

Coffee and Interseeding Meeting Minutes  
December 15, 2020  
8:00am to 9:30am

Participants: Greg Lake, Mike Werling, Andrea Bearman, Tom Miller, Jon Smith, Stephanie McLain, Scott Thompson, Gary Weilbaker, John Wallace, Don McLain, Andy Scheiderer, Roger Hadley, Larry Sudhoff, Jamie Bultemeier, Brent Brenneke, Joelle Neff,

Welcome:

- Greg welcomes the group; shares Clean Water Indiana and its connection with this program.
- Brief overview of the program.
- Mike suggests the future of the program would be a rig that is available for Amish that can be pulled by two horses.

Speaker: Dr. John Wallace, Pennsylvania State University, Associate Professor of Weed Science:

- Filled Bill Curran's position. He was a post doc at Penn State for several years
- He worked directly under Bill. He has worked with Greg Roth and Bill Curran (and Corey Dillan).
- This is a high-clearance grain drill that is 36 inches tall (refer to picture)
- Drill-seeding
  - o Increase seed-to-soil contact in no-till systems.
- Species Selection
  - o Shade tolerant species like annual ryegrass, medium red clover, and daikon radish
  - o Many species have been tried, but annual ryegrass seems to be the best, at least for Pennsylvania.
  - o Crimson clover does okay. Hairy vetch and cowpeas are not very good.
  - o Radishes are very responsive to nitrogen and sunlight.
  - o Mixtures are fine but they complicate herbicide programs.
- Interseeding Timing
  - o Minimize potential for corn yield drag while maximizing cover crop growing season window
  - o Wallace tries to push it early to V4 but the window for Pennsylvania is V4-V6.
- Herbicide Programs
  - o 1-pass programs (post glyphosate pass just prior to interseeding)
  - o 2-pass programs (set-up (light) PRE residual with POST glyphosate)
    - Example:
      - Verdict (outlook and sharpen) MOA (15/14) Rate (11-13 oz.)
      - Outlook/Basis Blend (acetcolor+matrix/harmony) MOA 15/2/2 Rate 1 pt./0.8 oz.
- Current Field Research:
  - o Soil conservation benefits: interseeding vs post-harvest seeding
  - o Increasing persistence of interseeded CCs in high-yielding corn
    - Interseeding timing
    - Row spacing
    - Lower plant populations with flex ear hybrids
    - Species selection
  - o 2-pass herbicide programs for interseeding over crop mixtures

- Cover crop sensitivity to residual corn herbicides
  - Multiple mod-of-action POST programs
  - Overlapping residual approach
- Question:
  - What brand of drill was used?
    - Esch brand is working with Interseeder Technologies
- Question:
  - Have you done any work with shorter corn hybrids that would help interseeding work better?
    - No, we haven't; we have not looked at maturity length. We have 95-day corn that yields well and opens the canopy up quicker.
- Question:
  - Have you looked at leaf structure on corn?
    - We have a study on that right now, working with our local seedsman. We are looking flex ear vs determinate ear; some varieties are more relaxed vs some that are more up right.
- Question:
  - Would it be best for an interseeder on a side dress rig?
    - That's one of the basic options that is being explored.
    - Regardless, there is a big-time restraint involved, but a side-dress could help with that.
- Question:
  - Have you worked with PA No-Till Alliance?
    - Yes, we have. We don't have widespread usage of interseeding in PA

Speaker: Stephanie McLain, NRCS Soil Health Specialist, Indiana

- Soil Cover (cover=protection)
  - Soil cover is the percent of the soil surface that is covered by plant residue, organic mulch and/or live plants.
- Cover=Protection
  - Reducing soil temperature swings
  - Less evaporation
  - Soil Life
  - Raindrop impact
  - Infiltration
- Residue Breakdown
  - Natural shredding and decomposition of residues
  - Don't want a corn stalk to see its 3<sup>rd</sup> birthday
  - Indicator of nutrient cycling
  - Biological activity
  - C:N Ratios
- Surface Crusts
  - Building aggregates and preventing crusts
  - Crusts prevent water infiltration
- Don't want to be interseeding below 40-degree latitude and west into Nebraska/Kansas. They have more growing season in the south and it is dryer farther west.
- Question:

- How close is this to I70?
  - Good question, it is close to the latitude in Indiana
- [mccc.msu.edu/covercrottool/](http://mccc.msu.edu/covercrottool/)
  - Available cover crops in the Midwest.

Open Discussion

- Annual rye grass, crimson clover, oilseed radish was planted in all of the plots we planted. The clovers didn't really survive or were very small
- Question:
  - One of the unforeseen issues that is the residue is smothering the cover crop. Do we see these issues?
    - We have seen that some cover crops outlive even the herbicides.
- Question:
  - Have you tried different herbicide programs?
    - We have allowed producers to use their own herbicides
- Shared from John Wallace, below:

### Relative Sensitivity Table

	Zidua	Dual	Outlook	Harness	Prowl
Annual ryegrass	5	5	5	5	4
Sorghum sudan	3	3	3	3	3
Cereal rye	T	2	2	3	T
Triticale	T	2	2	4	T
Medium red clover	3	2	5	5	2
Crimson clover	3	4	4	5	2
Hairy vetch	2	3	3	5	2
Austrian winter pea	1	3	2	4	2
Winter canola	5	T	T	3	T
Forage rape	5	T	T	1	T
Daikon radish	4	T	T	2	T
Buckwheat	5	3	5	5	1

SCALE: Estimated ED<sub>50s</sub> using nearest half-life value; T = tolerant (ED<sub>50</sub> > 1X rate).



- Question:
  - What advice would you (Stephanie/John) recommend to a newbie to cover crops?
    - Make sure you have experience with cover crops in general
    - Don't half-a\*\* it.
    - Practice.

- Interseeding isn't the easiest thing to get into; know what your goal is. We know what the array of benefits are for cover crops (and challenges). What is interseeding going to get you that post cover crops aren't going to do for you? What resources do you have?
- Question:
  - We have people running ammonia sulfate running at V10; would seeding late be better for cereal rye?
    - Mike says try it.
    - Stephanie says it is hit or miss
- Have you done interseeding of soybeans?
  - Yes, but only annual rye grass has survived. (John) I would like to dive more into this, but I am too busy at this time.
  - You need to do the work before doing it.

Thank you and closing from Mike and Greg

Meeting adjourned at 10:11am