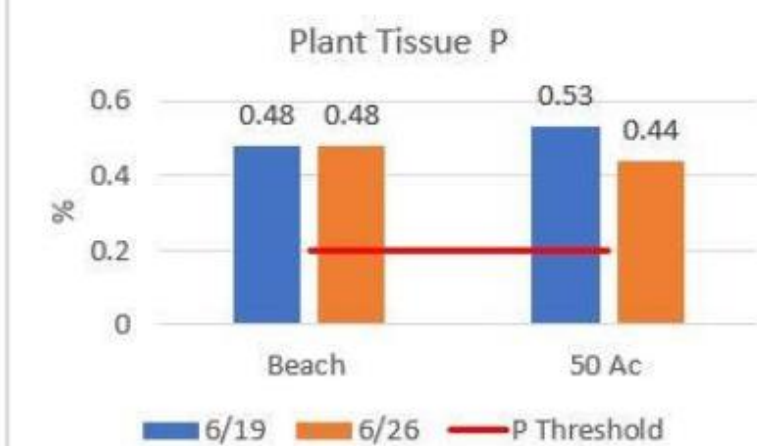
“GOT TO MAKE SURE YOU AT LEAST ADD CROP REMOVAL RATES FOR FERTILIZER”



“BUILD YOUR SOILS WITH FERTILIZER”

STK over 4 years, 6 crops (10 side-by side plots)





Dr. Buz Kloot

- June 27 · 🌐

Part of weaning ourselves off inputs is to look at the data and not be fearful. Friend in Georgia (3 years cover cropping) took the plunge this year to apply zero dry P2O5 and K2O (or starter fertilizer). In early June he took tissue samples of his cotton in some pretty dry weather (no N applied at this time either), some of the results (K,Ca, Mg) looked lowish and I asked him to take another sample after a rain which he did.

Second set of results from a post-rain event (orange bar) came back, no fertilizer added. Advice given him after the first results were to apply nitrogen, muriate of potash, Kmag and foliar sulfur (he didn't). I think he has saved a bundle.

📷 Tag Photo

5,538

People Reached

👍❤️😮 67

👍 Like

💬 Comment

➦ Share



Most Relevant ▾



Write a comment...



“PLANT TISSUE
K LOW? PUT
MORE-ON”

“COVER CROPS SUCK THE LIFE OUT OF SOILS” A CHEMICAL ARGUMENT

6" soil test and cover (lb/ac)

	Cover¹	No Cover
N in cover	192	-
P in cover	30	-
K in cover	269	-
N in soils¹	24	40
P in soils²	143	178
K in soils²	113	150

1. 8004 lb/ac DM ave in 2019, 5170 lb/ac DM ave in 2018

2. N in soils: NO_3^{2-} + $\text{NH}_4\text{-N}$ + Organic N

3. P and K – Mehlich 1

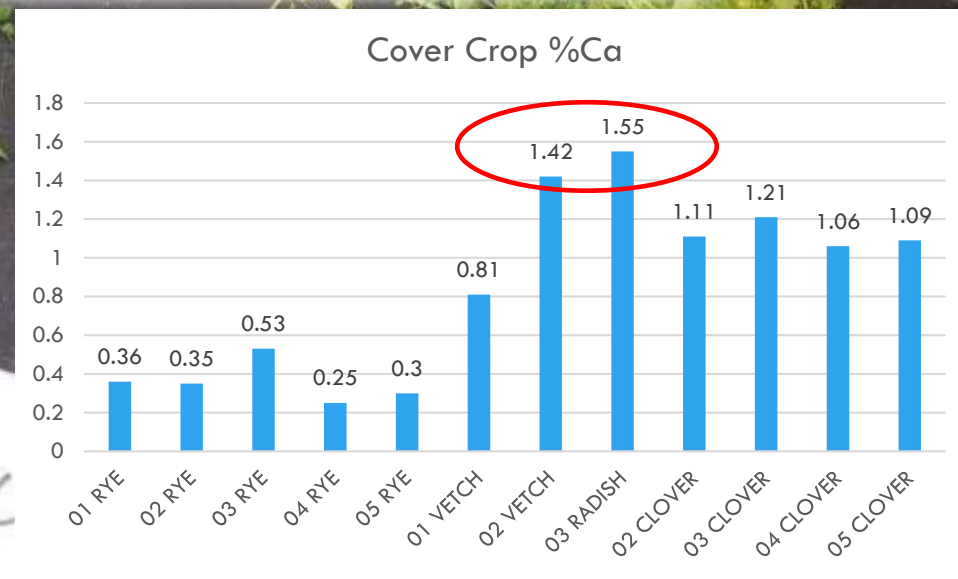
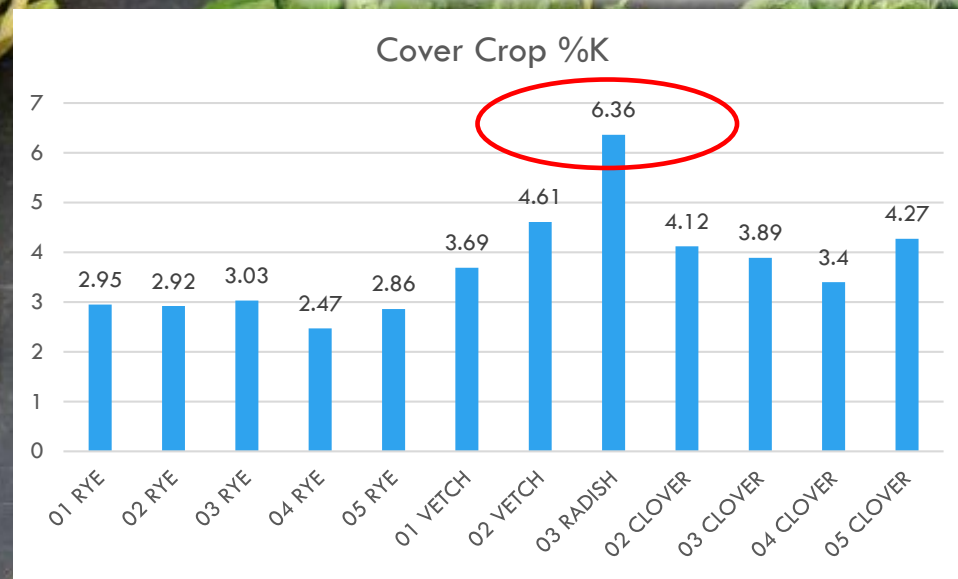
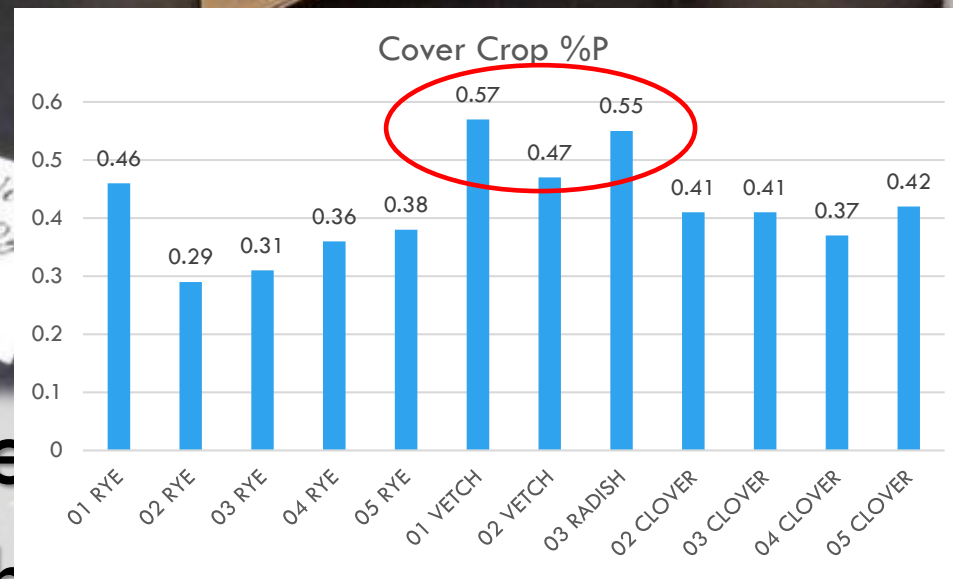
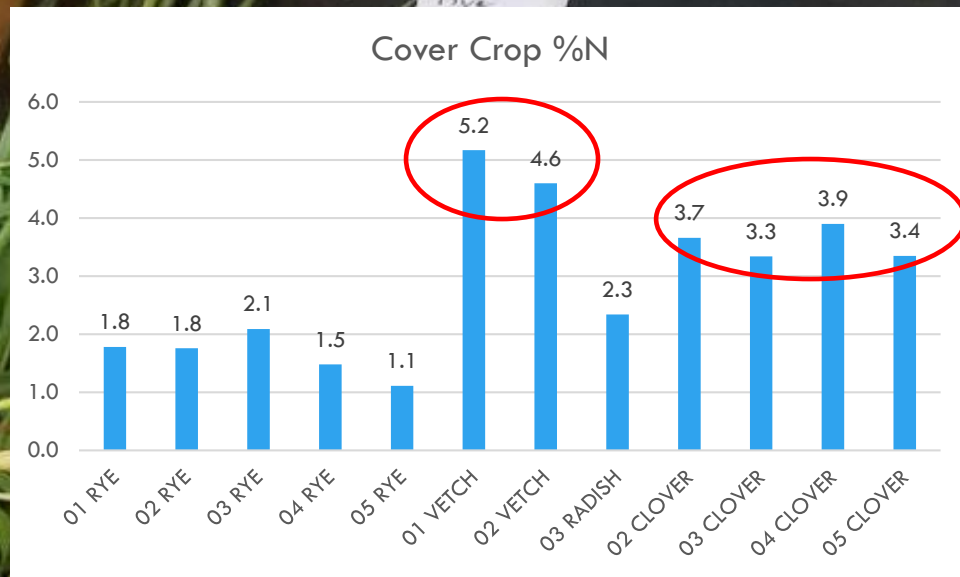
CIG: “Using Cover Crops and Soil Health to Reduce Crop Stress and Aflatoxin Contamination”

“COVER CROPS SUCK THE LIFE OUT OF SOILS” A BIOLOGICAL ARGUMENT

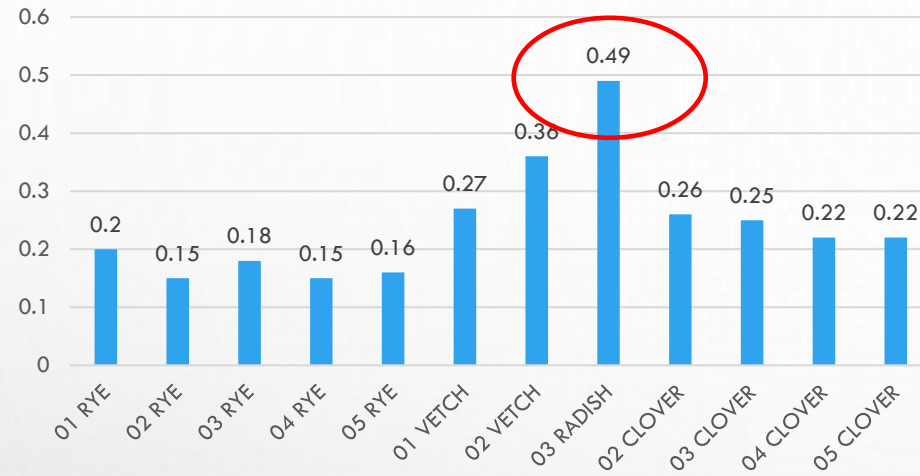
Phospholipid Fatty Acid (PLFA) – Ward Labs

	Cover	No Cover	Ratio
Total Biomass	3902	2822	1.4
Total Bacteria Biomass	1839	1336	1.4
Rhizobia	12.6	6.9	1.8
Total Fungi Biomass	402	184	2.2
AMF	103	57	1.8
Fungi/Bacteria	0.21	0.14	

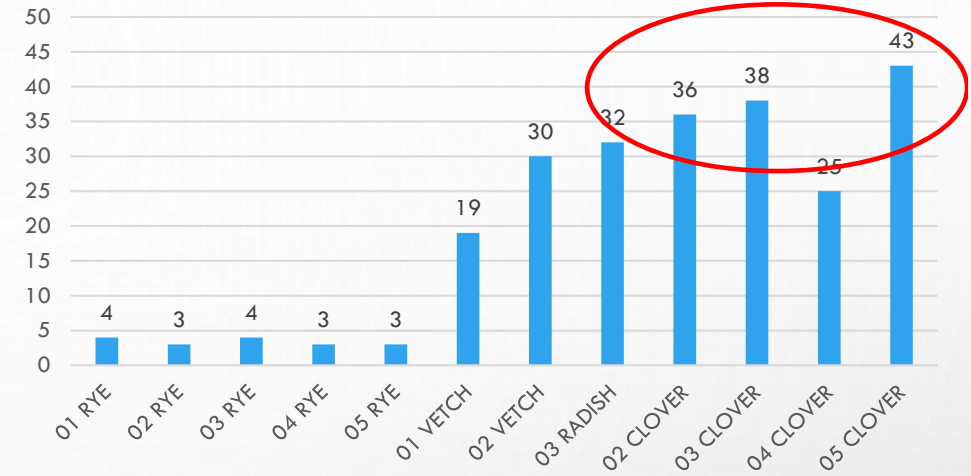
**CARTER FARMS
5 NT VS CC PLOTS 2018**



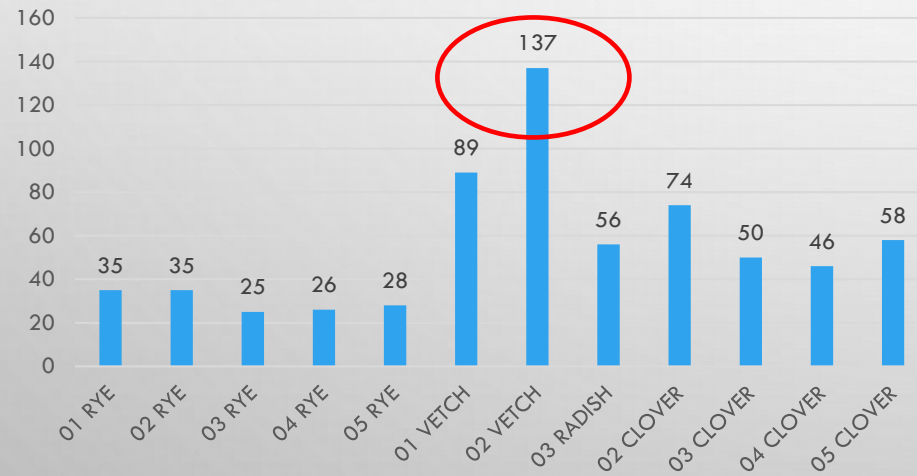
Cover Crop %S



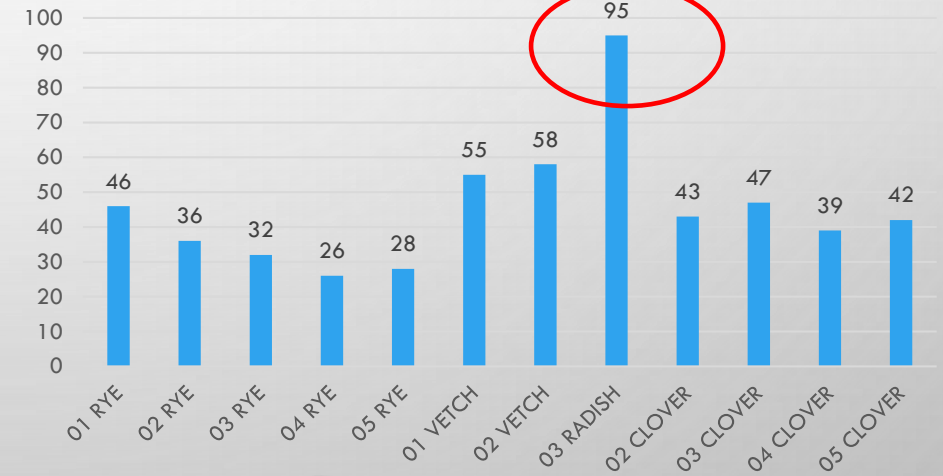
Cover Crop ppm B



Cover Crop ppm Zn



Cover Crop ppm Mn





Dr. Buz Kloot

August 4, 2018 · 🌐

Looks like this is an epidemic. Another farmer was told he absolutely had to spray for stinkbug pressure. Visited 10 fields and took 318 bolls (as I walked through a bunch of spider webs). One boll was spoiled 13 had warts. Land grant threshold is 10% warts/blemishes. We had 4.4%. I wonder how the dealer was able to come to his conclusion? My evidence is in the photos.



**“YOU NEED TO DO A
PREVENTATIVE SPRAY BEFORE
ITS TOO LATE”**

**OR :
“I LEFT A PALLET OF ACEPHATE AND
BIDRIN IN
YOUR SHOP”**



Dr. Buz Kloot

July 23 at 7:18 PM · 🌐



My new thrill is following the pollinator strips next to cotton at the Jason Carter farm. The buckwheat has had it's day, now it's time for the sunflowers to shine but the sunn hemp will soon dominate the flower display. A wonderful insectary - lots of ladybugs, butterflies and as many as 8 Mississippi kites feasting on the cotton field (now 2 weeks into bloom) and the pollinator strips. No insecticide sprayed (a complete no-no in this world). Clean, weed free cotton, clean blemish free bolls.



“POLLINATOR STRIPS WILL HARBOR PESTS”



SYSTEMS THINKING

THE SYSTEMS APPROACH TO THINKING IS VERY DIFFERENT TO THE PIECEMEAL, FRAGMENTED APPROACH WE USE

EVEN THOUGH OUR UNIVERSE IS HELD TOGETHER BY SYSTEMS, WE CONTINUALLY BREAK THINGS APART TO LOOK AT THE PIECES AND LOSE WHATEVER SIGHT WE HAD OF THE WHOLE.

THIS PROCESS, KNOWN AS [REDUCTIONIST] THINKING, MAKES THE PARTS PRIMARY AND THE WHOLE SECONDARY

IN SYSTEMS THINKING, THE WHOLE IS PRIMARY AND THE PARTS SECONDARY

ANDREW PAPGEORGE

Dr. Buz Kloot
August 4, 2018 · 🌐

Looks like this is an epidemic. Another farmer was told he absolutely had to spray for stinkbug pressure. Visited 10 fields and took 318 bolls (as I walked through a bunch of spider webs). One boll was spoiled 13 had warts. Land grant threshold is 10% warts/blemishes. We had 4.4%. I wonder how the dealer was able to come to his conclusion? My evidence is in the photos.



“YOU NEED TO DO A
PREVENTETIVE SPRAY BEFORE
ITS TOO LATE”

Reductionist vs
Systems Explanation

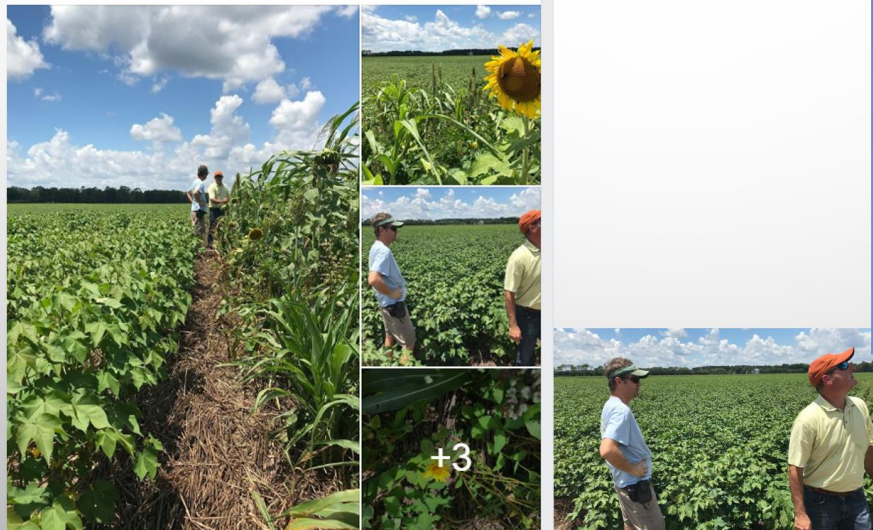
Dr. Buz Kloot
July 23 at 7:18 PM · 🌐

My new thrill is following the pollinator strips next to cotton at the Jason Carter farm. The buckwheat has had it's day, now it's time for the sunflowers to shine but the sunn hemp will soon dominate the flower display. A wonderful insectary - lots of ladybugs, butterflies and as many as 8 Mississippi kites feasting on the cotton field (now 2 weeks into bloom) and the pollinator strips. No insecticide sprayed (a complete no-no in this world). Clean, weed free cotton, clean blemish free bolls.

“POLLINATOR STRIPS WILL
HARBOR PESTS”



Degraded (brittle)
vs.
Regenerative (resilient)
Systems





Dr. Buz Kloot

October 25, 2018 · 🌐



Wendell Berry's book, "The Unsettling of America" has my mind going 100 miles an hour. Here's a story that makes the mind reel:

Nat Bradford, farmer, cover cropper, known for heirloom watermelons, collards, pumpkins and more, netted over \$27,000 in 13 weeks on 0.38 acres of organic okra this summer. Okra followed a cool season cover. No fertilizer or chemicals of any kind. That's right. 0.38 acres. Nat Bradford



Dr. Buz Kloot

January 27 · 🌐



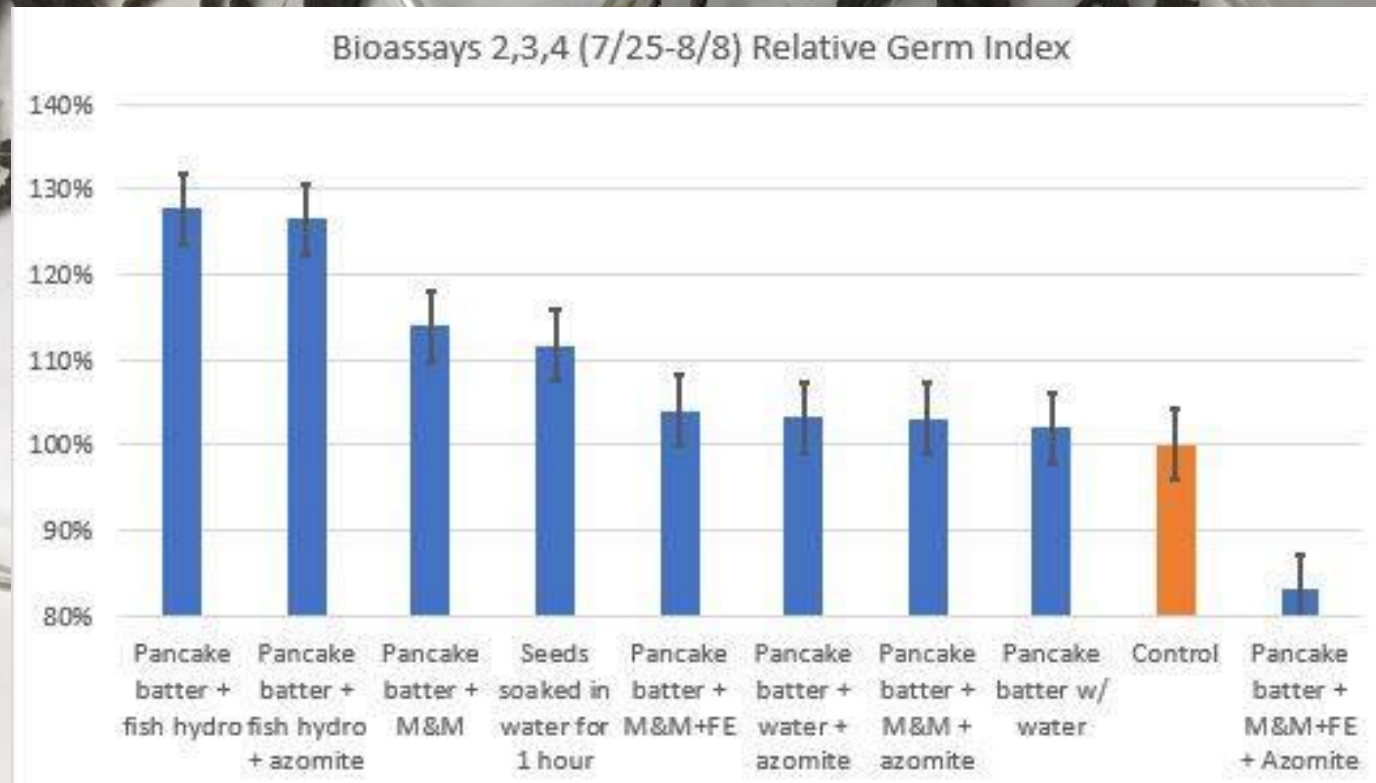
One of the pleasures I have is working with folks who think outside the box. Nat Bradford is an organic farmer and grows his collards with a cover crop. Says Nat: "Clover and vetch is proving a great cover for the collards. The clover is competing with the vetch and keeping it in check. These are the sweetest, most flavorful, clean collards I have ever grown. Things are coming together."



SEEDS OF HOPE



SEEDS OF
HOPE



A hand is holding a yellow measuring tape vertically over a field of green grass. The tape has black markings and numbers. The background is a dense field of green grass with some small purple flowers. The text is overlaid on the image.

METAPHORS

**IF YOU WANT TO CHANGE THE WORLD, YOU HAVE
TO CHANGE THE METAPHOR**

-JOSEPH CAMPBELL

ALL I SAID WAS

WE DON'T NEED THAT MUCH FERTILIZER

