

2017 MCCC Michigan State report

Contact Information

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RESEARCH- On-going cover crop research (by primary discipline)	
Name(s)	Project title/objective
COMMODITY SPECIFIC	
Baas, D.	Evaluation of oilseed radish added to wheat to increase wheat yields in Michigan
Baas, D. and P. Gross	Using cover crops with wheat to improve rotational profitability
Bird, G., Kates, P and Quintanilla, M.	SCN Trap Crop Development
Basso, B., Quintanilla, M., Rosenweig, N., Bird, G., and Otto, M.	Integrated Advancing Technologies for Increasing Sustainability of Michigan Potato Systems
Bird, G., N. Rosenzweig, L. Tiemann, B. Basso, R. Black, C. Long, M. Otto, C. Carr, B. Morgan, and R. Rant,	On-farm soil health research: With special reference to bio-based systems. Michigan Potato Industry Commission
Bird, G., N. Rothwell, D. Baas, B. Klein, and K. Powers	Impact of cover-crops/mulch/compost on tart cherry orchard development/productivity and soil health. Michigan Cherry Council supported
Hill, E.	Maximizing the cover crop potential of cereal rye before soybean through alternative termination timings and methods. Michigan Soybean Promotion Committee
Hill, E.	Maximizing cover crop biomass production and weed suppression in field crop rotations by 'planting green'. Project GREEN
Long, C., L. Tiemann, N. Rosenzweig, and E. Hill	Impact of increased cropping system diversity as measured by improved productivity and sustainability in a Michigan potato production system. Project GREEN and MI Potato Industry Commission 2016 & 2017
Renner, K., C. Sprague, L. Tiemann, P. Gross, J. Dedecker, and A. Brooker (Ph.D. student)	Early interseeding of cover crops into corn, exploring species, mixtures, and timings. Project GREEN and Corn Marketing Program 2017.
Renner, K., C. Sprague, A. Brooker.	Interseeded cover crop tolerance to soil-applied and post-emergence herbicides in corn. Corn Marketing Program 2018. Submitted to GREEN 2018
Szendrei, Z., D.C. Brainard, M. Hausbeck, Z. Hayden et al.	Integrating Organic cucurbit science and production in the Midwest. USDA-NIFA-OREI 2016-2019
Szendrei, Z., D.C. Brainard, M. Hausbeck, Z. Hayden et al.	Integrating organic cucurbit science and production in the Midwest. USDA-NIFA-OREI 2016-2019

FORAGES/FEED	
Wilke, B., H. Straub III, S. Utsumi	Integrating Annual Forages into a perennial grazing systems
PEST/DISEASE MANGEMENT	
Bird, G., J. Shoemaker (M.S. Student)	Assessing the trap crop potential of cover crops for control of Soybean Cyst Nematode
SOIL FERTILITY	
Renner, K. C. Sprague, B. Basso, L. Tiemann, and A. Brooker.	Early interseeding of cover crops in corn: Crop productivity and soil health. USDA-NIFA 2017-2020.
SOIL SCIENCE/ HEALTH/ BIOLOGY- OTHER	
Kravchenko, S., K. Renner, A. Guber, and M. Thelen (New student coming soon)	Topographically diverse landscape influences on cover crop establishment and ecosystem services in corn and wheat cropping systems. Project GREEN 2016, CRDF Global 2017-2019, USDA-Org Transition submitted
Rangarajan, A., D.C. Brainard, E. Gallandt, Z. Szendrei, L. Rodriguez, V. Morrone et al.	Farmer-Designed Systems to Reduce Tillage on Organic Vegetable Farms. USDA-NIFA-OREI 2014-2018
Snapp, S. et al.	Long Term Ecological Research with some rotations including cover crops

PUBLICATIONS, EXTENSION/OUTREACH

- Pennington, D., Jean, M., Thelen, K., Rust, S., Anderson, E., Gould, K. (2017) Michigan Corn Stover Project: Cattle, Storage and Bioenergy. MSU Extension Bulletin E-3354, East Lansing, MI.
- Snapp, S., Date, K., Cichy, K. and Kathleen O'Neil. (2017) Mustards – A brassica Cover Crop for Michigan
MSU EXTENSION NEWS ARTICLES AVAILABLE @ www.covercrops.msu.edu
- Baas, D. 2017. Midwest Cover Crop Council Annual Meeting hosted this spring in Michigan. MSU Extension news. January 3, 2017.
- Baas, D. 2017. Midwest Cover Crop Council Conference offers continuing education for cover crop advisors and farmers. MSU Extension News. January 26, 2017.
- Baas, D. 2017. Midwest Cover Crop Council website gets new user-friendly mobile design. MSU Extension News. January 3, 2017.
- Baas, D. 2017 Worried about cover crop termination? Interested in the latest cover crop developments? MSU Extension News. March 2, 2017.
- Curell, C. 2018. Now is time to plan for cover crops. MSU Extension News. February 14, 2018.
- Jean, M. 2017. 2017 Upper Peninsula pearl millet trial. MSU Extension News. December 4, 2017.
- Jean, M. 2017. The Michigan Corn Stover Project – Part 2: Cover crop integration MSU Extension News. September 15, 2017
- Hill, E. C. 2017. Cover Crops are on deck as small grains near harvest. MSU Extension News. July 5, 2017.
- Hill, E. C. 2017. Important reminders for chemically terminating cover crops. MSU Extension News. April 3, 2017.
- Hahn, K. 2017. Cover Crops as a learning tool in school gardens. MSU Extension News. March 6, 2017.\
- Mackeller, B. 2017. Cover Crops are effective at reducing impacts of wind erosion in high wind events. MSU Extension News. March 16, 2017
- McFarland, A. 2017. Upper Peninsula farmers encouraged to share experiences with cover crops. MSU Extension news. November 8, 2017

Thurlow, K. 2017. Cool Season forage and cover crop field day near Gladwin October 26. MSU Extension News. October 17, 2017.

Other News Articles

Michigan Farm Bureau: Farm News Five- Cover Crops for Fall. July 14, 2017. Available on YouTube at <https://www.youtube.com/watch?v=Lbo0fis6zDk> (E. Hill)

PUBLICATIONS, REFEREED

Hill, E.C., K.A. Renner, C.L Sprague, J. Fry. 2017 Structural equation modeling of cover crop effects on soil nitrogen and dry beans. *Agron. J.* 109:2781-2788. doi: 10.2134/agronj2016.12.0712

Quinn, N.F., D.C. Brainard, and Z. Szendrei. 2017. Floral strips attract beneficial insects but do not enhance yield in cucumber fields. *J Econ Entomol.* 110:517-524

Grabau, Z.J., Z.T. Maung, D.C. Noyes, D.G. Baas, B.P. Werling, D.C. Brainard, H. and Melakeberhan. 2017. Effects of oat, oilseed radish, and oilseed rape cover crops on *Pratylenchus penetrans* and the nematode community in Michigan carrot production, *J Nematol.* 49:114-123

Lowery, C.J. and D.C. Brainard. 2017. Rye-Vetch Spatial Arrangement and Tillage: Impacts on Soil Nitrogen and Sweet Corn Roots. *Agron. J.* 109:1013-1023

Haramota, E.R. and D.C. Brainard. 2017. Spatial and temporal variability in Powell amaranth (*Amaranthus powellii*) emergence under strip tillage with cover crop residue. *Weed Sci.* 65:151-163

PRESENTATIONS, EXTENSION

Grower Field Days

- Grass cover crops for potato rotations. MPIC and MSU Upper Peninsula Field Day. Rock, MI. August 30, 2017. Attended by 50. *Invited.* (E. Hill)
- Diagnostic Services: Herbicide-resistance and cover crop issues related to potato production. Montcalm Research Center Field Day. August 3, 2017. Attended by 30. (E. Hill)
- Successfully integrating grass cover crop into potato-alfalfa rotations. Midwest Cover Crop Council annual meeting. Grand Rapids, MI. March 14-15, 2017. Attended by 200. Poster. (E. Hill)
- Cover crops for potato rotations. Michigan Potato Industry Commission Winter Potato Conference. Mt. Pleasant, MI. January 30, 2017. Attended by 100. *Invited.* (E. Hill)
- Planting green: Maximizing cover crops. Michigan Agri-Business Association winter meeting. Lansing, MI. January 10, 2017. Attended by 31. *Invited.* (P. Gross, E. Hill)
- Cover Crop Field Day-Recker Farm (P. Gross and D. Baas)
- Urban and Small Farm Soil Health Field Day (D. Baas, P. Gross, C. Curell and A. Harper)
- 2017 Great Lakes Intertribal Food Summit (D. Baas, P. Gross, C. Curell and M. Thelen)
- Grove Farm Cool Season Field Day-MMCN October Program (P. Gross)
- Grove Farm Plots – April Meetings (P. Gross)
- Bracy Ag Services Field Day (D. Baas)
- Cover Crop Field Day (P. Gross and C. Curell)
- Cropping and Topping Field Day (P. Gross)
- MSU Agriculture Innovation Day (D. Baas, P. Gross, C. Curell and M. Thelen)
- Kellogg Biological Station-Fall Cover Crop Field Day- Hickory Corners, MI (D. Baas, D. Brainard, K. Renner, V. Morrone and B. Wilke)
- Kellogg Biological Station Grazing School, Hickory Corners, MI (B. Wilke)
- On-Farm Research Review: Alpena, February 2017 (K. Renner)
- MSU Weed Day: East Lansing, June 2017 (K. Renner)
- Center of excellence Field Day: Clayton, August 2017 (K. Renner)

- Corn Variety and Cover Crop Interseeding Field Day: Hillman, September 2017 (K. Renner)

Grower Meetings

- MFFC- Organic Low-Till Small Farm- Insect and Weed Considerations (D. Baas and P. Gross)
- Zeeland Farm Services Meeting (D. Baas)
- Macomb Smart Gardening Conference (D. Baas)
- MCTA Summer Meeting (P. Gross)
- West MI Growers Group- Soil Fertility (C. Curell)
- Wedel’s Spring Expo (C. Curell)
- Cover crops for potato and soybean systems. Michigan State University Extension Field Crops Webinar Series 2017. March 27, 2017. Attended by 63. (E. Hill)
- MABA winter conference: Lansing, January 2017 (K. Renner)
- Crop and Pest Management Meeting: Interseeding Cover Crops in Corn in MI. , Alpena, January 2017 (K. Renner)

Conservation Districts/NRCS/Drain Commission Field Days/Meetings

- Genesee County Field Day Soil Health: and Equation for Success (D. Baas and P. Kaatz)
- Make your soil great again field day – Elkhart County, IN (D. Baas)
- 2017 Conservation Event – Allegan County (D. Baas)
- Natural Resource Conservancy- Interseeding Cover Crops into Corn in Michigan, 2015-2017 (K. Renner)
- Benzie/Antrim Farm Bureau Annual Meeting (C. Curell)
- Osceola County Summer Tour (C. Curell)

PRESENTATIONS, SCIENTIFIC/SOCIETY

Hill, E. 2017. Evaluation of ‘Planting green’: Impacts of delayed cereal rye termination on weed emergence and soybean production. North Central Weed Science Society annual meeting. 227. St. Louis, MI. Oral presentation.

Brooker, A., K. Renner, C. Sprague, and L. Tiemann. 2017. Interseeding Cover Crops in Corn in Michigan. ASA-CSA-SSSA International Meeting. October 2017. Tampa, FL.

Brooker, A., C. Sprague, and K. Renner. 2017. Herbicided options in corn interseeding with cover crops. North Central Weed Science Society Annual Meeting. December 2017. St. Louis, MO.

Brooker, A., K. Renner, C. Sprague, and L. Tiemann. 2018. Interseeded cover crops competitiveness in grain corn. Weed Science Society of America Annual Meeting. January-February 2018. Arlington, VA.

MICHIGAN STATE UNIVERSITY COURSES THAT DISCUSS COVER CROPS

CSS 101- Introduction to Crop Science	ENT 205H- Pests Society and the Environment
CSS101L- Introduction to Crop Science Lab	ENT 479- Organic Pest Management
CSS 201- Forage Crops	HRT 251- Organic Farming Principles and Practices
CSS 212- Advanced Crop Production	HRT 341- Vegetable Production and Management
CSS 288- Principles of Weed Management	
CSS 360- Soil Biology	
CSS/BSE/FOR 467- BioEnergy Feedstock Production	
CSS480- Soil Fertility and Nutrient Management	
CSS 488- Agricultural Cropping Systems: Integration & Problem Solving	