

Your “ONE THING” to make your farm better-using COVER CROPS in 2017?



92 bu/ac Organic Wheat 2012

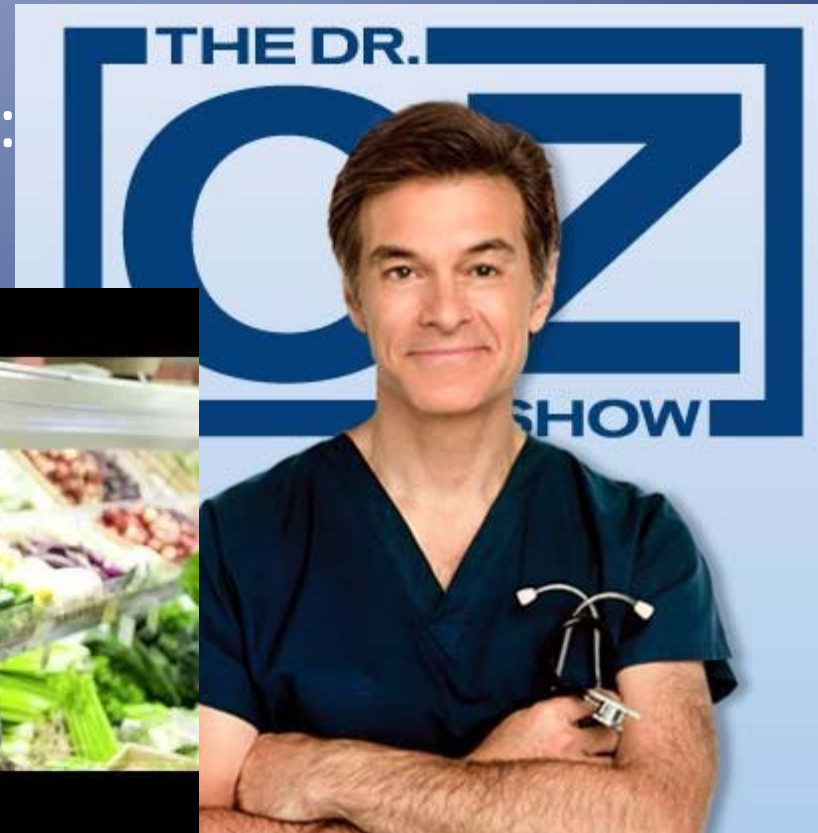


Soil Health is Human Health?

- In the race to feed the world we have forgotten about Soil Health and it's DIRECT LINK to YOUR HEALTH.

Media Educating our consumers:

- DR. OZ
- DR. Mercola
- DR. Hymen
- DR. Huber

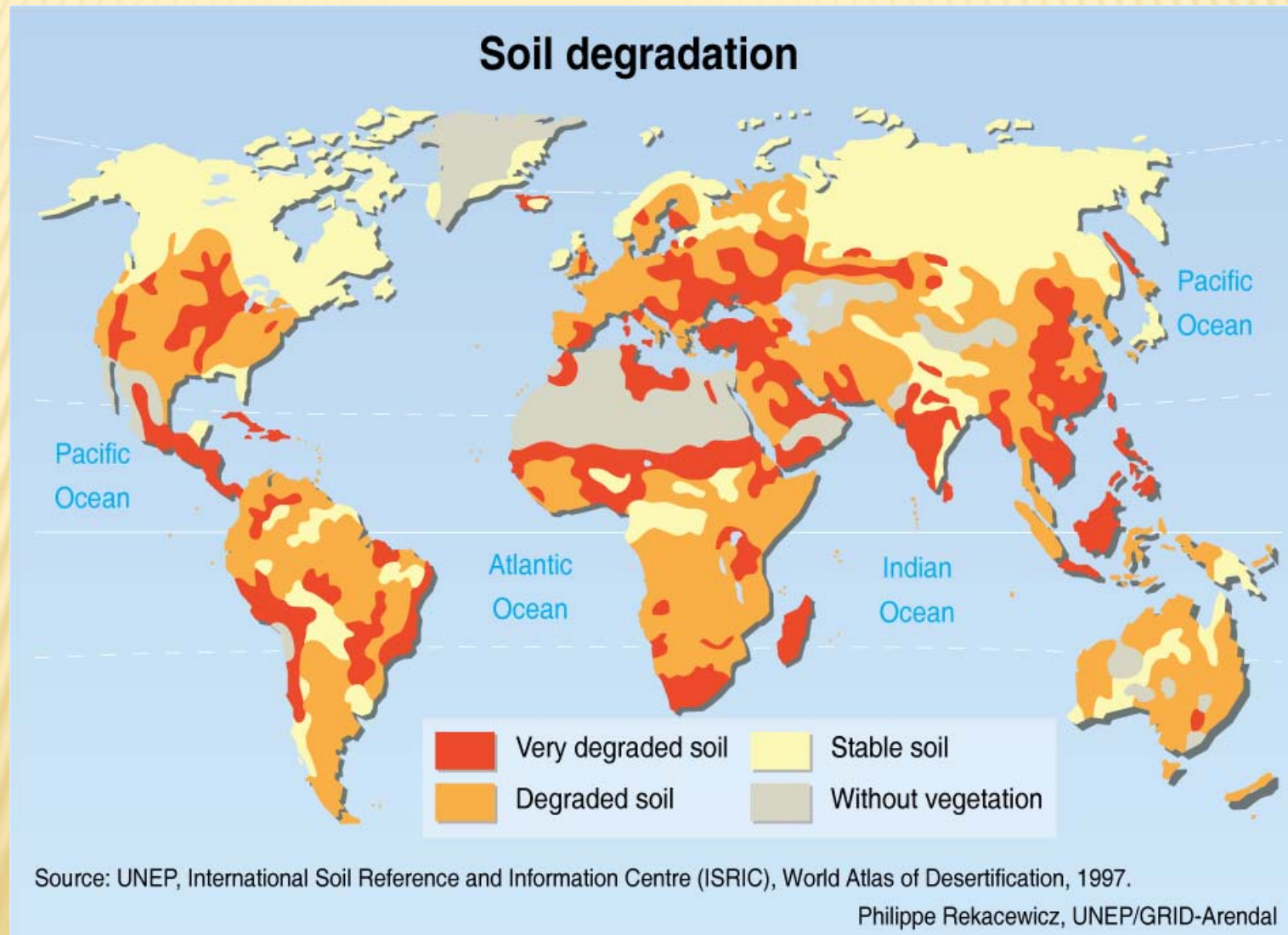




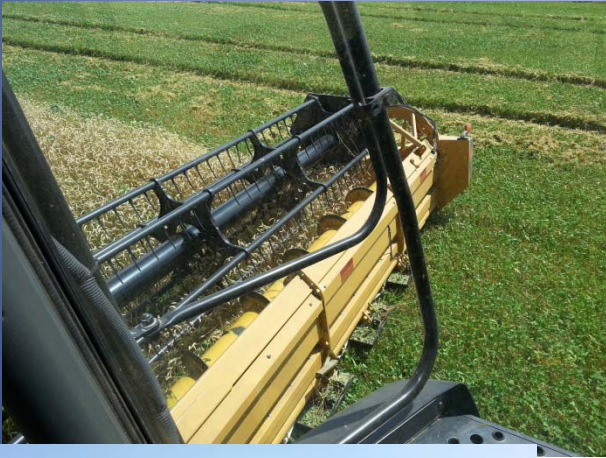
FOOD defined by your NEW BOSS

- Nutrient Dense-biologically healthy rich soil?
- Safe-no synthetic pesticides-Organic?
- Free from Antibiotics-Organic or non GMO?
- Free of Hormones-No implants? No soy?
- Type of fat-omega 3 vs 6 fatty acids
- Humanely produced-Free range on pasture?

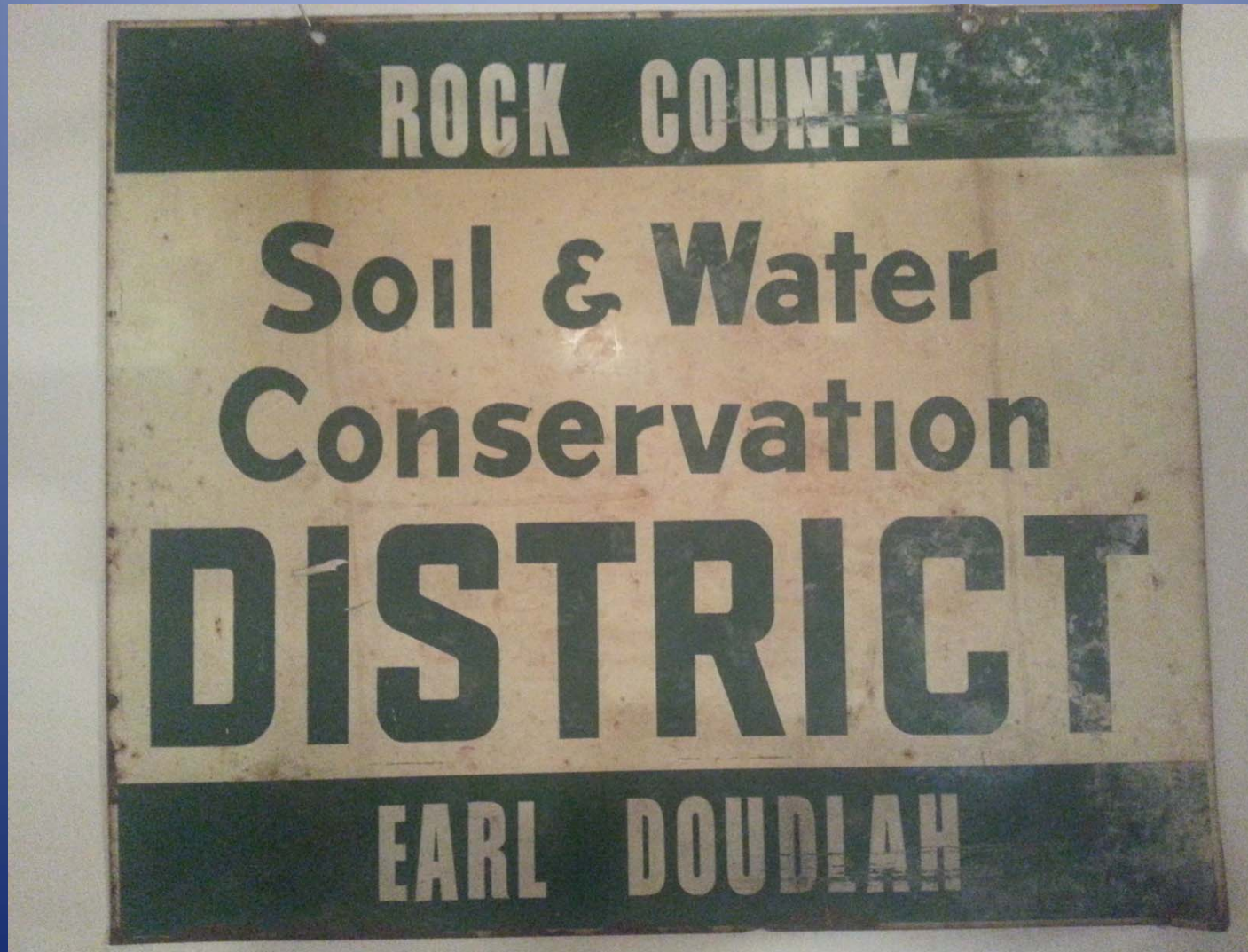
VULNERABLE AREAS OF THE WORLD



What is your “ONE THING”?



Earl Doudlah active Stewart of Soil & Water Conservation



My Dad Taught Me to be a Pioneer

- Early adopter
- Think outside the box for different results
- Do what is right - Don't worry about what people say
- Never give up- "Make it better"
- You can do anything if you put your mind to it.
- Dad was my ROCK, my mentor

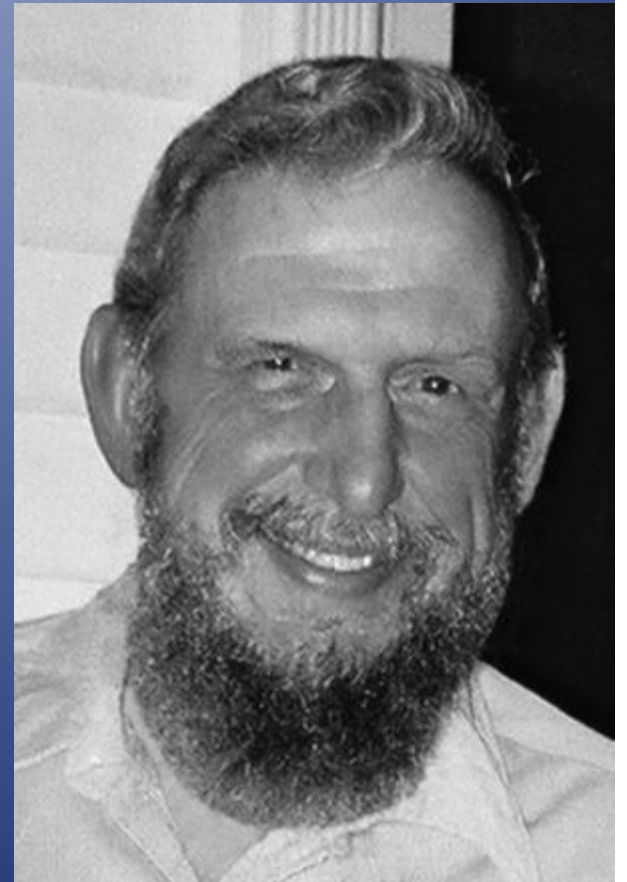


2008 Diagnosis Cancer

- Dad was diagnosed with Mantle-Cell Lymphoma. A Cancer of the Midwest!
- Transition 40 acres to Organics in 2008.
- Today 629 acres transitioning to 1455 acres
- Learn in conventional and implement into our organic acres- organic forces you to be a better biological farmer!

Lymphoma Doctors list of possible causes

- Exposure to Herbicides
 - Exposure to Insecticides & Fungicides
 - Exposure to Degreasers
-
- Dad passed away June 12, 2011
 - He was 73 years old



1990 Added Winter Wheat to Improve Rotation

- Vicon seeded wheat into standing soybeans w/hi crop tractor
- Ridge tops of winter wheat sometimes winter killed.



1992 Cover Crops-Oats

- Vicon seeded into standing Soybeans
- Made phosphorus more available.
- Recycled available Nitrogen
- Stayed green until Mid-January then winter killed



2003 Narrow Rows

- 15" Corn, Beans & Wheat
- Increase utilization of sunlight & Soil
- Faster canopy
- Decrease evaporation loss
- Aided in weed control.
- One Planter



2006 Relay cropping soy into wheat



2010 Vertical Tillage – Salford RTS

- Incorporate cover crop seed
- Size residue for biological digestion
- Inoculate with Residue & add food source
- Follow the combine if possible



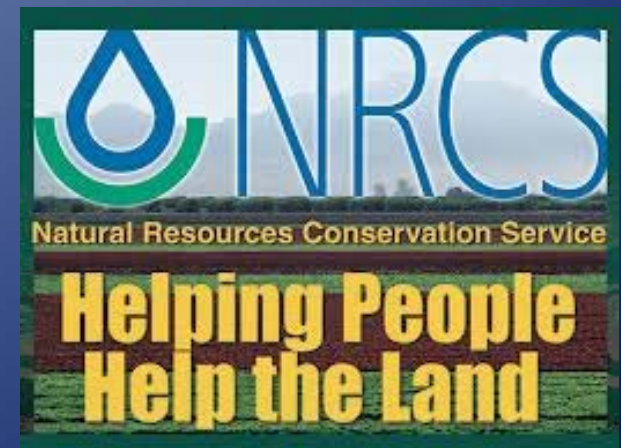
2011 Implemented Tracked Tramlines

- Improve soil health
- Increase infiltration and percolation



NRCS CONSERVATION PROGRAMS

- **Environmental Quality Incentives Program (EQIP)**
 - Cover Crops (340)
 - Residue and Tillage Management
 - No-till/strip-till/ direct seed (329)
- **Conservation Stewardship Program (CSP)**
 - Precision Application Tech to apply nutrients (WQL11)
 - Drift reducing Nozzle low pressure/low boom height to reduce pesticide drift (AIR04)
 - GPS, targeted spray application or electronic control technology (AIR07)
 - Control Traffic System (SQL01)
 - Plant tissue test and analysis to improve Nitrogen management (WQL04)



2012 cover crops on every acre

- Biological primer for soil prior to transitioning to Organic
- Annual Rye Grass Roots to 28" deep in fall



Rotation on Acceptable Tillage Fields (denotes cover crops)					crimpSOY(vetch)-crimpCORN(c. rye+clover)-plowCanning PEAS(optional Dr Forage peas)/DRY EDIBLES(wheat)-WHEAT(vetch)/tillage radish/mustard/buckwheat)-cploowDRY EDIBLES(med. red clover)-plowCORN(c. rye)																								
Rotation on HEL crimp only fields (denotes cover crop)					crimpSOY(c. rye+vetch)-RYE+VETCH(ver)illage volunteer vetch)-crimpCORN(c. rye)																								
Difficult hydrological conditions for Organic					MB 4010																								
2014					last pesticide		Crop	SQ FT		2015 crop							2016 crop							2017 crop					
Farm Group	Group Acres	Farm	acres	36 month date	2014	Inspection 1.1.6.14	Comment	Corn	P/DE	FG Soy	Wheat	Trit/vetch	Rye/Vetch	Forage Peas	Corn	P/DE	FG Soy	Wheat	Trit/vetch	Rye/Vetch	Corn	P/DE	FG Soy	Wheat	Trit/vetch	Rye/Vetch			
1 Corn(c.rye)-soy	191	Batty	78	summer 2014	C	7 Rye				78					78									78		-			
		Kens	78	summer 2014	C	15 rye				78					78									78					
		Casey 3	36	Organic	org C	4-6 PB Vetch				36					36									36					
		Brooklyn	122	summer 2014	C	6 oats 2-5 Vetch		122	x	x									122					122					
2 CORN(c.rye)-peas	225	Riley M	72	summer 2014	C	5 rye 1 vetch	better on hill		x	72								72					72						
		Monson S	31	summer 2014	S	6-8 oats			31					x				31					31						
3 SOY(vetch)	155	Birk 160	155	summer 2014	S	5rad 5rye 1.5 vetch .5 clover	low seeding rate=poor stand			155								155											
4 Peau/DE(wheat)	140	Cooksville North	50	summer 2013	DE	8oat 8vetch 8clover		50								50						50							
		Cooksville middle	20	summer 2014	C				20									20				20							
		Keehns Upper and East	30	summer 2012	DE	8oat 8vetch 8clover		30								30						30							
		Porter West	40	Organic	P,DE	8oat 8vetch 8clover	excellent	40							40							40							
5 Soy(vetch)-corn	133	Casey 2	36	Organic	P,DE	4-6 PB Vetch		36							36										36				
		Keehns	85	summer 2013	S	1 C Rye	thick residue	85								85								85					
		Porter East Tobacco	5	summer 2013	S	none								5		5								5					
		Porter East Center	6	summer 2013	S	none							6		6									6					
		Porter East Jeff garden	1	summer 2013	S	none							1		1									1					
6 Soy-DE	173	Tuttle	173	summer 2013	S	5 oat 2 vetch 1 clover			173									173											
7	296	Porter DJ Wilder	33	summer 2012	DE			33								28			5		33								
		Porter East South	43	summer 2013	S					43						43					43								
		M+D Lower	18	summer 2014	C						18									18									
		M+D Upper	21	summer 2013	S						21								21										
		Magnolia	72	summer 2014	S	9-16 oats 4-6 vetch	excellent no rye matt					72							72										
		Cooksville South	110	summer 2014	C							110							110										
8	115	Birk 40	37	summer 2014	S				37							37							37						
		Birk 80	78	summer 2014	S					78							78						78						
1,429 Totals			1,429					396	379	379	-	64	200	12	192	168	271	573	21	205	591	398	307	133</					

Two Rotations — mechanical action-CROP (cover crop)

Tillable Lands

- Year 1 disk-**DRY EDIBLES**(med. Red clover)
- Year 2 disk-**CORN**(oats)
- Year 3 disk-**Canning PEAS**(optional Or Forage peas)/**DRY EDIBLES**(med red clover + winter rape)
- Year 4 diskrip-**DRY EDIBLES**(wheat+daikon radish)
- Year 5 none-**WHEAT**(red clover/daikon radish/mustard/buckwheat)

HEL Lands

- Year 1 crimp-**SOY**(cereal rye + vetch)
- Year 2 **RYE+VETCH**(verticle-tillage volunteer vetch)
- Year 3 disk-**CORN**(cereal rye)

Plant Cereal Rye in place of your herbicide for Food Grade Soybeans

- 
1. 180 # Cereal Rye
 2. Residue + PL from AgriEnergy
 3. Dry Nutrients if needed
 4. 500+Hp to keep it rolling

Jeff Moyer of Rodale speaking at 2014 MOSES Conference

**MY
Ah-ha
Moment**

A photograph of a conference room during a presentation. A man in a dark suit stands on the left side of the room, facing a large audience seated at long tables. A large projection screen in the center of the room displays the text "MY Ah-ha Moment" in red. The room has wood-paneled walls and a drop ceiling with recessed lights. The audience is seen from behind, looking towards the speaker and the screen.

Weed Control - Get it right in the fall!



Cereal Rye Seeding

1. Its all about the Planting Date

- Prefer to follow the corn combine with seeder!
- Early to mid October is ideal

2. Seeding Rate is secondary - 3 bpa

3. Drill seeding more consistent than air plane

- Late wet corn harvest
 - Air plane only viable option?
 - Increase seeding rate 220#s+
 - Plant perimeter twice

Add 7.5 ton of biological active carbon while you plant!

Rye roots feed your soil biology and crop

Weather proof your soil and crop Yields



Crimped Rye

Field M & D- upper field

Rolled down June 4th. Projected 3-5 ton
dry matter



Don't Panic

Narrow rows will
close canopy

All rainfall will be
infiltrated

Cereal Rye will
maintain weed
control thru fall



No-till Clear Hilems- Keehn field

Doudlah Farms, Evansville, WI, July 23





No-till beans — Keehn Field

NOTE: weed control July 23

Soil Health for insect control

- High sugar content & plant sap pH
 - Brix meter
 - 6-10 susceptible to insects
 - 11-16+ susceptibility decreases
 - Insects do not have a pancreas and cannot digest sugar
 - Maybe insects were put here to prevent us from eating low nutrient content non healthy plants?
Are your soils rich balanced and bioavailable?

Notill beans — Keehn Field

Doudlah Farms, 47 bu/ac



Planting Oats Vetch and Clover for Corn



Green Sickle



Aroostook Rye and Purple Bounty Vetch?



Gear up for timely cover crops



The map shows the United States divided into four colored regions: Western Area (blue), Central Area (orange), Eastern Area (yellow), and Southern Area (grey). A yellow star is located in the Central Area, and a red star is located in the Eastern Area. Arrows point from the yellow star to the red star and from the red star to the yellow star, indicating a bidirectional relationship. The map also shows state abbreviations and a legend for the four areas.

- ❖ 2017 – 1,400+ acres will be ORGANIC Thank You Rodale Institute !**

Rodale and Cover Crops made it possible on my farm!

- Nutrient rich dense safe food-Organic
- Soybeans most erosive crop...to regenerating soil
- No Pesticides
- Reduced my time in field
 - Increase my management in other areas
 - Time with my family
- Increased my profit margins
- Organically-Sequester carbon to “save our planet”

Doudlah Farms Field Day, Standing room only!

Kentucky, North & South Dakota, Minnesota, Michigan, Iowa,
Illinois, Wisconsin, Georgia



2017 Organic Field Day August 10th.

Cover Crops to transition your farm in 3 years to ORGANIC ?

- T1-Improve soil tilth & break weed cycle
 - 4010 speckled forage peas plant early in spring
 - 1.5 bpa
- T2-Improve soil tilth, smother weeds and add N
 - Plant Poly crop
 - Aroostook Cereal Rye 1.5 bpa
 - Purple Bounty Vetch 22#/ac.
- T3 Organic
 - \$9.00 organic corn

4010 Speckled Forage Peas



Lodged Aroostook Cereal Rye with Purple Bounty Vetch







Aroostook
Cereal Rye
&
Purple Bounty
Vetch



Crimper better than
Smooth Roller



Organic Corn starts with aerial frost seeding Medium Red Clover into growing Winter Wheat



Growing Nitrogen after Wheat



Organic Corn – Red Clover plow down

- Note sprayer pass with Residue



Supercharge your corn seed

- Myco seed treatment on seed
- Chilean nitrate 2"x2" placement
- Fish, SP-1, Molasses, Bio Repel, Ecotec, Mycotrol O in the Seed Trench



Don't risk your high value organic crop by planting NAKED

Corn 40 days after planting

Doudlah Farms, Evansville, WI





2nd crop out of CRP
Following wheat/clover in 2013
< 25# added N in 2014
= 201 *bu/a Organic Corn in 15" Rows*



Purple Bounty Vetch ahead of
Corn- also over 200 bpa



Corn after Purple Bounty Vetch



Tillage vs No-Till-Crimp



Crimping Purple Bounty Vetch



No-Till into Crimped Vetch and Rye



Tillage vs. No-Till-Crimp



No-Till-Crimp



Crimped No-Till Organic



Ideal No-till Environment for Corn



No-till Crimped Organic Corn

- Planted in fall
 - Oats, sorghum and daikon Radish in 15” rows
 - Lynx winter pea in twin 5” rows in between
- No-till corn into winter killed 15” rows
 - Daikon radish acts as early gas tank for early corn developmental nutrients
 - Crimp V2 or V3 corn
 - Crimp flowering Lynx winter pea for long term nitrogen needs
 - Lynx winter pea failed to emerge due to skin check damage during processing

N - Lynx Winter field peas in twin 5"



Frost Terminated – Oats, Radish and Sorghum in 15" rows



Loading 5 way Cover crop zone mix



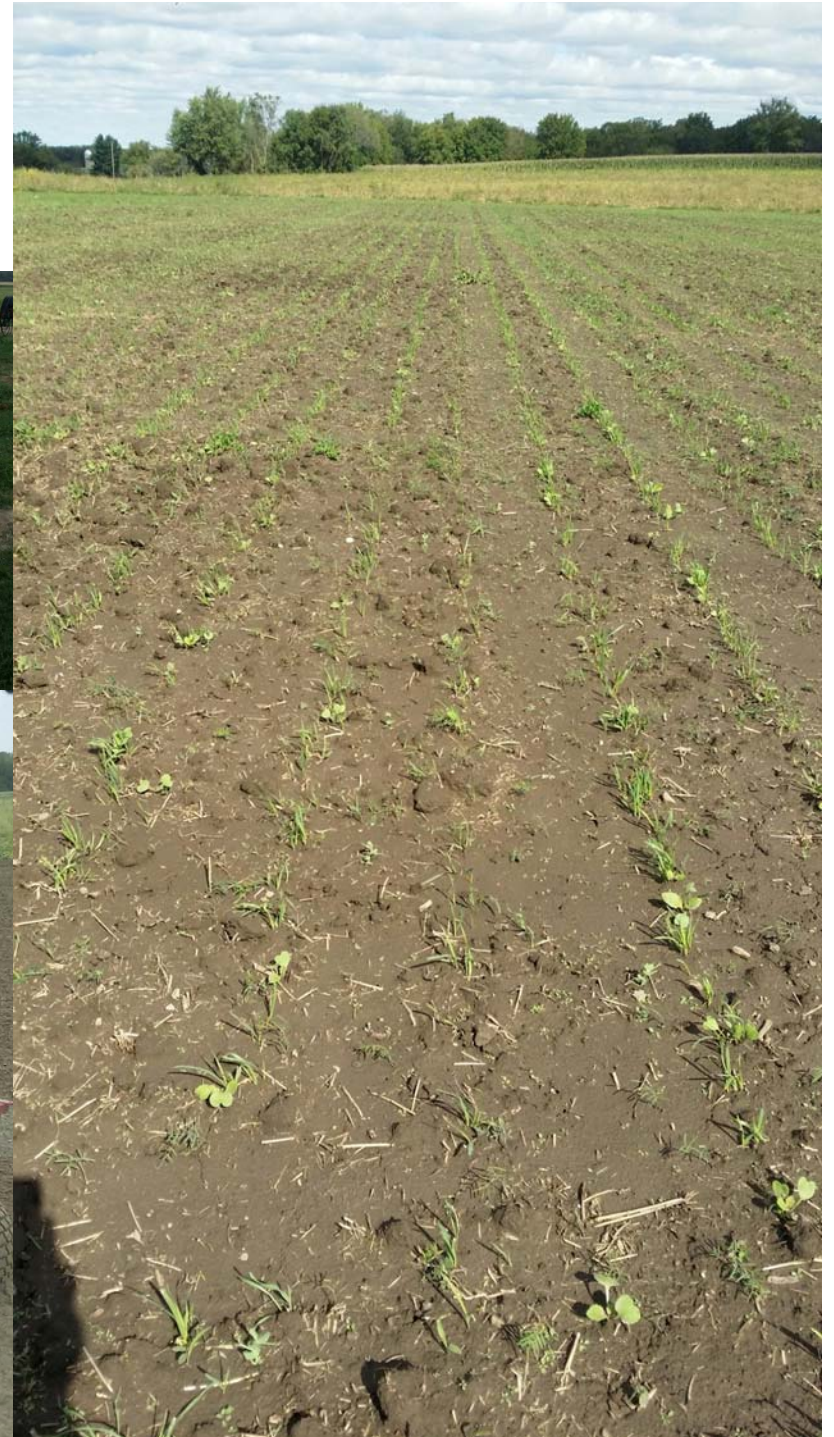
Humic Substances



Bio-strip-till-crimp cover crop experiment



NT Organic Crimped Corn



Winter Pea & Vetch Breeding Program- USDA Grant



White Parks on rotational
paddocks



Egg Layers on White Clover Grass



Mobile Egg Layer

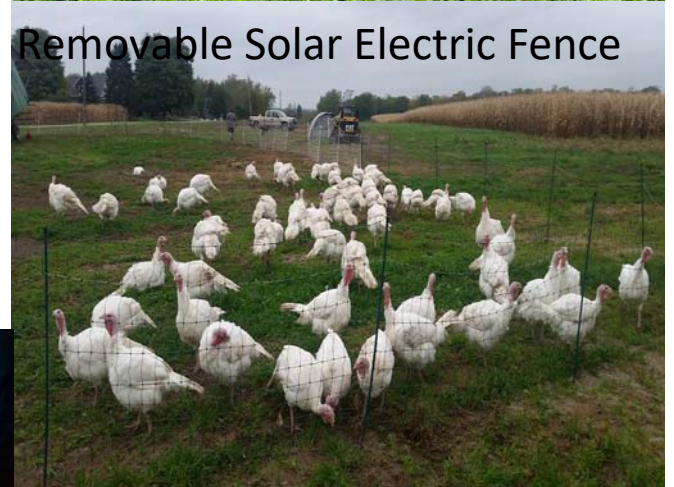


Cover Crops allow us to Direct Marketing our farm

Birks on Pasture



Removable Solar Electric Fence



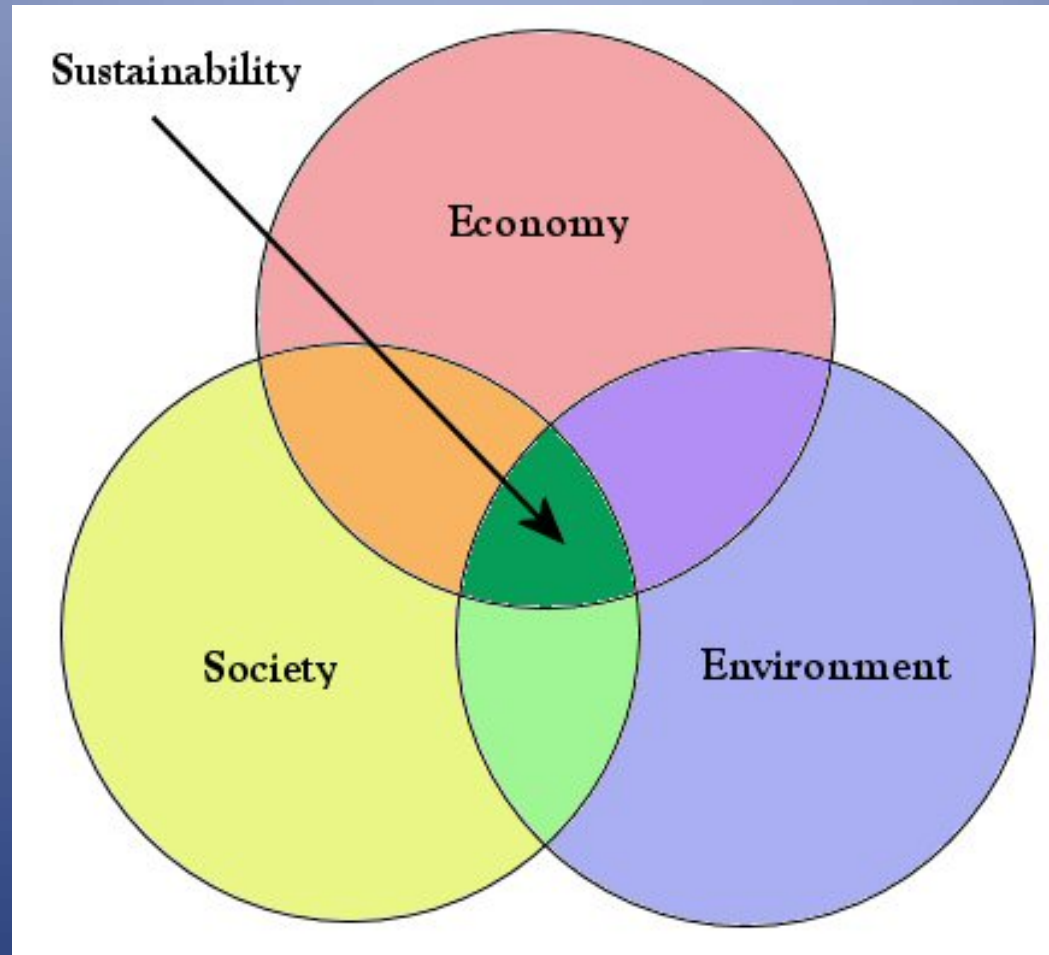
Pastured Turkeys



How we use COVER CROPS

- Nitrogen production-legumes and N fixing bacteria(soil health)
- Build organic matter %.....nutrients, water holding capacity & resilient
- Solubilizing nutrients in soil
 - Each CC species expresses it's unique nutrient release thru soil microbes
- Armor soil to eliminate:
 - Erosion
 - Surface Puddling (crusting) ...buildup of CO₂ causes further weed germination
 - Runoff....free irrigation...increase infiltration and percolation
 - Evaporation
- Consistent 365 day food source for microbes
- Weed control - both mulch and allelopathy expression
- Reduce/eliminate the use of herbicides, fungicides, fumigants and insecticides that kill off beneficial soil life
- Reduce/eliminate the use of toxic fertilizers that kill off beneficial soil life. SOP, TN Brown-soft rock phosphate
- Produce and Market **pasture based** livestock without antibiotics
- Makes ORGANIC farming - possible, profitable, regenerative and environmentally sound

Regeneration of Soil Health



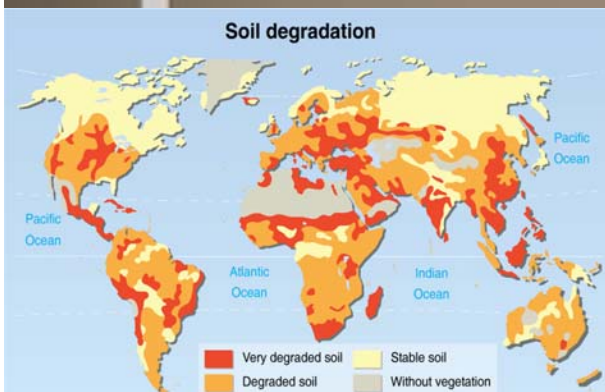
Short Term
vs.
Long Term
Profits

Health care cost
vs.
Rx Nutrient
Dense Safe Foods

Degrading soil
health &
water quality
vs. Healthy
Soils.

*"A nation
that destroys
its soil
destroys itself."*

-FDR

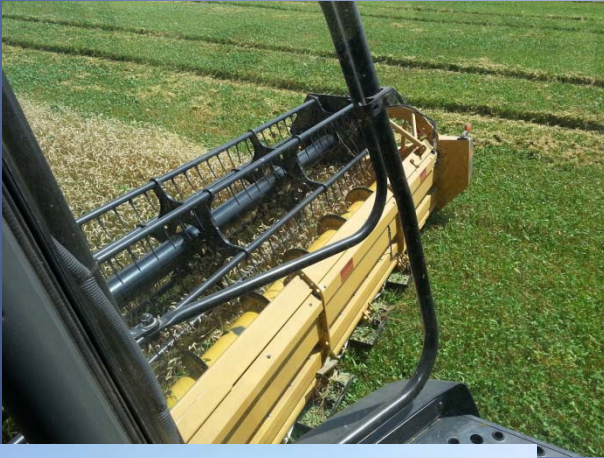


Cover Crops has taken Doudlah Farms to FarmRite Organics



providing nutrient dense humanely
raised safe-food!

What is your “ONE THING”?



<https://drive.google.com/open?id=0B0lviB5GxYPnSTNwbEVGc2hxcVlk>