National Cover Crop & Soil Health Conference

Cropping
Eastern U.S. Perspective

Steve Groff
Cover Crop Coaching
1st 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
#1. Avoid the Potential to Lodge

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 coulter
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?

Deflector
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
Dawn Biologic roller/crimper
Taking Cover Crops to the Next Level

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 common.
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 use

- Apply 1.5 to 2 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?
Annual Ryegrass should 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

Terminating Crimson Clover
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!
CoverCropInnovators.com

@covercropcoach