

# Using Cover Crops and No-Till for Vegetable Production

Steve Groff  
The Cover Crop Coach





# Started No-Till in 1982- Erosion





# 100 ft from ditch



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# 1<sup>st</sup> Cover Crop Roller in U.S.- 1995



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# Birthplace of Tillage Radish- 2001



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# Got to Meet a Kangaroo!



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# Tillage Radish in Australia- 2015



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# Cover Crops for Vegetables in Australia



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# Farming Secrets



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You can't **BUY** soil health: It has to be **MADE!**



Management!



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30 years ago!



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# Soil Covered with Living Roots all Year



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# Treat Cover Crops Like Cash Crops!



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# Can we do better?



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# Robert Hinricksen- Queensland, Australia



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# My History



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# No-till Transplanted Tomatoes



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# No-Till Processing Tomatoes



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# No-Till Processing Tomatoes



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# Sep 21, 2019- Prepping for 2020



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# Weed Control and Fertility



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# Let's Roll!



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# Biggest Challenge...



Weed Control

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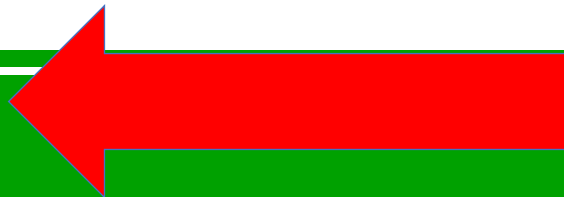
# Here's how it's done



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# Cover Crop Residue Slicer



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# Clean pumpkins=value added







Over 75% of Pumpkins  
in PA are now no-tilled





# One-Row No-Till Planter



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# No-Till Water Wheel Transplanter



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# Oxen Drawn One-Row No-Till Planter



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# Transplanting



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# Transplanting- Up Close



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# Transplanting- Up Close



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# Weed Control and Fertility



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# Managing the Cover Crop

- 
- ✓ Proper seeding rate
    - Field fertility
    - Planting date
  - ✓ Species mix options
    - Legume to grass ratio
    - Will affect fertility needs for vegetable crop





# Managing the Cover Crop

## Seeding Rates

- ✓ Cereal Rye- 40lbs
- ✓ Hairy Vetch- 15lbs

## When in a mix

- Oats- 10lbs
- Radish- 2lbs
- Oilseed Rape- 1lb





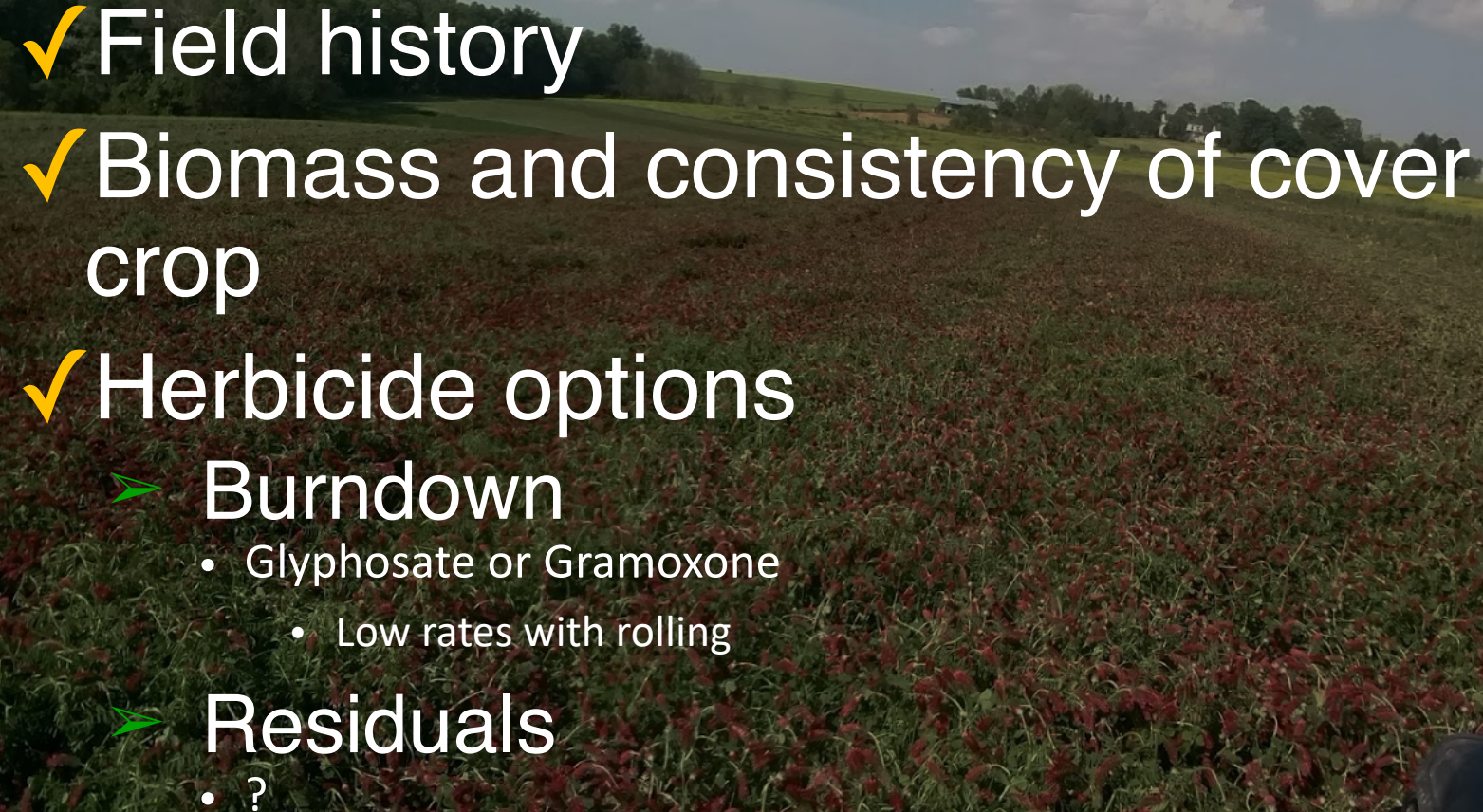
# Managing Fertility

- 
- ✓ Field history
  - ✓ Species of Cover Crop
    - Cereal rye/triticale needs over 100lbs of N
      - Need N early!!!!
    - Hairy vetch/crimson clover might only need 40-60lbs N
      - No N early- possibly none...
    - Mixes species- adjust as needed





# Weed Control

- 
- ✓ Field history
  - ✓ Biomass and consistency of cover crop
  - ✓ Herbicide options
    - Burndown
      - Glyphosate or Gramoxone
        - Low rates with rolling
    - Residuals
      - ?





# Nice Mix!



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# Managing Termination



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# Row Mower



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# Row Mower



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# Watermelons/lopes on Plastic

## OPTION #1

### Plastic laid in fall

- ✓ Lay plastic
- ✓ Immediately broadcast 2 bushel cereal rye
- ✓ Plant with waterwheel planter in spring
- ✓ Terminate cereal rye with a grass herbicide at head emergence





# Plastic Laid in Fall- Cereal Rye Broadcast



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# Cereal Rye With Plastic



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# Nice Lopes!



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# Watermelons/loped on Plastic

## OPTION #2

### Plastic laid in spring

- ✓ Lay plastic
- ✓ Immediately broadcast 2 bushel spring oats
- ✓ Plant with waterwheel planter
- ✓ Terminate oats with a grass herbicide at head emergence





# Plastic Laid in Spring- Oats Broadcast



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# Spring Oats With Plastic



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# Row Middle Roller/Sprayer



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# The Roller



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# Row Middle Roller/Sprayer



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# Sweet Corn Planted into Hairy Vetch



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# Bulgaria



Planting Green-No Till Squash

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# Bulgaria



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## To protect soil

*Objective: to preserve natural land, which continues to play its role in the ecosystem (such as draining water to avoid flooding).*

There is, of course, the famous crop rotation technique, already widely practised by our partners farmers, as well as **vegetation cover, organic fertilisers and less ploughing.**



AGRICULTURE

## The big agroecology transition in our fields



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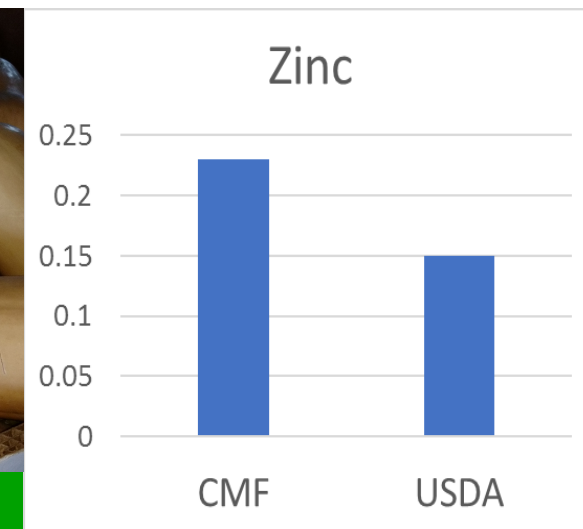
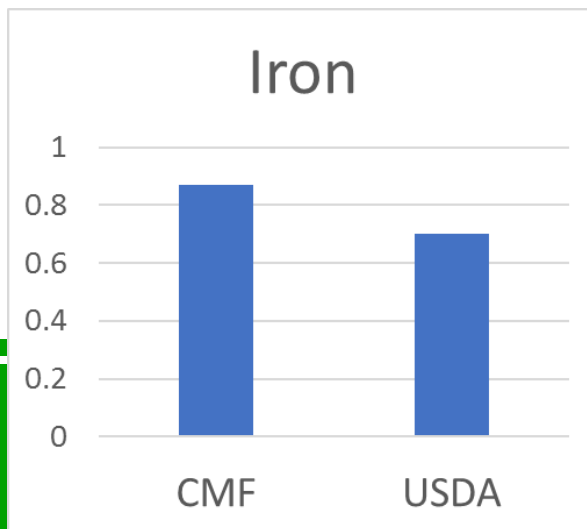
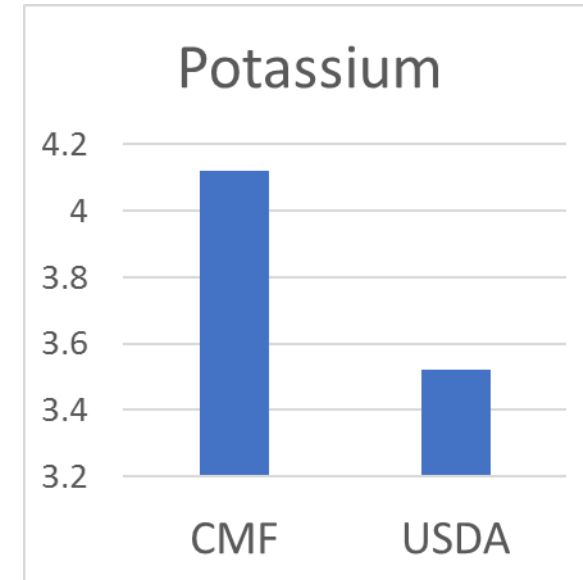
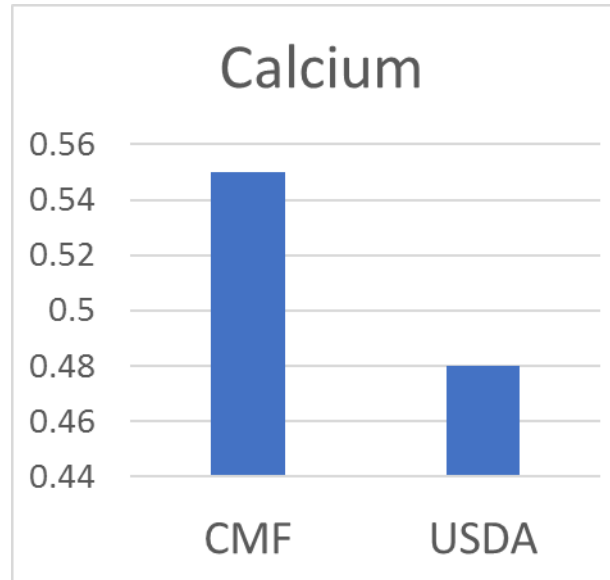
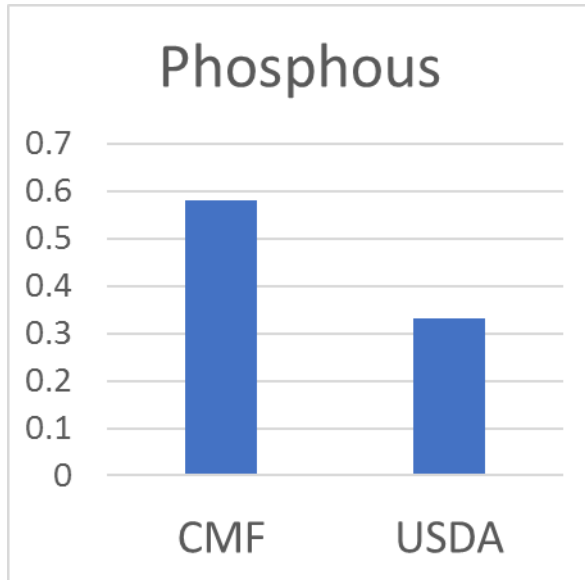
# Companies who have a Plan

- ✓ General Mills
- ✓ Land o Lakes
- ✓ Campbells Soup
- ✓ Tyson Foods
- ✓ Pepsi
- ✓ Wrangler
- ✓ Phillip Morris
- ✓ Whole Foods
- ✓ Blue Apron
- ✓ Sweetgreen
- ✓ Cargill
- ✓ Walmart
- ✓ Coca-Cola
- ✓ ADM
- ✓ Bonduelle





# Does Nutrition Hold the Key?





# The Soil Health Difference



Long-Term No-Till/  
Cover Crops/Diversity

Full Tillage/no covers  
until this year



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# Sweetgreen





"Steve Groff is not only a true innovator, but a visionary who shows us the path to a healthy future!" *Gabe Brown- Farmer and Author of Dirt to Soil*

"If you want to be successful and make a lot of money farming, you should only accept advice from farmers who have achieved the same goals you are striving for. This book is your chance to glimpse how a very successful farmer and farming coach thinks differently about agriculture and food production."

*John Kempf- founder of Advancing Eco Agriculture*

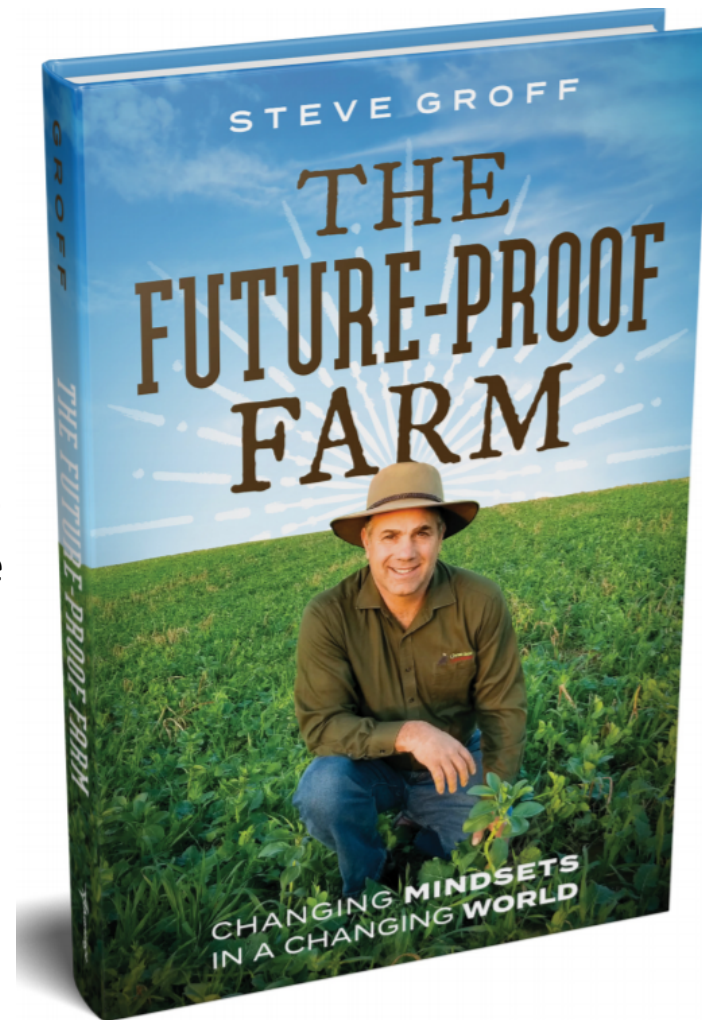
Whether you're a farmer, or someone else who wants to know more about regenerative farming, this book shows how cover cropping and related practices are beneficial for the soil and profitable for the farm business, at the same time.

*Michael Rozyne, founder Red Tomato, and co-founder Equal Exchange*

"The *Future Proof Farm* is a wakeup call to us as agricultural producers. It is time to open our eyes and meet our new bosses and start delivering what they are demanding."

*Keith Berns, Co-owner and Sales Manager Green Cover Seed*

Coming Summer of 2020!



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# Challenges



Knowing how to manage the cover  
crop

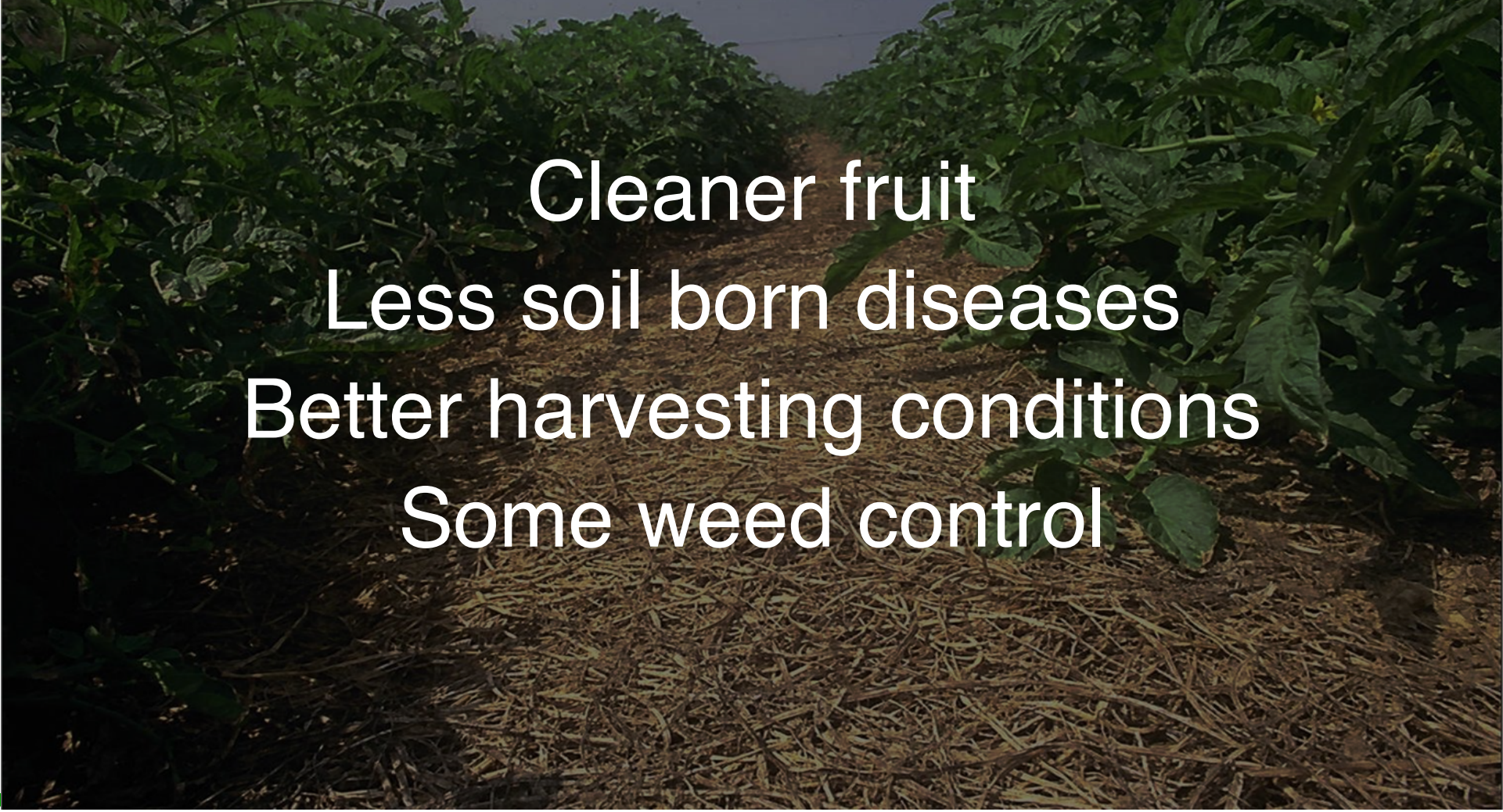
Proper equipment and setup

Understanding fertility needs





# Benefits



Cleaner fruit  
Less soil born diseases  
Better harvesting conditions  
Some weed control





# The “Profit” is in the Management!



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Cover Crops make  
good farmers  
**better**  
and bad farmers  
**worse**

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# Soil Health- It's our Future!



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# 10% COVER CROP CHALLENGE

*Increase your cover crop acreage by 10%  
WITHOUT costly mistakes!*

1. FARMERS trying cover crops *for the FIRST TIME*
2. FARMERS looking to take cover crops *to the NEXT LEVEL*
3. CONSULTANTS, TRAINERS OR EDUCATORS seeking *a specific plan for their clients*





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*Steve Groff*

HOME

ABOUT STEVE

APPROACH

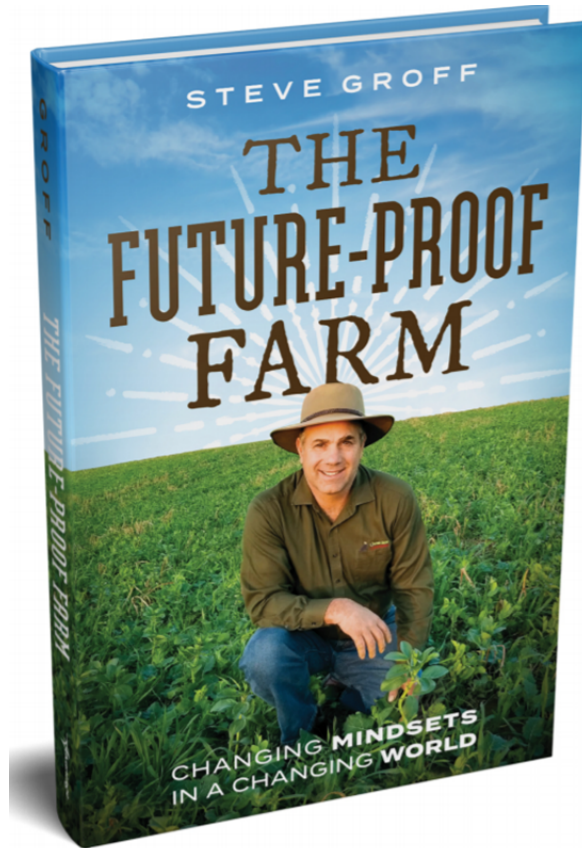
GROW

EVENTS

CONTACT



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