

## 2020 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. and B. Wilke	Management of Rye Cover Crops and Influence on Weed Control, Soybean Cyst Nematode and Soybean Production. Michigan Soybean Checkoff (2020)
Bird, G., M. Quintanilla, Phil Kaatz and Ned Berkey	Trap crop development for soybean cyst nematode management (2018-2021)
Bird, G., M. Quintanilla	Impact of cover crops in seed potato production systems (2018-2020)
Burns, E., K. Cassida, M. Singh	Identifying agronomic and weed control practices to optimize establishment of alfalfa interseeded in corn. Project GREEN 2019-2021.
Cassida, K.A., R. Ehrhardt, E. Burns, M. Chilvers, C. Difonzo, E. Recktenwald, J. Schwehofer, and M. Singh.	Integrating Crop Production Systems with Lamb Grazing for Michigan. MI Animal Ag Alliance 2019-2021 \$165,010, and Project GREEN, 2020-2023, \$79,261.
Cassida, K.A., and J. J. Paling.	Cover Crop Variety Test. Funded by public entries. Annual.
Ehrhardt, E., E. Recktenwald, K. Cassida and J. Rowntree.	Evaluating the environmental footprint of U.S. sheep industry. Lamb Marketing Board. \$122,103, 2020-2021.
Hayden, Hausbeck, and Brainard.	Integrated Crop Management and Biorational Strategies for Sustainable Asparagus Production. USDA-MDARD-SCBG via Michigan Asparagus Research Board. 2018-2020. \$99,970
Hayden, Z.D. and M. Quintanilla	Investigation of <i>Brassica</i> cover crops for nutrient cycling and nematode suppression in muck celery production. MI Celery Research, Inc., 2018-2021
Kravchenko, Renner, Guber, Miller, Tiemann and Baas.	Transition to organic row-crop systems: enhancing sustainability in topographically diverse Midwest landscapes. USDA – Organic Transitions. 2018-2021. \$500,000.
Quintanilla, M., Baas, D., Brainard, D., Conner, J.	Developing cultural practices to manage critical pests in carrots. SCBG. 2019-2021.
Renner, Baas, Kravchenko, and Tiemann.	The Role of Cover Crop Mixtures across Varying Field Topography. Project GREEN. 2019-2021 \$45,000
Renner, Tiemann, Basso and Sprague.	Early interseeding of cover crops in corn: Crop productivity and soil health. USDA-Agriculture & Food Research Initiative. 2017-2020 \$500,000
Sprague et al.	Innovative strategies to manage glyphosate-resistant horseweed (marestail) in soybean. Michigan Soybean Promotion Committee (2020) \$26,000
Sprague, C. L, and B. Stiles II	Cover crops and other strategies to manage

	glyphosate-resistant horseweed (marestail) in Roundup Ready sugarbeet. Michigan Sugar Company (2020) \$15,000.
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**PEST/DISEASE MANAGEMENT**

Quintanilla, M, D. Baas, J. Conner and B. Werling	Genomic identification of oilseed radish cover crop cultivars for nematode host resistance/susceptibility screening. Project GREEN 2019 - 2020.
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**SOIL FERTILITY**

Baas, D., K. Renner, B. Wilke, and K. Ortner	Designing a better cover crop interseeding system including evaluation of corn row spacing, interseeding equipment, tillage, manure and cover crop species. (2019-Present)
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Jean, M., D. Baas, J. DeDecker and C. Kapp	Demonstrating Soil Health Management Systems in Northern Michigan to Promote Greater On-farm Adoption of Conservation Practices. USDA Conservation Innovation Grant. 2019-2021
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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.
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**SOIL SCIENCE/ HEALTH/ BIOLOGY- OTHER**

N. Haddad et al.	Long Term Ecological Research (LTER) with some rotations including cover crops (1989-Present)
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Hayden, Z.D., L.K. Tiemann, D.C. Brainard, and E.L. Bunting	Soil health for intensive production: Understanding and addressing key constraints for vegetable systems on sandy soils. USDA NIFA, 2019-2022
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Kravchenko, A., K. Renner, A. Guber, M. Thelen, D. Baas, S. Miller, N. Millar and L. Tiemann	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 2019 - 2021
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K. Renner, D. Baas, A. Kravchenko, Lisa Tiemann and K. Ortner	Organic Transition Systems: The Role of Cover Crop Mixtures across Varying Field Topography. Project GREEN 2019 - 2021
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Robertson, G.P, N. Haddad, S. Hamilton, B. Wilke & J. Doll	Long-Term Agroecosystem Research (LTAR) including cover crops as component of aspirational crop systems (2020 - Long Term)
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Snapp, S., J. Blesh, and V. Morrone	Linking plant traits with soil health to determine optimal cover crop mixtures on organic farms USDA-Org Transitions (lead Univ Mich J Blesh) (2020-2022)
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Wilke, B., T. Robbins, H. Straub & D. Baas	Developing multi-purpose cover crop mixtures for forage, soil health and cropping system benefits (2015-Present)
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**PUBLICATIONS, EXTENSION/OUTREACH**

**Bulletins and Factsheets**

- Baas, D, K. Cassida, C. Curell, S. Fronczak, P. Gross, M. Jean, P. Kaatz, and E.H. Schultheis. 2020. *Michigan Cover Crop Recipe. Post-corn silage, going to soybean: Use cereal rye.* 2 pg. Midwest Cover Crops Council, MCCC-124, CC-07, <http://mccc.msu.edu/michigan-cover-crop-recipe-post-corn-silage-going-soybean-use-cereal-rye>
- Baas, D, K. Cassida, C. Curell, S. Fronczak, P. Gross, M. Jean, P. Kaatz, and E.H. Schultheis. 2020. *Michigan Cover Crop Recipe. Post-corn silage, going to corn: Use cereal rye.* 2 pg. Midwest Cover Crops Council, MCCC-123, CC-06, <http://mccc.msu.edu/michigan-cover-crop-recipe-post-corn-silage-going-corn-use-cereal-rye/>
- Brooker, A., C. Sprague, K. Renner. 2020. Herbicide options for cover crops interseeded in corn. Factsheet in 2021 Weed Control Guide for Field Crops. E0434. [www.canr.msu.edu/weeds/](http://www.canr.msu.edu/weeds/)
- Cassida, K., and J. Paling. 2020. *2019 Michigan Forage Variety Test Report.* MSU Forage Factsheet 20-01, 31 pages. Online Feb. 28, 2020. <https://forage.msu.edu/wp-content/uploads/2020/03/2019-Michigan-Forage-Variety-Test-Report-Web-Version.pdf>
- Cassida, K. and J. Paling. 2020. *2019 Michigan Cover Crop Variety Test Report.* MSU Forage Factsheet 20-02. Published online Feb. 21, 2020. <https://forage.msu.edu/wp-content/uploads/2020/02/2019-Cover-Crop-Variety-Test-Report.pdf>

### MSU Extension News Articles

- Baas, D.G. 2020. Cover Crop Virtual Field Day on Sept. 2 to feature early interseeding into corn. *MSUE Ag News*, online August 26, 2020. <https://www.canr.msu.edu/news/cover-crop-virtual-field-day-on-sept-2-to-feature-early-interseeding-into-corn>
- Baas, D.G. and P. Kaatz. 2020. Thinking about cover crops after corn silage? *MSUE Ag News*, online September 8, 2020. <https://www.canr.msu.edu/news/thinking-about-cover-crops-after-corn-silage>
- Baas, D.G. 2020. National Cover Crop Survey Report is released. *MSUE Ag News*, online September 8, 2020. <https://www.canr.msu.edu/news/national-cover-crop-survey-report-is-released>
- Baas, D.G. 2020. Reflections on cover crop use in Michigan. *MSUE Ag News*, online September 11, 2020. <https://www.canr.msu.edu/news/reflections-on-cover-crop-use-in-michigan>
- Hill, E. and C.L. Sprague. 2020. Updated cover crop termination publication for 2020. *MSUE Ag News*, online April 2, 2020.
- Baas, D, K. Cassida, C. Curell, S. Fronczak, P. Gross, M. Jean, P. Kaatz, and E.H. Schultheis. 2020. Cover Crop Recipes: Post Corn Silage, Going to Soybean: Use Cereal Rye. *MSUE AG News*. Online Aug 18, 2020. <https://www.canr.msu.edu/resources/cover-crop-recipes-post-corn-silage-going-to-soybean-use-cereal-rye>
- Baas, D, K. Cassida, C. Curell, S. Fronczak, P. Gross, M. Jean, P. Kaatz, and E.H. Schultheis. 2020. Cover Crop Recipes: Post Corn Silage, Going to Corn: Use Cereal Rye. *MSUE AG News*. Online Aug 18, 2020. <https://www.canr.msu.edu/resources/cover-crop-recipes-post-corn-silage-going-to-corn-use-cereal-rye>
- Baas, D.G. and E.H. Schultheis. 2020. Choosing cover crops: Think like a plant!; *MSUE Ag News*, online February 25, 2020. <https://www.canr.msu.edu/news/choosing-cover-crops-think-like-a-plant>
- Baas, D.G. and E.H. Schultheis. 2020. Benefits of Brassicas as cover crops. *MSUE Ag News*, online March 2, 2020. <https://www.canr.msu.edu/news/benefits-of-brassicas-as-cover-crops>
- Baas, D.G., M. Jean and E.H. Schultheis. 2020. Calling all farmers! Please complete new national cover crop survey. *MSUE Ag News*, online March 27, 2020. <https://www.canr.msu.edu/news/calling-all-farmers-please-complete-new-national-cover-crop-survey>

- Cassida, K. 2020. Using the sorghum family as both cover crop and forage. *MSUE Ag News*, online April 8, 2020. <https://www.canr.msu.edu/news/using-the-sorghum-family-as-both-cover-crop-and-forage>
- Cassida, K. 2020. Variety matters in cover crops. *MSUE Ag News*, online Feb. 26, 2020.
- Werling, B., D. Brainard, D.G. Baas and Z. Hayden. 2020. Video demonstrates managing mustard cover crops for biofumigation. *MSUE Ag News*, online April 9, 2020. [https://www.canr.msu.edu/news/new\\_video\\_demonstrates\\_management\\_of\\_mustard\\_cover\\_crops\\_for\\_biofumigation](https://www.canr.msu.edu/news/new_video_demonstrates_management_of_mustard_cover_crops_for_biofumigation)
- Fronczak, S. and D.G. Baas. 2020. Learn about planting cover crops after wheat on the July 30 Field Crops Virtual Breakfast. *MSUE Ag News*, online July 23, 2020. <https://www.canr.msu.edu/news/planting-cover-crops-after-wheat-july-30-field-crops-virtual-breakfast>
- Fronczak, Sarah. 2020. Cover crops can be used to prevent nitrogen loss. *MSUE Ag News*, online January 20, 2020. [https://www.canr.msu.edu/news/cover\\_crops\\_can\\_be\\_used\\_to\\_prevent\\_nitrogen\\_loss](https://www.canr.msu.edu/news/cover_crops_can_be_used_to_prevent_nitrogen_loss)
- Jean, M. Is a single species or multi-species cover crop better? *MSUE News*. (3/25/2020) <https://www.canr.msu.edu/news/is-a-single-species-or-multi-species-cover-crop-better>
- Jean, M. Getting “In the Weeds on cover crops. *MSUE News*. (5/28/2020) <https://www.canr.msu.edu/news/getting-in-the-weeds-on-cover-crops>
- Jean, M. Saving soil with cover crops. *MSUE News*. (12/4/2020) <https://www.canr.msu.edu/news/saving-soil-with-cover-crops>
- Jean, M., and D.G. Baas. 2020. Getting “In the Weeds” on cover crops. *MSUE Ag News*, online May 28, 2020. <https://www.canr.msu.edu/news/getting-in-the-weeds-on-cover-crops>
- Rogers, Erica, Sarah Fronczak, and Monica Jean. 2020. Eroding away your economic and environmental progress. *MSUE Ag News* online July 17, 2020. <https://www.canr.msu.edu/news/eroding-away-your-economic-and-environmental-progress>

#### Other Articles

- Baas, D.G. 2020. Reflections on cover crop use in Michigan. *Michigan Farmer*, online September 8, 2020. <https://www.farmprogress.com/cover-crops/think-cover-crops-type-crop-insurance>
- Cassida, K., and C Gould. 2020. Cover Crops Expand Grazing Land Availability. *The Michigan Cattleman*. Fall 2020, Vol 35, Issue 3.
- Cassida, K.A. 2020. Midwest Cover Crops Council Annual Report-Michigan. Kansas City, Missouri. Feb. 11, 2020. Online, [http://mccc.msu.edu/wp-content/uploads/2020/03/MI\\_2019\\_MCCC\\_Michigan-Report.pdf](http://mccc.msu.edu/wp-content/uploads/2020/03/MI_2019_MCCC_Michigan-Report.pdf) (Report)
- Wilke, B. 2021. Planting green has advantages if done correctly. *The Farmer’s Exchange*, January 22, 2021. <http://www.farmers-exchange.net/detailPage.aspx?articleID=20324>

#### WEBSITES, PODCASTS, WEBINARS, & VIDEOS

- Cassida, K. MSU Cover Crop Variety Trials. Online Feb. 14, 2020. <https://www.youtube.com/watch?v=3AAJuM7wTSg> (webinar)
- Michigan State University Extension Cover Crops Team, [https://www.canr.msu.edu/cover\\_crops/](https://www.canr.msu.edu/cover_crops/) (website)
- Michigan Forage Connection, <https://forage.msu.edu/> (website)
- MSU Soil Fertility Research, <https://soil.msu.edu/> (website)
- MSU Weeds, <https://www.canr.msu.edu/weeds/> (website)

- Cover Crop Webinar Series, 5 topics, Online Feb - Mar, 2020. 1,248 total views. Available at [https://www.youtube.com/channel/UCi2lQ7\\_0bhxlKEWai9rHnXw/videos](https://www.youtube.com/channel/UCi2lQ7_0bhxlKEWai9rHnXw/videos)
- Cover Crop Video Series, 16 topics, Online January 9, 2020. 8,174 total views. Available at [https://www.youtube.com/channel/UCi2lQ7\\_0bhxlKEWai9rHnXw/videos](https://www.youtube.com/channel/UCi2lQ7_0bhxlKEWai9rHnXw/videos)
- From the Field, MSU Virtual Cover Crop Field Day Videos, Online September 2, 2020. Complete field day video (104 views) available at <https://www.canr.msu.edu/videos/cover-crops-virtual-field-day>, associated video segments (359 views) available at [https://www.youtube.com/channel/UCi2lQ7\\_0bhxlKEWai9rHnXw/videos](https://www.youtube.com/channel/UCi2lQ7_0bhxlKEWai9rHnXw/videos).
- Revised MCCC Cover Crop Decision Tool Tutorial, Online September 2, 2020. 437 views. Available at [https://www.youtube.com/watch?v=l5YrsLD-i-8&feature=emb\\_logo](https://www.youtube.com/watch?v=l5YrsLD-i-8&feature=emb_logo)
- Jean, M. Series 4 Episode 1: Cover Crops, Carryover and Termination. Monica Jean, MSU Extension field crops educator, sits down with Christy Sprague, weed Extension specialist, to discuss cover crops and weed management. [Listen to Series 2 Episode 1 on iTunes](#)
- Jean, M. Series 4 Episode 2: In a Pickle with Specialty Crops and Cover Crops. Monica Jean and Paul Gross, MSU Extension field crops educators, sit down with Nathan Clarke, a farmer in Midland County, to discuss cover crops and conservation tillage practices with dry beans and pickles. [Listen to Series 4 Episode 2 on iTunes](#)
- Jean, M. Series 4 Episode 3: One Canadian's Approach to Cover Crops. Monica Jean and Paul Gross, MSU Extension field crops educators, sit down with Woody Van Arkel, a farmer from Ontario, Canada, to discuss cover crops integration into his corn, soybeans, wheat and sugarbeet rotation. [Listen to Series 4 Episode 3 on iTunes](#)
- Jean, M. Series 4 Episode 4: What does the Cover Crop do for my Farm? Monica Jean, MSU Extension field crops educator, sits down with Dustin Mulock, a farmer from Ontario, Canada, to discuss biofences, companion cropping and nutrient management with cover crops. [Listen to Series 4 Episode 4 on iTunes](#)
- Jean, M. Series 4 Episode 5: Can you help me with my Cover Crop? Monica Jean, MSU Extension field crops educator, sits down with Dean Baas, MSU Extension sustainable agriculture educator, to discuss 101 cover crop planning and how to get help with your cover crop. [Listen to Series 4 Episode 5 on iTunes](#)
- Jean, M. Cover Crop: Skip Row Interseeded Corn <https://www.youtube.com/watch?v=d9m-la88cQo&t=16s> Video: Virtual Field Day with AgroExpo
- Jean, M. Cover Crop: Frost Seeding Red Clover in Wheat <https://www.youtube.com/watch?v=6uh-uFKPLwQ> Video: Virtual Field Day with AgroExpo
- Jean, M. Cover Crops: Weed Suppression <https://www.youtube.com/watch?v=Fl6HR8RMUss> Video: Virtual Field Day with AgroExpo
- Jean, M. Cover Crops: Mixtures <https://www.youtube.com/watch?v=LWH304MZx3k&t=123s> Video: Virtual Field Day with AgroExpo
- Jean, M. Cover Crops: Soil Health <https://www.youtube.com/watch?v=E36Fyp8pTOc> Video: Virtual Field Day with AgroExpo
- Jean, M. Cover Crops: Species Selection <https://www.youtube.com/watch?v=btdVSaq0bbQ> Video: Virtual Field Day with AgroExpo
- Jean, M, and Sarah Fronczak. 2020. Flushing phosphorus down the drain: tile lines and dissolved phosphorus (podcast) <https://www.canr.msu.edu/podcasts/flushing-phosphorus-down-the-drain-tile-lines-and-dissolved-phosphorus>
- Jean, M., and Sarah Fronczak. 2020. Saving soil: a farmer's perspective on cover crops (podcast) <https://www.canr.msu.edu/podcasts/saving-soil-a-farmer-s-perspective-on-cover-crops>

- Cassida, K., E. Burns, M. Jean, P. Gross. 2020. In the Weeds: Innovative Forage Systems (podcast) <https://podcasts.apple.com/us/podcast/in-the-weeds-innovative-forage-systems/id1461704431?i=1000503196925>
- Chu S. A. and E. E. Burns. 2020. Interseeding Corn and Alfalfa View From The Field. (video) <https://www.youtube.com/watch?v=cGnaUstuGzu0>
- Curell, C. Ontario Orchard People: Cover crops and fruit trees. The advantage and disadvantage (podcast). <https://orchardpeople.com/cover-crops-and-fruit-trees/>
- Sprague, C. L. and J. Fisher. Horseweed control in soybean with cereal rye. Soybean Virtual Field Day. Published August 26, 2020 <https://www.canr.msu.edu/videos/soybean-virtual-field-day-christy-sprague>
- Sprague, C. L. and B. Stiles II. Integrating cereal rye for horseweed suppression in sugarbeet. Dry bean and Sugarbeet Virtual Field Day. Published August 19, 2020 <https://www.canr.msu.edu/videos/dry-bean-sugar-beet-field-day-christy-sprague>
- Sprague, C. L. Herbicides and Cover Crops: What can I use? Published March 14, 2020 <https://www.canr.msu.edu/videos/herbicides-and-cover-crops-what-can-i-use>

#### PUBLICATIONS, REFEREED

- Brooker, AP, Renner, KA; Basso, B . 2020. Interseeding cover crops in corn: Establishment, biomass, and competitiveness in on-farm trials. *AGRONOMY JOURNAL* 112: 3733-3743. DOI: 10.1002/agj2.20355
- Mennan, H; Jabran, K; Zandstra, BH; Pala, F . 2020. Non-Chemical Weed Management in Vegetables by Using Cover Crops: A Review. *Agronomy* **2020**, 10(2), 257; <https://doi.org/10.3390/agronomy10020257>
- Nguyen T.T.L. and A.N. Kravchenko 2021. Effects of cover crops on soil CO<sub>2</sub> and N<sub>2</sub>O production across topographically diverse agricultural landscapes in corn-soybean-wheat organic transition. *European J. of Agronomy* 122, article 126189.
- Tarrant, AR; Brainard, DC Hayden, ZD. 2020. Cover Crop Performance between Plastic-mulched Beds: Impacts on Weeds and Soil Resources. *HORTSCIENCE* 55:1069-1077. DOI: 10.21273/HORTSCI14956-20
- Moore, V.M., Maul, J.E., Wilson, D., Curran, W.S., Brainard, D.C., Devine, T.E. and Mirsky, S.B., 2020. Registration of ‘Purple Bounty’ and ‘Purple Prosperity’ hairy vetch. *Journal of Plant Registrations*, 14: 340-346.
- Schramski, J., Sprague, C., & Renner, K. (2020). Effects of fall-planted cereal cover-crop termination time on glyphosate-resistant horseweed (*Conyza canadensis*) suppression. *Weed Technology*, 1-11. doi:10.1017/wet.2020.103
- Schramski, J., Sprague, C., & Renner, K. (2020). Integrating fall-planted cereal cover crops and preplant herbicides for glyphosate-resistant horseweed (*Conyza canadensis*) management in soybean. *Weed Technology*, 1-8. doi:10.1017/wet.2020.117

#### THESES and DISSERTATIONS

- Schramski, John A. Horseweed Growth Types and Integrating Fall-Planted Cereal Cover Crops for Management, Michigan State University, Ann Arbor, 2020. ProQuest, <http://ezproxy.msu.edu/login?url=https://www.proquest.com/dissertations-theses/horseweed-growth-types-integrating-fall-planted/docview/2406472259/se-2?accountid=12598> Advised by C.L. Sprague.

## PRESENTATIONS, EXTENSION

### ***Grower Field Days***

- Sept 2, 2020. Grazing cover crops roundtable. MSUE Cover Crops Virtual Field Day.
- Sept 2, 2020. From the Field, MSU Virtual Cover Crop Field Day. Demonstrations and farmer interviews from five locations around the state. Seven concurrent cover crop topic breakout sessions were held led by educators and specialists. (96 attending)
- Sprague, C.L.. Sept 2, 2020. Cover crops and weed management: What is the latest in Michigan? Cover crop virtual field day.

### ***Grower Meetings***

- Jan. 14, 2020. Sprague, C.L. Herbicides and Cover Crops: What can I use? MABA Conference, Lansing, MI. (70 attending)
- Jan. 15, 2020. MSU Cover Crop Variety Trials. MABA Conference, Lansing, MI. (45 attending)
- Jan. 31, 2020. Soil Health – How it affects your garden and you. Ag Action Day, Kalamazoo, MI. (14 attending)
- Feb. 5, 2020. 2020. Cover Crops and Soil Health. SW Michigan Horticultural Days. Benton Harbor, MI. (30 attending)
- Feb. 6, 2020. Cover Crop Selection for Orchard Floors. SW Michigan Horticultural Days. Benton Harbor, MI. (35 attending)
- Feb. 27, 2020. Cover Crops, Soil Health and Interseeding. 4th Annual Producers Forum - Arable Solutions, Jackson, MI. (33 attending)
- Feb 11, 2020. State Report-Michigan. MidWest Cover Crop Conference, Kansas City, MO.
- Dec 8, 2020. Impacts of rye cover crop and variety on asparagus emergence. Asparagus Session. Great Lakes Fruit, Vegetable, and Farm Market Expo. Grand Rapids, MI. December (120 attending)

### ***Conservation Districts/NRCS/Drain Commission Field Days/Meetings***

- Jan. 22, 2020. Northwest MAEAP Meeting- How Cover Crops can increase the health of your soil. Scottsville, MI. (102 attended)
- Jan. 30, 2020. Horseweed suppression with cereal cover crops. Schramski, Renner, Sprague. Great Lakes Crop Symposium. Session 2019 Soybean Checkoff Research Highlights (100 attendees)
- Feb. 26, 2020. How Cover Crops can increase the health of your soil. Grant, MI. (65 attended)

## PRESENTATIONS, SCIENTIFIC/SOCIETY

- Cassida, K., S. Gerdes, C. Macaluso, R. Martin, E. Burns, R. Ehrhardt, E. Recktenwald, J. Rowntree, J. Schweihofer, and S. Snapp. 2020. Grazing cover crops for the Great Lakes Region. CSSA symposium, ASA/CSSA/SSSA Annual Meeting, Nov. 8-13, 2020. Online, URL in press. (invited symposium)
- Cassida, K.A, and J.J. Paling. 2020. Developing a Variety Testing Protocol for Cover Crops. ASA/CSSA/SSSA Annual Meeting, Nov. 8-11, 2020. Online, URL in press. (poster)
- Chu S. A. and E. E. Burns. 2020. Determination of the Critical Period of Weed Control in an Interseeded System of Corn Silage and Alfalfa. North Central Weed Science Society Annual Meeting. 75:60. <https://ncwss.org/wp-content/uploads/NCWSS-2020-Unofficial-Proceedings.pdf>
- Chu S. A. and E. E. Burns. 2020. Weed Seed Dynamics in an Interseeded System of Corn Silage and Alfalfa. North Central Weed Science Society Annual Meeting. 75:125. <https://ncwss.org/wp->

[content/uploads/NCWSS-2020-Unofficial-Proceedings.pdf](#)

- Drumm S. A. and E. E. Burns. 2020. Does corn silage leaf angle modify the critical period of weed control in alfalfa interseeded with corn? Michigan Agribusiness Association Winter Conference, Lansing, MI. [http://www.miagbiz.org/images/Winter\\_Conference/2020/MABA-Conference-Program.pdf](http://www.miagbiz.org/images/Winter_Conference/2020/MABA-Conference-Program.pdf)
- Macaluso, C., R. Ehrhardt, K. Cassida, J. Schwehofer, E. Recktinwald, and B. Makela. 2020. Cover crop grazing and backgrounding on carcass quality. *J. Anim. Sci.* Vol 98 (Suppl. 4): 74-75. ASAS Annual Meeting, online. July 19-23, 2020. <https://doi.org/10.1093/jas/skaa278.136>
- Ortner, Kaleb, Karen A. Renner, Alexandra Kravchenko and Dean G. Baas. 2020. Organic Transition across Diverse Topographical Landscapes. Presented at the annual meeting of Soil Science Society of America, Nov 9-12, virtual.

#### MICHIGAN STATE UNIVERSITY COURSES THAT DISCUSS COVER CROPS

CSS 101- Introduction to Crop Science

CSS101L- Introduction to Crop Science Lab

CSS 126- Introduction to Weed Management

CSS 201- Forage Crops

CSS 212- Advanced Crop Production

CSS 326- Weed Science

CSS 360- Soil Biology

CSS 442 Agricultural Ecology

CSS/BSE/FOR 467- BioEnergy Feedstock Production

CSS480- Soil Fertility and Nutrient Management

CSS 488- Agricultural Cropping Systems: Integration & Problem Solving

ENT 205H- Pests Society and the Environment

ENT 479- Organic Pest Management

HRT 251- Organic Farming Principles & Practices

HRT 341- Vegetable Production & Management