

Illinois Report
Midwest Cover Crop Council, Madison, WI
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Research Highlights:

University of Illinois Extension & Crop Sciences

Late-planted cover crops ahead of soybean production. November 1 planted cereal rye, triticale, and annual ryegrass treatments influence on yield & SCN populations (Johanning)

Evaluation of legume cover crops in corn production in southern Illinois. Variety trial comparing Fixation Balansa Clover, Frosty Berseem Clover and Kentucky Pride Crimson Clover with Dixie Crimson Clover. Full evaluation of cover crop survivability, performance, and corn yield. (Johanning & Aly)

Evaluation of Cereal Rye and Crimson Clover in No-till Transplanted Pumpkin Production. (Johanning & Aly)

SARE Partnership Grant. Ralph Upton Jr. of Upton Farms in Springerton, IL (southeastern IL) “Utilizing Precision Application of Cover Crops to Minimize Planting Challenges while Maximizing Benefits to Corn.” Research trial looking at the use of multiple crops and mixes precision planted on and between rows of corn. (Aly)

Tillage and Cover Cropping Effects on Soils and Yields. Trial Comparing a rotation of 5 cover crops used in a system approach in a Corn/soybean rotation and in conventional and no-till production (NREC project 2013-3556) (Villamil & Nafziger)

Influence of Cereal Rye on SDS in Soybeans. Evaluating the influence of a cover crop on SDS in soybean (inoculated for SDS) (Peltier)

Cover crop species/planting date trial for northern Illinois. Trial looking at 10 cover crop species across three planting dates. (Higgins)

Southern Illinois University Carbondale - Dr. Karla Gage

Annual Ryegrass Trials

Four varieties: Assist, Cold Snap, Fria, and King were fall planted at 2 locations.

- Location 1 is a replicated glyphosate burndown trial. It was drilled into a reduced-till seedbed in mid-September and is uniformly well established.

- Location 2 is a replicated 2 x 3 factorial looking at no-till stand establishment from broadcast seeding into either standing crops or post-harvest residue, in either corn or soybean, on three planting dates. In the spring, following final measures of ryegrass stand, burndown treatments as well as POST programs for control of escapes will be evaluated in both corn and soybean.

Cereal Rye Trials

- A field scale, replicated, multi-year trial has been established to evaluate the contribution of fall planted cereal rye to suppression of glyphosate-resistant waterhemp in the next year's no-till soybean crop.
- A small-plot, replicated, pilot study will be established to evaluate the contribution of spring planted cereal rye to suppression of glyphosate-resistant waterhemp in the next year's no-till soybean crop including covercrop termination POST in soybean (living mulch).
- Burndown control of volunteer cereal rye following failed termination the previous year (what happens when your covercrop goes to seed?)

Summer Cover Crops

Establishment, Floral Resource, and Weed Suppression of Summer Cover Crops - Pilot 2016.
Planting Times & Method:

- Fall (September)/Aerial Seeded or Broadcast:
 - Crimson Clover
 - Red Clover & Bob Oats
 - Ladino White Clover & Bob Oats
 - Winter Wheat
- Spring (May-June)/Drilled or Broadcast:
 - Sunflower (Plant after 5th of June (when Crimson Clover has finished blooming) (Drill)
 - Buckwheat (Plant after May 15th, ideal 1st of June)
 - Korean Lespedeza (March-April)
 (Both Buckwheat and Korean Lespedeza can be drilled or broadcast from back of ATV)

Illinois State University - Dr. Shalamar Armstrong

The overarching goal of Armstrong's research in Illinois is to quantify the impact of cover crop inclusion within conventional cropping rotations on the vulnerability of fall and spring applied N, cash crop N uptake, yield and economics. Therefore, the following specific objectives are being executed at the plot, field, and watershed scales:

- (1) determine the impact of cover crop inclusion on the soil distribution and availability of soil N in both fall and spring N applied systems;
- (2) quantify the cash crop N uptake and yield response to the addition of cover crops and N application timing;
- (3) evaluate the efficacy of both N application timing and cover crop inclusion on nitrate losses via tile drainage; and

(4) effectively educate farmers in the region on implications of different N and cover crop management systems.

This work is being conducted at three locations within Central, IL. The plot scale research (10 acres total, 0.5 acre plot size) is conducted at the Illinois State University Research and Teaching farm in Lexington, IL. The field scale research is conducted on the farm of a local farmer (30 acres with 15 individually tile fields that examine fall and spring N with and without cover crops) and the watershed scale research is conducted in the town of Towanda, IL, where his research group is monitoring the water quality of paired watersheds (control-770 acres and treatment-1100 acres) with 750 acres of the treatment watershed cover cropped in the fall of 2015 and no cover crops in the control watershed (Poster present at the MCCC conference). Armstrong's collaborator in Illinois is Catherine O'Reilly of the Hydrogeology department of Illinois State University and research partners are McLean County SWCS, IFCA, CBMP, and the city of Bloomington.

Illinois Central College – Pete Fandel

Herbicide Carryover Trial, Annual Ryegrass Variety Trial, Planting Date Demonstration Trial and Cover Crop/tile monitoring trial.

Extension & Outreach

Many Cover Crop Field Days and programs throughout the state working with many organization including University of Illinois Extension, SIU, ISU, Local SWCD, NRCS, Illinois Stewardship Alliance, American Farmland Trust, IL Council on Best Management Practices (CBMP), SARE. Also, the Illinois Department of Agriculture hosted there annual Conservation Cropping Seminars held this past January in 3 locations (Champaign, IL, Godfrey, IL Milan, IL).

Contributors:

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University of Illinois Crop Sciences Department
Illinois State University
Illinois Central College
Illinois Council on Best Management Practices