

# National Cover Crop & Soil Health Conference

## Cropping Eastern U.S. Perspective

Steve Groff  
Cover Crop Coaching



# Planting Green 1984



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



# Birthplace of Tillage Radish- 2001



# Soil Covered with Living Roots ALL Year





# 5 Common Mistakes to Avoid When Planting Corn Into Green Cereal Rye

# #1. Avoid the Potential to Lodge



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Keep seeding rate low

- 30lbs/A early
- 60lbs/A late

Know your fertility levels

- Be careful with manure application

Plan around weather events



# Roll/crimping Cover Crops



Racing before the storm!



# Roll/crimping Cover Crops



Racing Before the Storm- 2 am!





# Pequea Planter Cover Crop Slicer

## #2. Not enough nitrogen in or very close to row



## #2. Not enough nitrogen in or very close to row

Nitrogen in Starter- In Furrow!

Season nitrogen needs to be “up-front”

- Somewhat dependent on cereal rye

Maturity at termination

Understanding allelopathy

# Assume no available N



# #3. Seed not deep enough



# Need to eliminate hairpinning



# #3. Seed not deep enough

Deep enough to cleanly and consistently cut residue

- 2-2.5" deep
- Check a few times to make sure

# If air or hydraulic down pressure...



# If air or hydraulic down pressure...



Remove coulters  
Use 3.5mm disc openers

# Row Cleaner height



# Check Seed Tube Protector



# Can't plant across mature stems





# Pequea Planter Cover Crop Slicer

# #4. Seed Trench Not Properly Closed



# Where is the row?



# Monosem Closing Wheel Adjustment



# Wrapping on closing wheel?



# #5. Termination Timing

## Before planting

- Moisture?
  - Dry/no rain in sight
    - Consider terminating early
  - Wet or rain forecast
    - Only terminate what you can plant before expected rain
- Spreading manure before spraying

# #5. Termination Timing

## At planting

- With or without roller/crimping
  - Spray 2 days before
  - Soon after planting

# #5. Termination Timing

## After planting

- Before corn emerges
- If wet and RR corn, can wait longer

# Planting into Heavy Covers



# Jim Hershey/Brian Zimmerman



Pennsylvania



# Dawn Biologic roller/crimper



# Taking Cover Crops to the Next



## Proper Equipment



# It'll bug you!



# My goals...



# Understanding Allelopathy of Cereal Rye when Planting Corn

## Misdiagnosis of Allelopathy

Corn is a large seed and relatively unaffected by allelopathy. It is planted around 2 inches deep- below the area where allelopathic chemicals typically reach. But slow growing “yellow” corn, especially planted early into a terminated cereal rye cover crop, is



# Understanding Allelopathy of Cereal Rye when Planting Corn

## Misdiagnosis of Allelopathy

The soil typically is a little cooler so early growth may be affected by that. It's easy to understand why many diagnose this symptom as allelopathy.

# Understanding Allelopathy of Cereal Rye when Planting Corn

## Nitrogen Management

Cereal rye will essentially take up all available nitrogen by the time of termination before planting corn. It is paramount that nitrogen is placed on or very near the corn seed at planting.



# Understanding Allelopathy of Cereal Rye when Planting Corn

## Nitrogen Management

Use a form of nitrogen that doesn't inhibit corn germination- placed in-furrow

- Low salt type nitrogen fertilizers
- Or broadcast nitrogen

# Understanding Allelopathy of Cereal Rye when Planting Corn

## My method

- 1 gal 28%
- 2 gal biological stimulant/micros
- 1 gal water

# Understanding Allelopathy of Cereal Rye when Planting Corn

## Nitrogen Management

Regardless of how nitrogen is applied, it needs to be IMMEDIATELY accessible to the very young corn plant! Cereal rye will give some of the nitrogen back eventually but it'll be near the end of the corn growth period



# Controlling Annual Ryegrass



Know the Rules!!

# Need to have a Plan



# Understanding Annual Ryegrass

Deep Roots  
+ Less Biomass  
+ Waxy leaf  
+ impure seed  
= Challenge to control

# How/When to Terminate Annual Ryegrass

Comfort level  
Stage of growth  
Soil Moisture  
Making spray water



# Controlling Annual

## Ryegrass

Need to plan ahead

Especially if new to practice, may want to plant Roundup Ready crop.

Easier to kill when smaller

Need to review basics.



First node

# The Rules for Glyphosate

use

**NOT like spraying RR beans in  
June!**

**Make SPRAY WATER first**

**Adjust water ph to 4.5 and  
hardness to less than 3 gpg**

**Use AMS, Citron, or other additive**

**Spray between 9 a.m. and 3 p.m.  
on a 60 degree sunny day**



# The Rules for Glyphosate

- Apply 1.5 to 2 <sup>use</sup> qts. with 8-12 gallons water per acre
- Do not mix with residuals
- Scout fields to observe termination effectiveness
  - Have a plan B if needed to follow-up
  - Suggestion: Add 1 pt of Gramoxone with residual (before emergence)



# Other Options

Select/Poast/Clethodim- yes  
Gramoxone- no?

# The Moisture Factor/Timing



**Annual Ryegrass should to be terminated early if it's dry and no rain is in sight.**

# Controlling Annual Ryegrass



Kill it dead!

# Planting Green- Maximizing N



Control with 1.5 qts. Glyphosate and 1 pt. 2-4,D



**COVER CROP**  
**COACHING**

**Terminating Crimson Clover**



**COVER CROP**  
**Innovators**

# Planting Green- Maximizing N



Control with 1.5 qts. Glyphosate and 1 pt. 2-4,D  
Terminating Hairy Vetch



# Planter fixes to avoid catching biomass



# Non- wrapping row cleaners



# Row Cleaner adjustments



# Planting Green- Tall Cover Crop



# Roll/crimping Cover Crops



# Maybe too “yellow” for a John Deere??



# Air intake clogged



Watch the  
Temperature  
Gauge!



# Radiator Screens plugged



# Reversible Fan



# Dew- Early in the Morning



# Triticale seems to have less pollen



# No Neonics??

Non-Target Secondary Kill  
Slug predators- Carabid Beetle



# Ground beetles are the LIONS of no till fields!



Dr. John Tooker, Penn State University



# Untreated Seed



# Bulgaria



# Bulgaria



# Weed Control with Planting Green



# Planting Green can = Green Corn



# Planting Green- we've come full circle



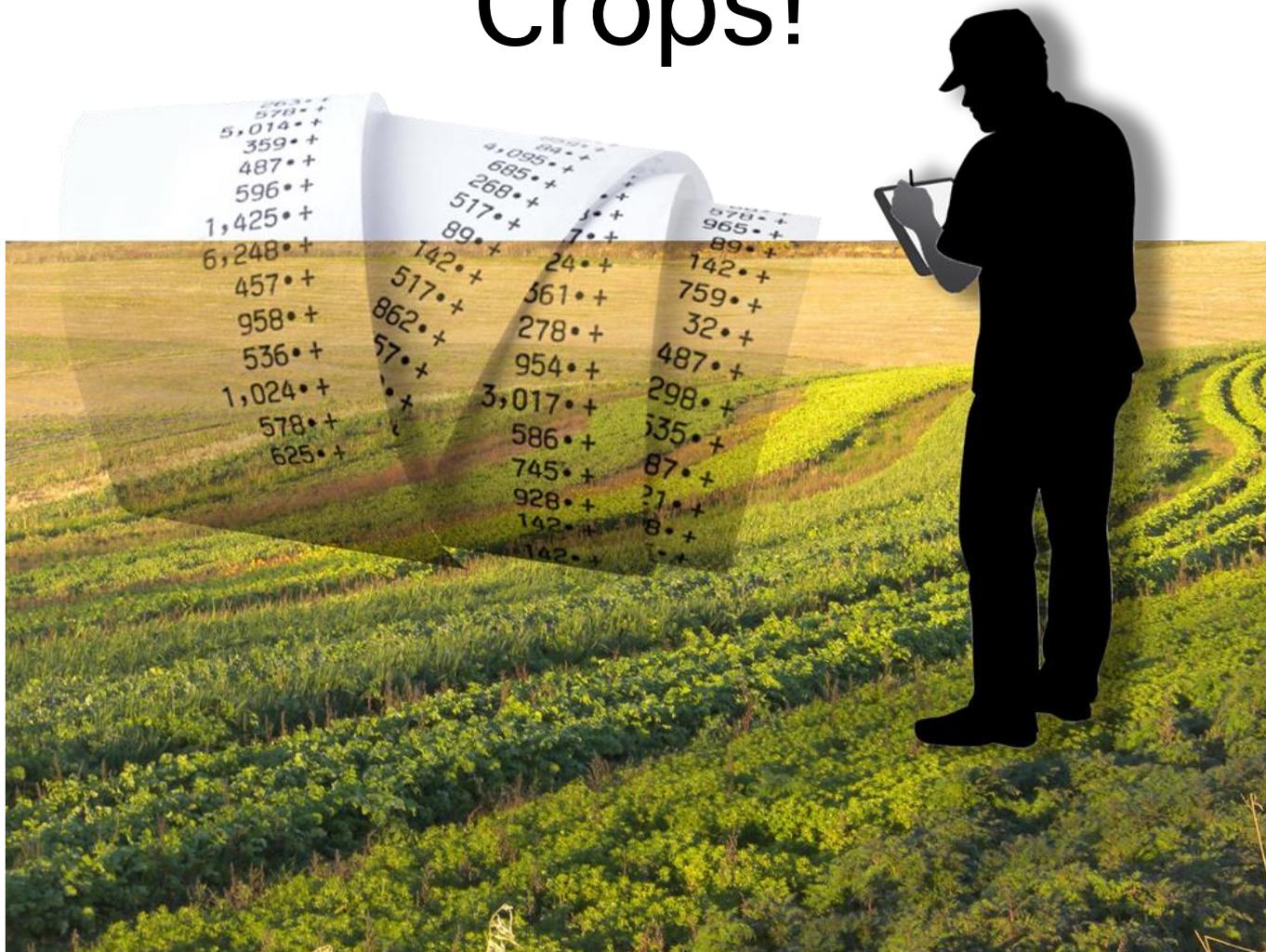
Year 2- 80lbs N; \$5 herbicide= 27T Silage



# The Effect of Crimson Clover



# Treat Cover Crops Like Cash Crops!



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