

Needs Assessment – Cover Crops

Cover Crop Field Day SWROC (8/18/22), Research & Educational Needs

The following are comments received during the Needs Assessment/ Focus Group meeting on 8/18, from emails sent by those that could not attend, and from paper forms collected at the session as well. I tried to only enter comments once/question – so keep in mind some of these suggestions were repeated by several/many of the respondents.

1) If you are currently using cover crops or working with farmers who plant cover crops, what has been working well / what has been most successful?

- Cereal Rye
 - Versatility
 - Seeding method (airplane, air seeder)
 - Chop/Bale – soybeans (Grazing)
 - Sept. 10th planting after corn silage
- Buckwheat (100 lbs/ac)
 - Prevent plant
 - After small grains
 - Organic
 - Before Fall covers
 - Bridge gaps
- Winter killed cover following canning crop
- NT with cover crops, killed 2 weeks before planting on soybean ground rotating to corn

2) What are some of the biggest challenges you/your clients face when using cover crops?

- Application Methods
 - How methods pan out
- Prevent Plant
- Tile issues – radish/turnips in Michigan
- Kernza issues with tile??
- Measurement of Success
 - Discouraged by biomass amount
- Economics

- After money runs out for new farmers
- Long term benefit
- Monetize soil loss
- Tight margins
- MN crop rotations
 - Other crops (Biodiversity)
 - Corn-soy funnel to rye
- Establishment
 - how to get established during the growing season & prior to harvesting cash crop
- Cost
- Terminate without chemicals
- Fall applied manure & getting cover crop established
- Questions about different varieties of cover crops that work well with the cash crops we are growing

3) Where/what do you see as the best opportunities to use cover crops?

- Weed Control / weed suppression
- Nutrient scavenging
- After corn silage and /or short-season crops
 - easier system more options
 - better establishment & ties up N what might be lost due to warmer weather in Sept
 - allows planting early
- Animal forage
- Chopping – small grain
- Radish – reduce soil compaction
- Near waterbodies (creeks, streams, wetlands) to avoid water quality issues/cancers.
- a prioritized approach to cover crop placement on the landscape
- livestock operations

4) What kind of cover crop information would be most helpful for you? (e.g. agronomics, insect management, weed management, nutrient management, economics, etc. Please be specific as possible)

- Seeding date information! (*repeated by many*)
- what is the minimum cover crop density to reduce N loss
- How to measure N – Best estimate, what benefit can we really get, and how to use this in planning

- can we/ what kind of N credit can we take for the cover crop when fertilizing the cash crop
- Pinpoint vs. Range – more specifics to situation, etc
- Analysis “idea” (we do this, we get x N credit, and so on)
- BMP’s cost money and environmental problems
 - Economic analysis
 - Nitrate leaching in practices
 - Negative drag on producers
 - Losing money
 - Viable for farmer
- Cost of cover crops (per acre)?
- Quantifiable ASAP -We keep saying long-term benefits, but what can we quantify now?
- Wildlife Benefits
- Information in newsletters (sust ag, Green Lands/Blue Waters)
- Work on economics – less inputs may raise the bottom line
- Be careful in saying they could create pest problems if not proven
- N Price, may make people switch to a cover crop (can we quantify more specifics on N we can get)
- Market variability makes information difficult to use
- Termination Timing/methods that reduce yield drag
- Termination timing
 - Go further out than 9 days with research - how long can we go without yield loss in soybean
- keep track of ground moisture & ran amounts alongside.
- Can we use models to let us know when to seed based on conditions, and what rate to seed at?
- More interaction with industry (chem dealers, equipment dealers)
- Agronomics!
- Economics! – particularly trade-off between reduced yield & also overall lower costs & environmental benefits
- nutrient management & how fertilizer could decrease with correct cover crop mixtures, agronomics & benefits of diversity in crops & practices
- Nitrate leaching reduction information
- how to reduce yield drag

5) What format for cover crop information and resources would be most helpful for you? (e.g. website content, videos, printable fact sheets, calculators, articles, webinars, in-person meetings, field days, etc.)

- News letters

- Cover crop handout (Cover Crop Field Guide)– Purdue
- Videos, Webinars – Short!
- Precision planting series – 2/3 mins as an example to emulate
- Have respected farmers educational event @ their site, have them put out these plots & have field day
- Farmer to farmer talk
 - Talk to neighbors
- Bring in agronomists, not just CCAs
- People looking for online content
- Fact sheets are good, but keep them to one page
 - Really like the Cover Crop Recipe concept we included in packet – keep it short and to the point, was stated that these are exactly the kind of thing they need
- Social Media – short/sweet
- Field days!
- Farmer to farmer Field days
- Calculators!! (N credit concept example)
- Website content!
- Fact sheets!
- Website content, videos, articles, & webinars – all are helpful & can be digested at our own pace!
- Actual farmer testimonials (video, article) – farmers believe other farmers

6) What priorities do you see in cover crop research needs?

- Nutrient management
 - nitrate leaching reduction information
 - N use by cover crops when they are harvested, how much do I need to replace?
- 60" corn
- Compaction impact (e.g. have we measured the impact of using radish on compaction or cereal rye??)
- Interseeding towards end of season (leaves falling) – can we have more specifics on this as each year conditions can be variable (specifics on when to do this, state the stage of corn)
- Interseeding herbicide programs – what works? What doesn't? Need help here with specifics!
- Feasibility of interseeding late summer
- Seeding rates!!
 - Seeding rates dependent & successful establishment for the intended purpose of the cover crop
 - I am still hearing that our rates are high and research would assist to lower if it was proven effective

-Michigan farmer example

-35 lb./acre drilled before Oct. 1, then increases rate with later seeding. What about here?

-Cost of seed is a driver for lower rates, but don't go lower than 30 lb./ac.

-Weed suppression fall lower than 30 lb./ac

-Seed size for application – consider this when applying, depends on the method of seeding too

-Nitrate leaching corresponding crop yield

-Test aerial seeding vs drilling

-BMPs – dos & don'ts

-Roller crimpers

-Better understanding of interplay of invertebrates (beneficials vs pests) in cover cropping sequence

-Diversity of choices in cover crop options, given our climate & crop rotations

-Also measurement of OVERALL benefits of cover crops

-Actual bottom line \$ of the farm, not just yield information

-Cover crops & different tillage

-Are there differences in establishment & effects on yield x tillage?

-Recipe for highboy/ aerial seeding

-reduction in nitrate leaching without hurting crop yields

-Encapsulated cover crop seed to delay germination

-late season interseeding

-Economics!

-Species interaction in mixes.

-Do pioneering species dominate the mix.

-rates of species in cocktails and how they interact.

-Cover Crop Planting Dates and successful establishment for the intended purposes

-We always hear we want to plant later and later

-Frost Seeding and evaluations for the intended purposes

-Inter-seeded cover crops on irrigated lands and impacts to water use efficiency

-Cover crop breeding efforts: Don't focus only on covers with strong allelopathy, we want covers that won't hurt the cash crop (we're growing covers for many reasons). Breed for allelopathy possibly on one track, and another track for soil health benefits in general

7) What will it take to increase use of cover crops on the landscape?

-Economics!

- some economic return or cost share of the inputs
- Evidence of economic benefits
- Economic analysis of any BMPs to demonstrate that BMP is economic viable
- Implementation cost
- Personal connection
- New cover crop genetics
 - Struggle after corn
- Research guidance
- Fact sheet for corn interseeding
- Better establishment
- Information lag
- Farm bill programs
- Eventually the inevitable...the laws will change
- Change in mindset
- Showing that the farmer will make the same amount of money or more with cover crops