NATURAL SYSTEMS ARE THE BEST, MOST COST EFFECTIVE PROBLEM SOLVERS

TODAY'S TOPICS-

PARK FARMING ORGANICS (PFO) HISTORY
WHY THE CHANGE STARTED 40 YEARS AGO?
9C'S FARM SYSTEM TO GENERATE PROFIT
RESULTS OF FARM SYSTEM SOLVING PROBLEMS
TURNING A RICE CROP INTO FRESH MARKET SQUASH
SHAMELESS MARKETING

Scott and Ulla Park 1st generation, founders (1974), son Brian Park owner. Farm is in Meridian, 50 miles north of Sacramento.

1st organic field certified (CCOF) in 1995. 28 fields Regenerative Organic Certified (ROC) in 2022, two more in transition (1765 acres total)

ORGANIC LABEL IRRELEVANT TO THIS TALK. EMPHASIS IS ON NATURAL SOLUTIONS COMBINED WITH CONVENTIONAL PRACTICES USED TO GENERATE A PROFIT.

Crops grown- processing tomatoes, rice, corn, wheat, sorghum, oats, sunflower, alfalfa, fresh market melons, squash and watermelons, vegetable crops for seed, seed crops, garbanzos, dry beans, peas, lentils, and cover crops for soil health and for seed.

Tomato harvester cuts whole plant, shaker separates vine from tomatoes, electronic eyes knock green, dirt to the ground. Machine will harvest 50 tons/hr. Three people sorting mold, damaged tomatoes. Full gondolas head to cannery, put in can within 4 hours. This machine harvests 800 tons/ day for 3-4 weeks (22,000 tons +/-).

TYPICAL SACRAMENTO VALLEY ROW CROP FIELD IN LATE WINTER.

1985- SPRAYED/DUSTED/ SHANKED 50 TYPES OF FERTILIZERS, PESTICIDES TO PROCESSING TOMATOES OR DRY BEAN CROPS

WHY DID WE START ABANDONING CONVENTIONAL FARM PRACTICES 40 YEARS AGO?

SOIL STRUCTURE AN OBSTACLE IN EVERY OPERATION (SOIL TEXTURE MOSTLY CLAY LOAM, SOME SILTY LOAM)

-CRUST 2” THICK

- NEED TO IRRIGATE IMMEDIATELY & OFTEN AFTER PLANTING AS SOIL DRIES OUT FAST

-WATER RUN OFF IRRIGATING OR RAINS.

- EROSION

- CLODS CAUSING HARVEST DEDUCTIONS, EXTRA LABOR

- GROUND TIGHT CAUSING EXTENSIVE DEEP TILLAGE COSTS

-EXTRA PASSES WITH POWER INCORPORATOR

-UNEVEN STANDS

-PUDDLING AFTER 3 HR SPRINKLING WHEN FIELD NEEDED 6 HOURS.

-FOUR DAY FURROW IRRIGATIONS WITHOUT 6” LATERAL MOVEMENT TO SEED

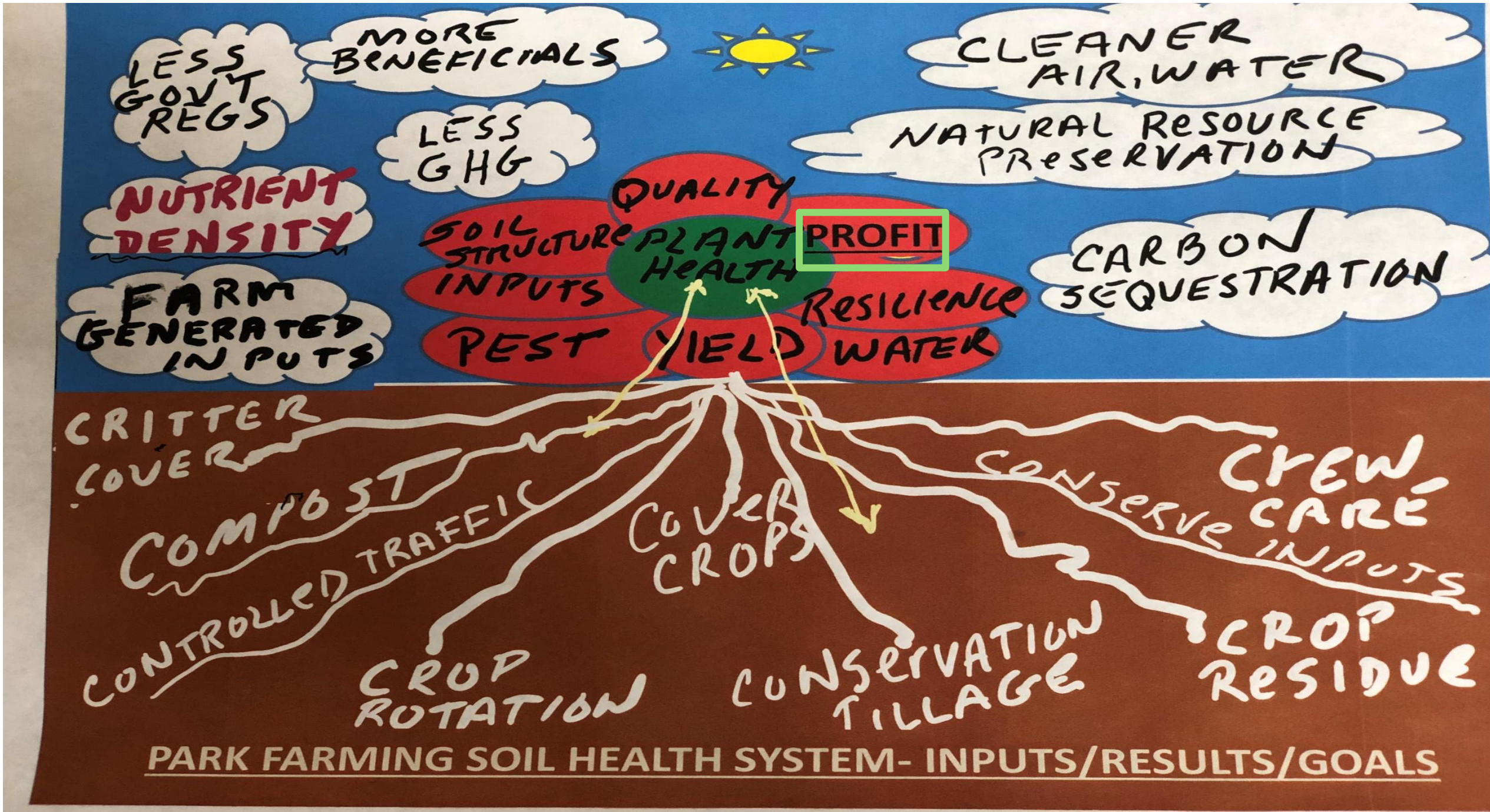
WHAT CHANGES WERE INITIATED TO COMBAT POOR SOIL STRUCTURE?

NO TEMPLATE FOR STRATEGY – 100% FLYING BY THE SEAT OF MY PANTS. I ONLY KNEW WHAT WAS WRONG, BUT NO CLUE ON HOW TO MAKE THE SOIL MY FRIEND INSTEAD OF MY ENEMY-
1985 RENTED FIELD THAT WAS NOT A BRICK- AN EPIPHANY

1. SUMMER, 1986, BOUGHT A FIELD OF WHEAT STRAW AND INCORPORATED IT RATHER THAN LANDOWNER BALING OR BURNING. PLANTED TOMATOES FOLLOWING SPRING- MELLOW SOIL!

2. FALL, 1988 MAYBE PLANTED FIRST COVER CROP OF VETCH IN THE SACRAMENTO VALLEY. PLANTED TOMATOES IN THAT FIELD IN 1989. LOST THE FIELD TO SEPTEMBER RAINS EXCEPT VETCH TRIAL AREA.

3. 1990 – EXPERIMENTED WITH LESS DEPENDENCY ON POWER INCORPORATOR AND PRE EMERGENT HERBICIDES. DID MORE “CAPPING” AS SOIL WAS HOLDING MOISTURE BETTER. THE TREND TOWARD FEEDING THE SOIL WITH BIOMASS AND SHRINKING CHEMICAL INPUTS WAS PICKING UP MOMENTUM.


LESS GOVT REGS
MORE BENEFICIALS
LESS GHG
CLEANER AIR, WATER
NATURAL RESOURCE PRESERVATION
NUTRIENT DENSITY
FARM GENERATED INPUTS
QUALITY
SOIL STRUCTURE
PLANT HEALTH
PROFIT
INPUTS
RESILIENCE
PEST
YIELD
WATER
CARBON SEQUESTRATION
CRITTER COVER
COMPOST
CONTROLLED TRAFFIC
COVER CROPS
CONSERVE INPUTS
CREW CARE
CROP ROTATION
CONSERVATION TILLAGE
CROP RESIDUE
PARK FARMING SOIL HEALTH SYSTEM- INPUTS/RESULTS/GOALS


HEALTHY SOIL IS JUST GOOD BUSINESS!


Rippa
Stripper

PFO PREPPING FIELD FOR 1ST IRRIGATION OF SEASON, 35 DAYS SINCE TRANSPLANTING.

3RD "C"- CROP ROTATION

PARK FARMING ORGANICS
3 CASH CROP ROTATIION/COVER CROPS

CORN WITH CLOVER INNERPLANTED (EXPERIMENTING), GRAZED

VETCH CROP BEFORE HARVEST

MULTISPECIES COVER CROP AFTER CORN, GRAZED IN WINTER/SPRING

SUMMER MULTISPECIE COVER CROP FOLLOWING VETCH HARVEST, GRAZED

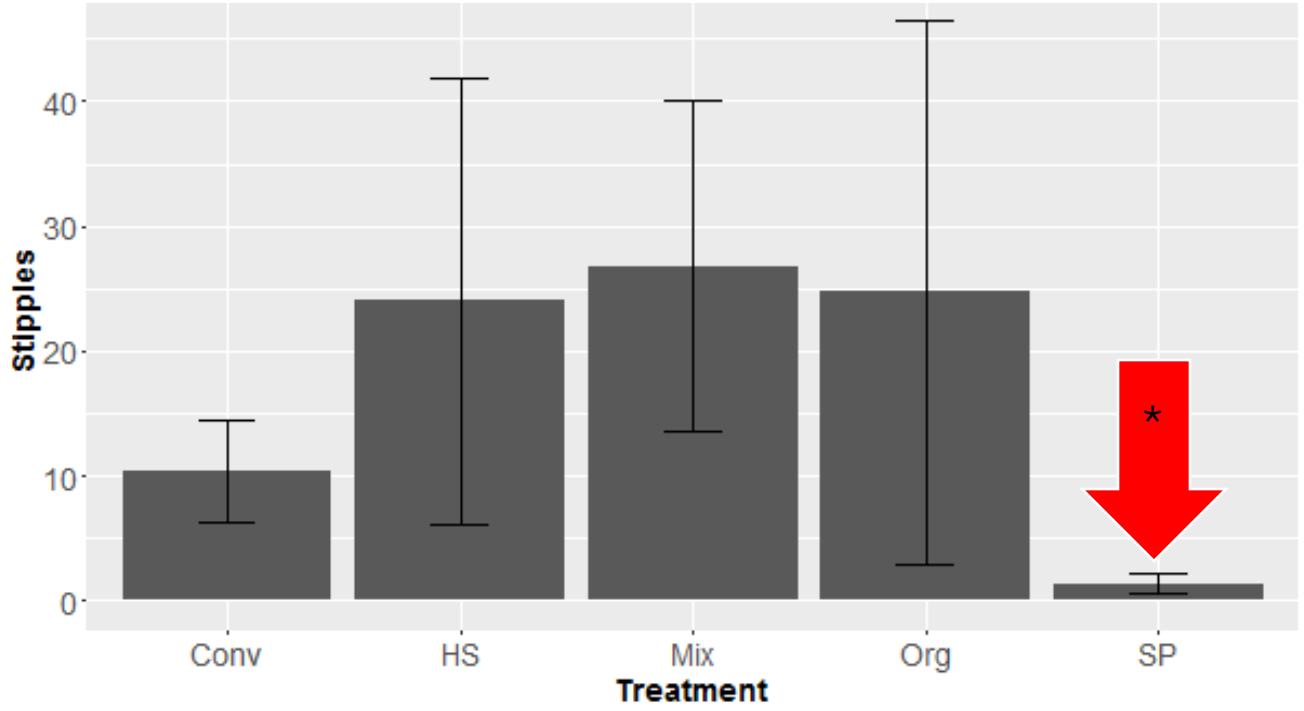
RICE FOLLOWING MULTISPECIES

PEA, VETCH WINTER COVER CROP

VETCH CROP AFTER RICE FOR SEED

TOMATOES AFTER 3 COVER CROPS!

Soil management affected leafhopper feeding



CTRI sponsored research (2016)- Reducing insect virus vectors of BCTV in processing tomatoes through soil health management

Table 1: YIELD AND WATER USE EFFICIENCY

Treatment	Yield Tons per Acre
45 day Deficit	62.00
30 day Regular	62.69
p-Value	1

Resilience study for OFRF – 2016. Conducted by Amelie Gaudin, UC Davis professor of soil agroecology.

STANDARD WATER CUT OFF DAYS BEFORE HARVEST- 10-14 DAYS. THIS FIELD WATER CUT OFF- 45 DAYS

GOOD ORGANIC PROCESSING TOMATO YIELD- 40 TON/AC. THIS FIELD'S YIELD 62 TON/AC.

lessening the leaching of nitrogen into the groundwater.

N leaching comparison- **Park Farming 4.4 kg N-NO3/ha**

Russell Ranch Paper - Russell Ranch

- Organic tomato + WCC ~ **7.2kg N-N03 / ha**

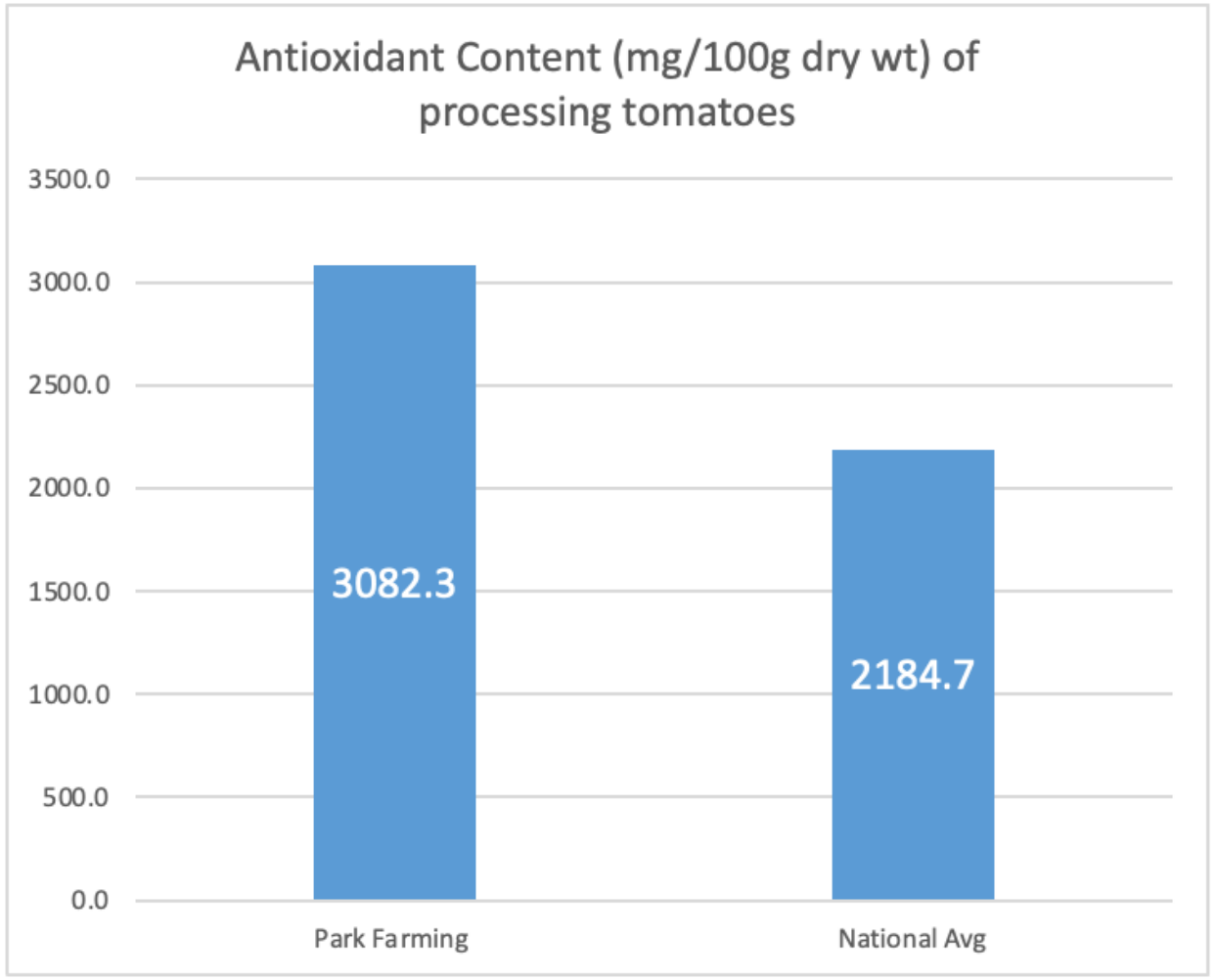
Smuckler Paper - Yolo County

- Organic grain + WCC ~**15-20kg N-N03 / ha**

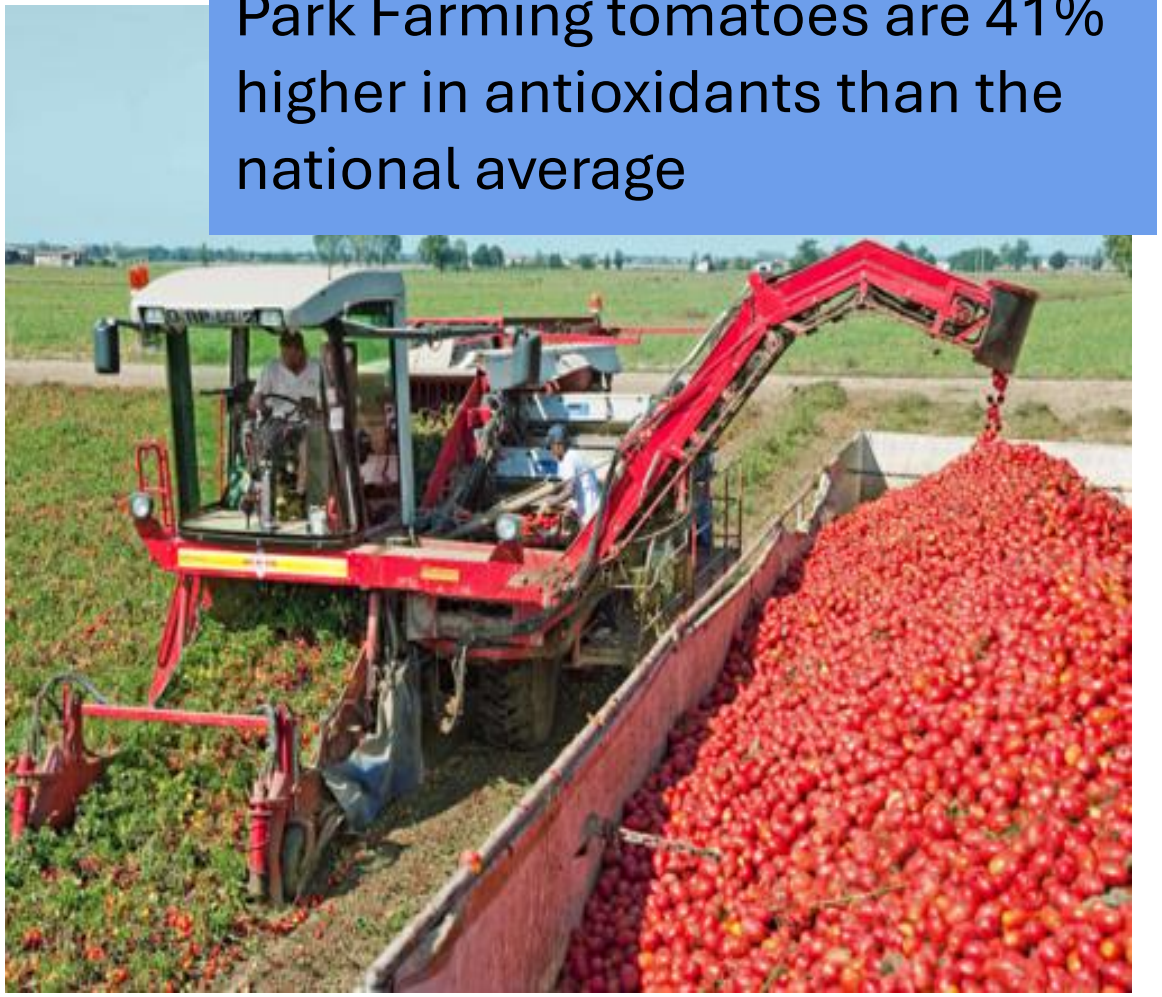
Grahmann Paper - New Mexico

- Conv maize with residue incorporation ~**80kg N-N03 / ha**

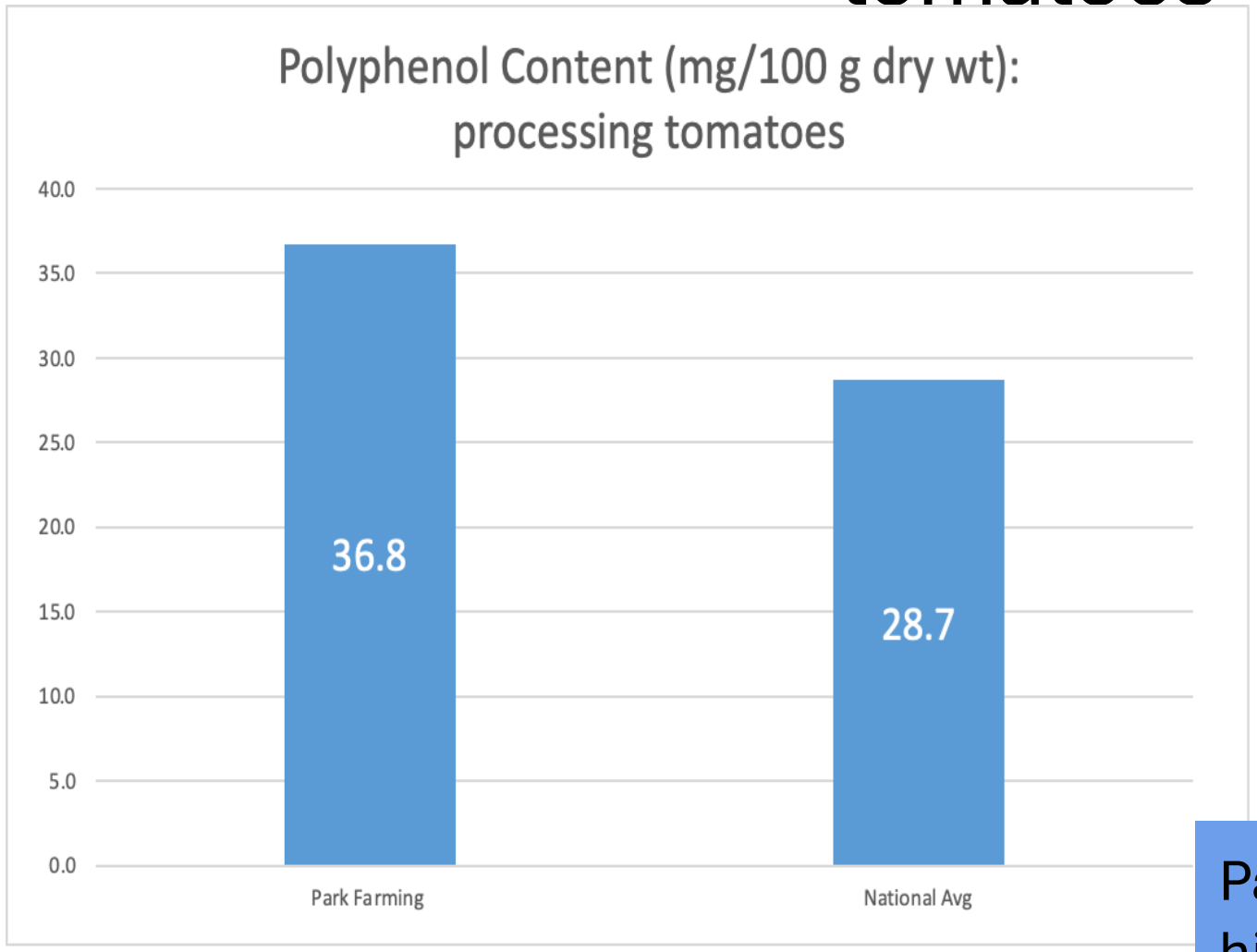
Antioxidant content (mg/100g dry wt): 2021 processing tomatoes



Park Farming tomatoes are 41% higher in antioxidants than the national average



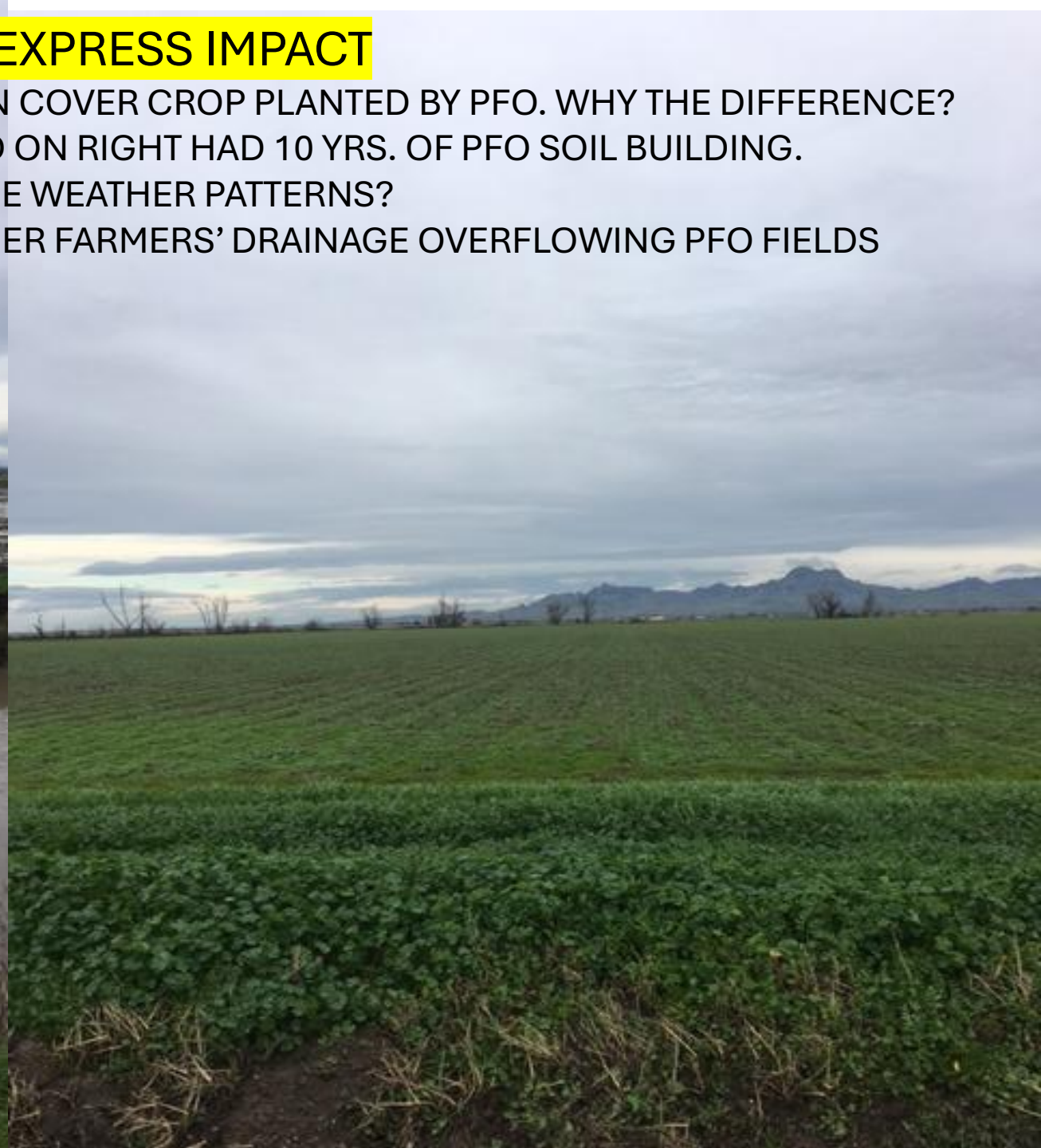
Polyphenols (mg/100g dry wt): 2021 processing tomatoes



Park Farming tomatoes are 28% higher in polyphenols than the national average

PINEAPPLE EXPRESS IMPACT

TWO FIELDS ½ MILE APART. BOTH FIELDS HAD RICE, THEN COVER CROP PLANTED BY PFO. WHY THE DIFFERENCE?
FIELD ON LEFT WAS FIRST YEAR UNDER PFO MGMT. FIELD ON RIGHT HAD 10 YRS. OF PFO SOIL BUILDING.
WHICH FIELD IS POSITIONED FOR THE CURRENT EXTREME WEATHER PATTERNS?
2019 PFO LOST 400 ACRES OF WINTER CROPS FROM OTHER FARMERS' DRAINAGE OVERFLOWING PFO FIELDS




TOMATO INDUSTRY ADVISORS DISCOURAGE BLACKBERRY VINES AS THE VINE HARBORS STINK BUGS, A HARMFUL INSECT FOR TOMATOES. PFO HAS NO STINK BUG ISSUES. NATURAL SYSTEM DOING THE PROBLEM SOLVING?


WHAT ABOUT BIOLOGICALS?
WE HAVE USED THEM SUCCESSFULLY, BUT THEY ARE A BAND AID FOR THE SYMPTOM, NOT A SOLUTION FOR THE PROBLEM. IF BIOLOGICALS ARE EFFECTIVE, WHY NOT CREATE YOUR OWN BIOLOGICAL FACTORY?


RICE CROP GROWN WITH ZERO INPUTS OTHER THAN COVER CROPS FOR TWO YEARS MATCHES CONVENTIONAL YIELD

NO TILL DRILL VETCH INTO RICE STRAW ON LEFT.

VETCH GROWTH AFTER TWO MONTHS ON RIGHT


PURPLE VETCH CROP IN LATE MARCH


FRESH MARKET SQUASH FOLLOWING RICE, COVER CROP.
AN INCREASE IN SOIL HEALTH IS PROPORTIONAL TO A DECREASE IN FARM PROBLEMS

HARVESTING FRESH MARKET SQUASH- AUGUST, ‘24.
FURROW IRRIGATION, NOT DRIP.
PRE-IRRIGATION PLUS 3 IN-SEASON IRRIGATIONS.
NO MULCH, BARE DIRT
NO PEST SPRAYS
NO SEED TREATMENT
$200/AC OF COMPOST
$3/AC MICROORGANISMS
$9/AC SEAWEED- TOTAL INPUTS
(NOTE: ALL INPUTS **POSITIVE** FOR THE HEALTH OF THE SOIL)

GROWING ROGUE by Scott Park (9/29/26 publish date)


DRILLING RICE INTO MOISTURE RATHER THAN FLYING ON SEED INTO FL00DED FIELD

IT CAN BE DONE! RICE DRILLED INTO MOISTURE RICE RATHER THAN FLOWN ON. SOLVED SCUM, WIND DRIFT, BROKEN CHECKS, COLD WATER, LODGING, CREW AVAILABIITY CRUNCH, WEED PRESSURE, SHRIMP DAMAGE, WATER LIMITATION. USES ABOUT 15% LESS WATER. ONLY WORKS ON WELL AGGREGATED SOIL!

SOLVE PROBLEMS BEFORE THEY HAPPEN

HOME MADE FRONT MOUNTED FURROW CHOPPER WITH REAR MOUNTED FLAIL CHOPPER.

VETCH COVER PLANTED ON BEDS AND FURROW.

IF TIRES STEP ON VETCH IN FURROWS RESIDUE TANGLES ON OTHER IMPLEMENTS

A JOKER “VERTICAL” DISK TO MIX COVER CROP WITH SOIL