



WIU Cover Crop Innovator Project

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The *New* American Farmer

Profiles of Agricultural Innovation

2nd edition



Hailing from small vegetable farms, large grain and livestock farms and even larger ranches, the 60 producers profiled in *The New American Farmer*, have embraced new approaches to agriculture.

They are renewing profits, enhancing environmental stewardship and improving the lives of their families as well as their communities.

Ralph "Junior" Upton
Springerton, Illinois

New in 2005

Assignment for Soil and Water Conservation class Spring 2007

Read and comment on *one* of the following articles depending on your interests:

Profile of Ralph Upton in "The New American Farmer"
<http://www.sare.org/publications/naf2/upton.htm>

Describe in a paragraph your reaction to this profile.
Include answers to the following:

Which ideas did you find most interesting? Comment on the relationship between Upton and Extension Agent Mike Plumer. Comment on how the practices used by Upton compare with the practices used on your family's farm or other farms with which you are familiar.



By adding cover crops and switching to no till, Junior Upton drastically improved his habitually compacted soil. Photo by Dan Anderson.

in low areas.

ink he could actually improve the

ty of moisture in the soil about
on of why, during dry years, the

f the claims might help his soil. He
n caused by the plow pan.

out cover crops, non-cash crops

During the Fall of 2008, students in AGRN 378 (Soil Fertility and Plant Nutrition) at Western Illinois University interviewed 45 farmers in 5 states in the Midwest region who regularly use cover crops in agronomic cropping systems.

Contact information for potential interview candidates was obtained through the internet and extensive networking with farmers, USDA/university specialists, cover crop seed vendors and other ag professionals.

Interviews were conducted primarily by email and phone and information gathered through the interviews was presented in 1-3 page cover crop innovator profiles.

Illinois Cover Crop Innovators



Farm Locations



Location	Name	City
1	Dave DeBusch	Arlington
2	Greg Butkewich	Streator Valley
3	Kelly Cleesevinger	Orion
4	Terry Dahmer	Marion
5	Ken DeBelfield	Macon
6	Ken Gray	Clarendon
7	Roger Hendricks	Aurora
8	Brad Jones	Wendouville
9	Karl Lawler	Keok
10	James Mohr	La Harve
11	Ken Peters	Carbondale
12	Brad Romp	Towanda
13	Cliff Schwartz	Shelton
14	Terry Taylor	Galva
15	Edi Tortorella	Industry
16	Alice Williams	Centralia
17	Tom Vais	Ohio

200 – 8000+ ac
(avg. = 1630)

4 livestock producers
(cattle and hogs)

7 wheat producers

5 long-term no-tillers

4 mixed
organic/conventional



Source: O.C. Speckart
OWS Career 2008



Profiles of Karl Lawler and James Mohr have not yet been completed.

Indiana Cover Crop Innovators



Farm Locations

Location	Name	City
1	Ray Chaffin	Decker
2	Dan Desutter	Attica
3	Randy Hathaway	Veedsburg
4	Aaron Johnson	Orleans
5	Ray McCormick	Vincennes
6	Shane Meier	Columbus
7	Rodney Rulon	Arcadia
8	Jim Scott	Pierceton
9	Mike Starkey	Brownsburg
10	Roger Wenning	Greensburg
11	Ben Yantis	Logansport
12	Mike Yoder	Goshen



Source: IFA/IC Spatial Data Center, 2008



250 – 4000 ac
(avg. = 2230)

All no-tillers with most committed to long term 100% no-till

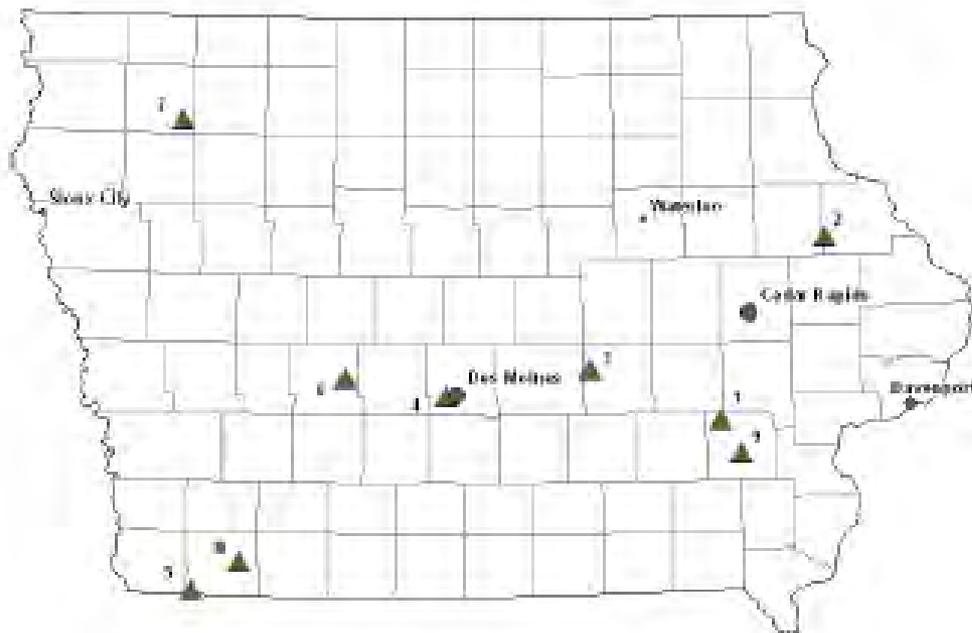
3 livestock producers (hogs, turkeys, chickens and cattle)



The profile of Rodney Rulon has not yet been completed.

Iowa Cover Crop Innovators

Farm Locations



130 – 2500 ac
(avg. = 1140)

All but 2 raise livestock
(cattle, hogs and sheep)

3 long-term no-tillers

Location	Name	City
1	Steve Berger	Wellman
2	Karl Dallefeld	Worthington
3	Bryan Davis	Grinnell
4	Wade Dooley	Des Moines
5	Kevin Green	Northboro
6	Earl Hafner	Panora
7	Paul Mudge	Sutherland
8	Austin Nothwehr	Clarinda
9	Greg Wiley	Washington



Source: NRBA 2012 Special
Data Current: 2010





Michigan Cover Crop Innovators

Farm Sites



300 – 1800 ac
(avg. = 830)

3 wheat producers

2 no-tillers

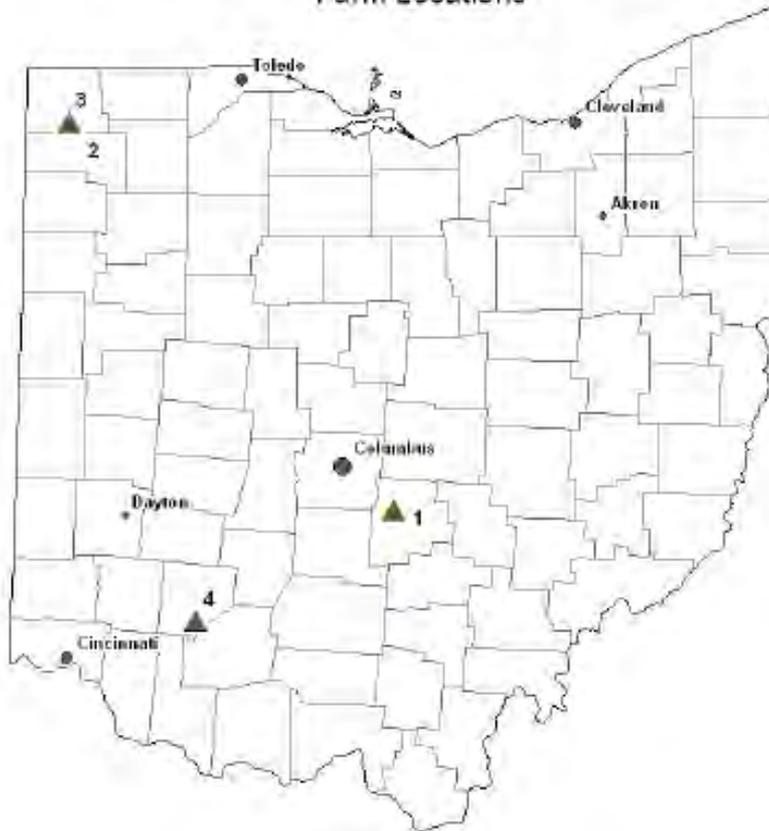
Location	Name	City
1	Joe Draper	Angola
2	Jim Kratz	Caro
3	Pat Sheridan	Fairgrove

Source: IIR & GIS Specialist
Data Current: 2000



Ohio Cover Crop Innovators

Farm Locations



900 – 3200 ac
(avg. = 2130)
+
300,000 ac
Farm management
company

All long-term no-tillers

Location	Name	City
1	David Brandt	Carroll
2	Allen Dean	Bryan
3	Joe Nester	Bryan
4	Ed Winkle	Martinsville

Source: IIRAGIS Spreadsheet
Data Current: 2008



adopt \neq adapt



vs.



The WIU Cover Crop Innovator project provided students with insights about cover cropping directly from innovative farmers maximizing 1) the credibility of the information and 2) student awareness that integration of cover crops within cropping systems can be beneficial but nearly always involves on-farm innovation.

Collaborating farmers shared information in a comfortable context (“talking shop” with young men and women who mostly grew up on farms) and gained access to information about and contact information for other cover crop innovators



Drilling annual ryegrass into double crop soybean stubble – Winkle Farm



Phillips harrow equipped with a Valmar air seeder on DeSutter Farm

Preparing for aerial seeding annual ryegrass in OH



09/21/2008

Aerial Seeding Turnips, Oats and Rye on Cliff Schuete's farm in S. Illinois





Custom-built row cleaner – Hathaway farm in Veedersburg, IN

A top-down view of a silver CD-ROM disc. The disc is centered in the frame. The text is printed in a bold, black, sans-serif font. The word 'and' is positioned in the center of the disc, directly over the clear plastic hub. The other text is arranged in two blocks, one above and one below the hub.

**Students received CDs
containing all of the
CC Innovator profiles**

and

quite a bit more!!!

A cover crop worth a look

By TOM J. BECHMAN

TIM Chatten pulled back corn residue so that green sprouts were easier to see. It was mid-fall, and annual ryegrass was emerging. Was it thick enough? Would it grow enough before winter, then thrive next spring? Those are questions the Chattins can better answer this spring. However, based on what they saw on 40 acres a year ago, they planted more than 300 acres after harvest in 2005.

Tim and his brother, Ray, farm near Vincennes, Ind., in Knox County. They became intrigued with annual ryegrass when they saw how much cover it provided in plots on other innovators' farms. The Commission

Key Points

- An annual ryegrass cover reduces nitrogen loss due to leaching.
- Utilizing a ryegrass cover takes strong farm management.
- Selecting proper herbicides for burndown is critical.

of soil protection. Plus, we believe it will help soil structure." What impresses the Chattins most is how it might impact crop nutrients. "We're told that it takes up nutrients, such as nitrogen, that could otherwise be lost," Ray says.

a Phoenix harrow. The Chattins ran a Phoenix harrow across fields after broadcasting ryegrass seed with fertilizer last fall.

"We seeded with a John Deere 750 drill last year, but we needed to cover acres more quickly," Ray says.

Try covers again
One reason cover crops fell out of favor before was limited chisel Rye protected soil, but could out of control almost overnight.

ry Fisher, executive Indiana Conserva e, has tried n including ryegrass m County, Ind. (radish family ge turnips, these wir t once r "The br



PRODUCTION

Taking root: Farmer interest growing in ryegrass

By KAY SHIPMAN



Annual ryegrass is already being planted in southern Illinois as a no-till cover crop that can improve soil and prevent erosion. Illinois is one of several states participating in a multi-year field-based study of annual ryegrass as a cover crop. The study is being coordinated by Mike Plumer, University of Illinois Extension advisor, and Extension advisor, and will use winter hardiness, soil depth, and management with herbicides as criteria. "We think we can change the soil properties" with annual ryegrass cover crops,

aid Dan Towery, formerly with Western Illinois University in West Lafayette, Ind. "The deep roots of annual ryegrass—up to 60 inches—help break up soil and bring up nutrients from the subsoil. The crop is also able to trap rain moisture and prevent it from being lost to the atmosphere," he says. "It's a great way to improve soil structure and water infiltration." Towery says that annual ryegrass is the best cover crop for no-till farmers. "It's a great way to improve soil structure and water infiltration," he says. "It's a great way to improve soil structure and water infiltration," he says.

February e... features a... cover r... State Un... ryegrass cover crop, Plumer and DeSuster both praised the effectiveness of annual ryegrass during a recent no-till field day sponsored by the Putnam and Hendricks counties' Soil and Water Conservation Districts near Ellettsville, Ind.



Crops Huge news in radishes

By TIM WHITE

JUST when you think David Brandt has done about everything there is to do with cover crops, he comes up with something new—will, according to University agronomist, Chris Steward, a colleague visiting from the Cryan Institute in Canyon, Texas, to visit Brandt's farm near Carroll.

Key Points

- Chilled radishes make a cover crop potential.
- Planted radishes grow faster than drilled ones.
- Adding radishes winter past provides nitrogen.



BIG CROP: Dave Brandt (left) and Kevin Sheaffer boast the huge chilled radishes that grow with a drill, but really are up to 30 inches long. Brandt's wheel crop. Much of the radish growth is above the soil.

Annual Ryegrass Cover Crop Reaches Depths To Aid Yields

Advocates point to extraordinary root development that improves soil structure while helping crops reach water and nutrients several feet below the surface.

ANNUAL RYEGRASS works hard in a cover crop. It sends roots down as far as 6 feet in no-till fields, seeking tough compaction layers to reach deep water and nutrients, and it leaves improved soil structure and higher organic content in its path, according to Mike Plumer, an agronomist with the University of Illinois Extension Service, has been working with no-till since 1976, and with annual cover crops since 1980, and with a lot of plots in no-till fields to check root development and soil conditions.

Plumer and DeSuster both praised the effectiveness of annual ryegrass during a recent no-till field day sponsored by the Putnam and Hendricks counties' Soil and Water Conservation Districts near Ellettsville, Ind.

Plumer notes that ryegrass is a winter annual that starts growing in the fall and grows roots all winter. Although the top growth will reach only a couple of inches in

of steel is ever going to be able to do as well as what Mother Nature did right there."

Plumer and DeSuster both praised the effectiveness of annual ryegrass during a recent no-till field day sponsored by the Putnam and Hendricks counties' Soil and Water Conservation Districts near Ellettsville, Ind.

"I don't think any piece of steel is ever going to be able to do as well as what Mother Nature did right there..."

the winter, the roots usually have enough warmth and moisture to penetrate the hard layers beneath them.

Plumer has found that first-year annual ryegrass planted in the autumn will typically grow roots about 30 inches deep by the first week of April in southern Illinois. By the third year of annual ryegrass, the roots stretch to 55 to 70 inches deep in the hard soils of his research fields, "which generally have an impenetrable layer of 12 inches and another at 30 inches, so we have a real problem with root development," he says.

Breaking Ground. The ryegrass cover crop is even better at breaking up soil than a winter annual cover crop, Plumer says. "We've seen as much as 18 to 24 inches. I don't think any piece



Cover Crop Choices for Michigan

Dale R. Mutch, W.K. Kellogg Biological Station
Department of Biology

Wickory Corners, Mich. and Sieglinde Snapp,
Department of Horticulture,
Michigan State University



SAG-5-08

Oilseed Radish Cover Crop

Alan Sundermeier, Ohio State University Extension, Wood County, Ohio

Overview

Oilseed radish is a unique cover crop that farmers are planting to improve their soil quality for economic crop production. It has the ability to recycle soil nutrients, suppress weeds and pathogens, break up compaction, reduce soil erosion, and produce large amounts of biomass. Freezing temperatures of 20 to 25 degrees will kill oilseed radish which allows for successful no-till spring planting of subsequent crops. As a fast growing, cool season cover crop, oilseed radish is best utilized when planted after small grain (e.g. wheat) or corn silage harvest. Excess nutrients in manure amended soil are rapidly absorbed by this cover crop, thus preventing leaching or runoff of nutrients into water systems.

two feet in height in a semi-erect stature. Leaf stems easily break from the main root, therefore traffic or grazing will destroy plant growth (Fig. 2).



Fig. 2. Succulent broad leaves on oilseed radish grow rapidly by utilizing excess nutrients in soil.



Fig. 1. Oilseed radish taproot compared to one foot ruler.

Description

Oilseed radish (*Raphanus sativus* [L.] var. *oleiferus*), belongs in the Brassicaceae plant family, commonly called mustards. The Daikon type of oilseed radish has a large, fleshy taproot that can grow 2 to 3 inches in diameter and one foot or more in length (Fig. 1), not including the fine root hairs that spread from the main taproot. Above ground growth consists of wide leaves that are soft, moist, and fast growing. The foliage reaches one to

Planting Recommendations

As a cool season cover crop, oilseed radish is best suited for early fall growth. When given 60 days or more of plant development, maximum return on seed investment can be realized. Opportunities for planting oilseed radish in a cropping system would include:

- After small grain harvest (e.g. wheat)
- After vegetable or sweet corn harvest
- After corn silage harvest
- After early maturity soybean harvest

Seed is planted to a depth of one-half inch. Seed size is similar to alfalfa; therefore, when using a drill, a small seeder attachment is necessary. Broadcast seeding of oilseed radish can be done successfully if followed by light tillage incorporation. Having the soil level after cover crop

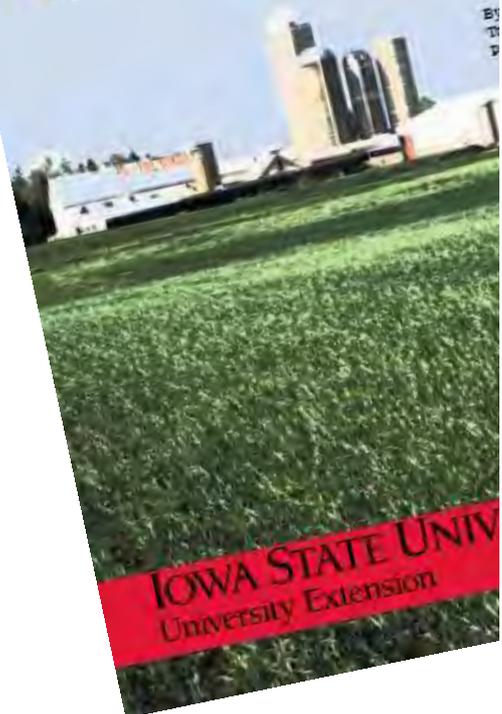
potential for nitrogen leaching to ground-water and gaseous losses. Nitrogen from an organic source such as cover crop residues as cover crop residues to crop demand for nitrogen, particularly when it is incorporated and vegetative. Residue from a cereal cover crop that is incorporated release nitrogen until late in the season.

can be used to reduce wind and water erosion. Maintaining ground cover over winter and early spring drastically reduces soil erosion.

oil quality
ce soil structure while increasing water percolation. They reduce soil erosion. They also improve soil structure and bulk density.

ole in managing weeds
g with weed germination. Broadleaf rye produces allelopathic compounds that suppress weeds. Cover crops must be terminated this from

Small Grain Cover Crops for Corn and Soybean



IOWA STATE UNIVERSITY
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Managing Cover Crops Profitably

THIRD
EDITION





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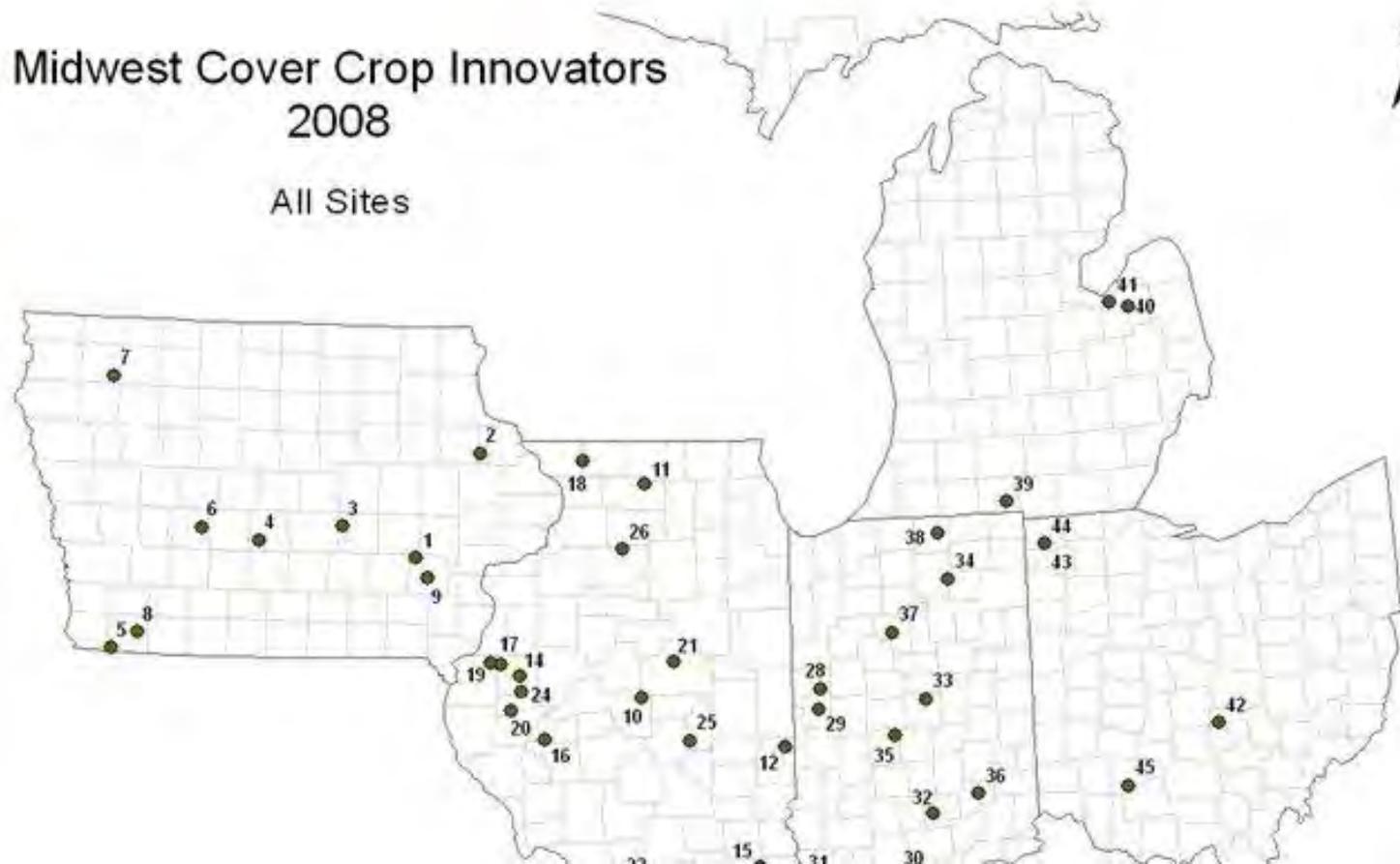
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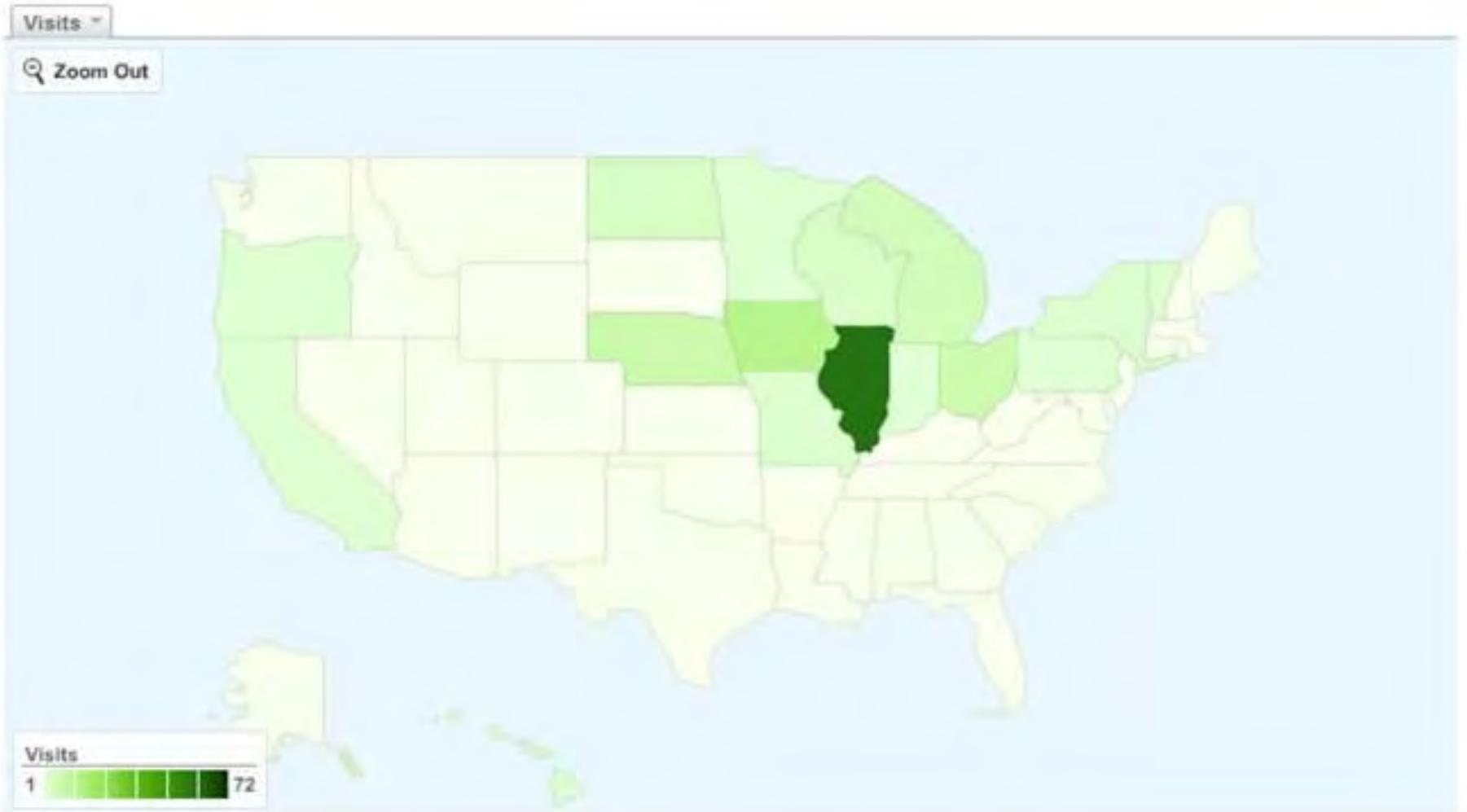
INNOVATOR PROFILES

Midwest Cover Crop Innovators 2008

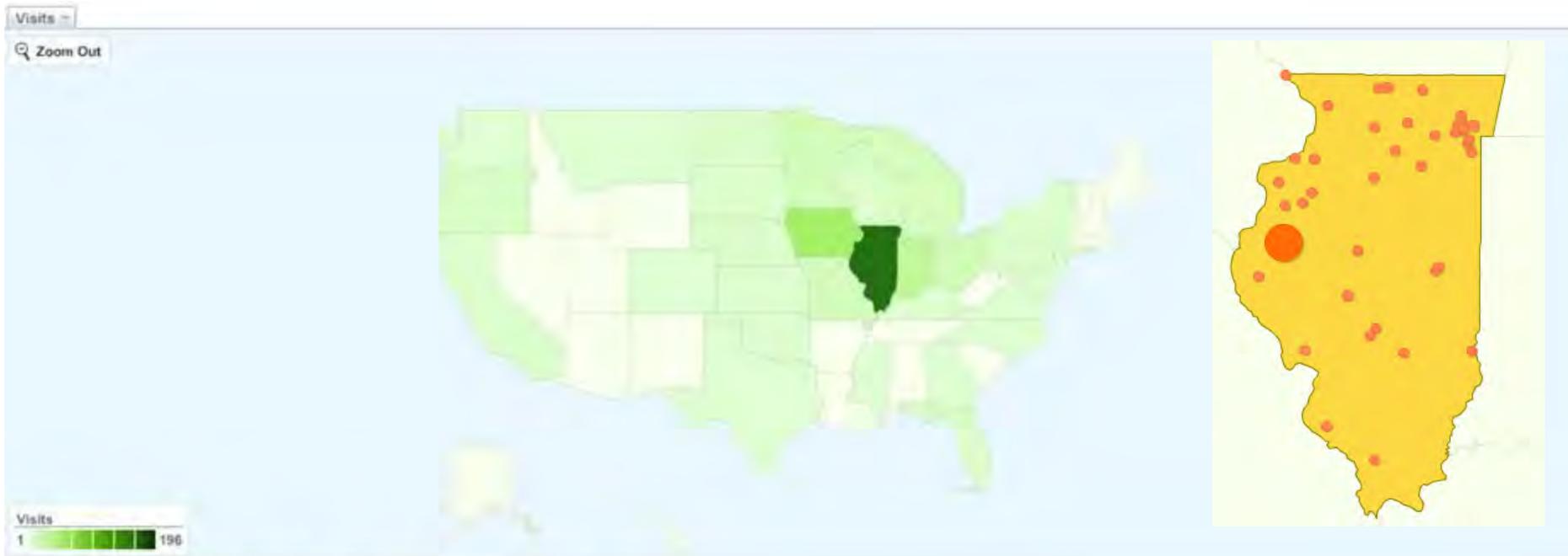
All Sites



The Innovators page on the MCCC website was accessed 137 times during the first 2 weeks after it was created!



16 visits from Canada, 6 from New Zealand, and one each from a handful of other countries within several months



This country/territory sent 431 visits via 31 regions

Detail Level: City | Region | Dimension: None

Site Usage Goal Set 1

Views: [Grid] [List] [Table] [Chart]

Visits 431 % of Site Total: 93.49%	Pages/Visit 1.29 Site Avg: 1.31 (-1.88%)	Avg. Time on Site 00:01:30 Site Avg: 00:01:35 (-5.03%)	% New Visits 59.63% Site Avg: 59.00% (1.06%)	Bounce Rate 77.03% Site Avg: 75.70% (1.75%)
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Detail Level: Region	Visits ↓	Pages/Visit	Avg. Time on Site	% New Visits	Bounce Rate
1. Illinois	196	1.30	00:01:21	52.55%	75.51%
2. Iowa	63	1.11	00:01:07	73.02%	92.06%
3. Indiana	33	1.33	00:02:22	60.61%	78.79%
4. Ohio	16	1.19	00:01:26	56.25%	81.25%

Website traffic analysis using Google Analytics

Top Traffic Sources

Sources	Visits	% visits
(direct) ((none))	206	44.69%
talk.newagtalk.com (referral)	103	22.34%
google (organic)	93	20.17%
asap.sustainability.uiuc.edu (referral)	17	3.69%
bing (organic)	8	1.74%

2009 WIU/Allison Organic Farm Field Day

Friday August 7th from noon - 4 pm

The Organic Agriculture Research program at Western Illinois University will be hosting its annual field day on Friday August 7th at the WIU/Allison Organic Farm and the neighboring Kane Farm in south-western Warren County, IL. The theme this year is Cover Crop Innovation. **All attendees will receive a CD with profiles of over 40 organic and conventional grain farmers in the Midwest region that are cover crop innovators.** Certified organic and conventional cover crop seed will be available for pick up at the field day at discounted prices for farmers that place orders in advance. Contact Andy Clayton (217) 322 2639 for more information about ordering seed.

The field day will start with a free lunch featuring local farm products. After lunch, a cover crop seed industry rep, an aerial applicator and a cover crop researcher will give short presentations and a farmer panel (including organic and conventional farmers) will answer questions about their experiences with cover crops. The field day will conclude with a walking tour of the research and production fields (including lots of cover crops) at the Allison Farm.

> 100 attendees despite a 3 hour deluge



Summary of 2009 Cover Crop Innovators

States:

Illinois (13), Iowa (6), Indiana (4), Ohio (3), Michigan (4), Nebraska (6), Wisconsin (3) and Missouri

Organic Production Practices: >10

Number of Women: 5

**I now use interview projects in every class... for example,
~ 10 interviews were used to investigate each of the following topics:**

Nutrient Management – Spring 2009

Anhydrous Ammonia - the whole story

Biosolids - where do the nutrients go when you flush?

Crop/livestock disconnect - implications for nutrient management

Finite mineral reserves - implications for nutrient management

Super plants - how will new genetics change nutrient management?

Hypoxia - agricultural problems and solutions

Equipment for nutrient application

Integrating weather into nutrient management

Future of soil testing

Nutrient management for contest winning yields

Variable rate N

Nutrient management for residential and commercial landscapes

Acknowledgements

First and foremost, the CC Innovator project would not be possible without the hardworking students of AGRN 378 and the accommodating farmers who have been willing to communicate about their experiences with cover crops, mostly right in the middle of very busy harvest seasons. THANK YOU!

Thank you to everyone that helped track down contact information for potential interview candidates – with special thanks to Dan Towery who provided an extensive list of contacts.

Thank you to Mike Plumer, Barry Fisher and other cover crop specialists/enthusiasts who contributed to the adoption of cover crops by many of the collaborating farmers.

Thank you to GIS specialist extraordinaire Amelia Fox for creating several sets of maps of the farm locations.

Thank you to everyone else that contributed to the CC Innovator project.