

Additional Project Outputs for OREI 2020-51300-32183

Taking Tillage Out of Organic Grain Production with Ecology, Tools, and Technology

Farmer resources: videos

- Loria, K and MR Ryan. 2025. *Stuart Farr of Hudson Valley Hops & Grains on organic no-till for keeping soil covered and fertility.* <https://www.youtube.com/watch?v=P7nZxP1xZhM>.
- Loria, K and MR Ryan. 2025. *Frost Seeding Red Clover with Klaas Martens.* <https://www.youtube.com/watch?v=81FE9cqS8Ss>.
- Loria, K and MR Ryan. 2025. *Chuck Cornillie of Belltown Farms on reducing erosion and sequestering carbon with organic no-till.* <https://www.youtube.com/watch?v=hQrCCoyd-F0>.
- Loria, K and MR Ryan. 2025. *No-Till Planter Demo.* <https://www.youtube.com/watch?v=55eG99esyJA>.
- Loria, K and MR Ryan. 2025. *Organic No-Till Practice.* <https://www.youtube.com/watch?v=BfJC3n4f5uA>.
- Loria, K and MR Ryan. 2024. *Farmer Klaas Martens on adaptive management for organic no-till soybean.* <https://www.youtube.com/watch?v=XSKjcJ0AxFM>.
- Loria, K and MR Ryan. 2024. *Jay Goldmark of Stone House Farm on reducing labor and improving resilience with organic no-till.* <https://www.youtube.com/watch?v=optIP-VUlsQ>.

Other farmer resources:

- Diggins, KR, Murphy S, and Pethybridge SJ. 2024. *Efficacy of OMRI-listed fungicides for white mold control of black bean in New York, 2023.* Plant Dis. Manage. Rep. 18:V021. <https://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2024/V021.pdf>.
- Workman K, Darby H, Ryan MR, Ristow A. 2023. *Making cover crops work in the Northeast: Termination strategies for success.* The Manager. Progressive Dairy. <https://hdl.handle.net/1813/112843>.
- Cornell Climate Smart Water Deficit Calculator. <http://climatesmartfarming.org/tools/csf-water-deficit-calculator/>.
- Northeast Regional Climate Center Water Deficit Calculator. <https://eckben.github.io/water-def-forecast/>.

Conference presentations:

- McFadden, E, K Loria, CJ Pelzer, S Wayman, E Youngerman, B Brockmueller, EM Silva, and MR Ryan. 2024. *Triticale Management Prior to Organic No-till Planted Soybean.* ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.

<https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/159636>. Video recording and abstract.

- Nepal, J, S Pethybridge, and MR Ryan. 2024. *Mulch from Rolled-Crimped Cereal Rye Suppresses White Mold and Weeds in Organic No-till Planted Soybean and Dry Bean*. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX. November 12, 2024. <https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/158220>. Video recording and abstract.
- Menalled, UD, EM Silva, CG Stedden, and MR Ryan. 2024. *Barriers and Drivers of Organic No-till Corn and Soybean Adoption: Insights from a Nationwide Farmer Survey*. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX. <https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/158825>. Video recording and abstract.
- Rowland A. 2023. *Mowing, Zapping, and Outcompeting Weeds: Opportunities and Trade-Offs*. GROW. <https://growiwm.org/mowing-zapping-and-outcompeting-weeds-opportunities-and-tradeoffs/>.

Journal articles:

- Economos Z, Bloom EH, Menalled UD, Pethybridge SJ, Ryan MR, Casteel CL. 2026. *Cereal rye (*Secale cereale*) and canola (*Brassica napus*) cover crops reduce dry bean (*Phaseolus vulgaris*) herbivore damage*. Pest Management Science. <https://doi.org/10.1002/ps.70821>. Paywall.
- Ryan, MR, TJ Rose, S Wayman, CJ Pelzer, and UD Menalled. 2024. *Rolled-crimped cover crops for organic no-till planted winter wheat (*Triticum aestivum*)*. Agrosystems, Geosciences & Environment. 7(4), p.e70015. <https://doi.org/10.1002/agg2.70015>. Open access.
- Allen, J, UD Menalled, G Adeux, CJ Pelzer, S Wayman, AB Jernigan, S Cordeau, A DiTommaso, and MR Ryan. 2024. *Fertility and tillage intensity affect weed community diversity and functional structure in long-term organic systems*. Ecological Applications e3029. <https://doi.org/10.1002/eap.3029>. Open access.
- Stedden, C, EM Silva, MR Ryan, E Mallory, H Darby, J Dawson, A Hartman, and ME Sorrells. 2024. *Organic small grain production in the Upper Midwest and Northeast: challenges and lessons learned*. Agronomy Journal 116:2735-2753. <https://doi.org/10.1002/agj2.21658>. Open access.
- Brockmueller, B., J.L. Drewry, J.L., Vereecke, L., Luck, B., Silva, E.M., Smith, A. 2024. *Row unit down force and coulter effects vary by environmental conditions in organic no-till soybeans*. Agronomy Journal. 116(3):1478-1491. <https://doi.org/10.1002/agj2.21552>. Open access.
- Allen J.; Pelzer C. J.; Brockmueller, B.; Silva, E. M.; and Ryan, M. R. 2023. *No yield benefit from starter fertilizer in soybean no-till planted into rolled- crimped cereal rye*. Agrosystems, Geosciences & Environment 6, e20434. <https://doi.org/10.1002/agg2.20434>. Open access.
- Rowland, AV, UD Menalled, CJ Pelzer, LM Sosnoskie, A DiTommaso, and MR Ryan. 2023. *High seeding rates, inter-row mowing, and electrocution for weed management in*

organic no-till planted soybean. Weed Science 1-42. <https://doi.org/10.1017/wsc.2023.45>. Open access.

- Liebert, J, JH Cherney, QM Ketterings, SB Mirsky, CJ Pelzer, and MR Ryan. 2023. Winter cereal species, cultivar, and harvest timing affect trade-offs between forage quality and yield. *Frontiers in Sustainable Food Systems* 7:96. <https://doi.org/10.3389/fsufs.2023.1067506>. Open access.
- Liebert J, SB Mirsky, CJ Pelzer, and MR Ryan. 2023. *Optimizing organic no-till planted soybean with cover crop selection and termination timing*. *Agronomy Journal* 115:1938-1956. <https://doi.org/10.1002/agj2.21390>. Open access.
- Menalled, UD, RG Smith, S Cordeau, A DiTommaso, SJ Pethybridge, and MR Ryan. 2023. *Phylogenetic relatedness can influence cover crop-based weed suppression*. *Scientific Reports* 6(4), e20426. <https://doi.org/10.1038/s41598-023-43987-x>. Open access.
- Menalled UD, Adeux G, Cordeau S, Smith RG, Mirsky SB, Ryan MR. 2022. *Cereal rye mulch biomass and crop density affect weed suppression and community assembly in no-till planted soybean*. *Ecosphere* 13(6): e4147. <https://doi.org/10.1002/ecs2.4147>. Open access.
- Ryan, MR. 2021. *Crops better when grown together*. *Nature Sustainability* 4:926-927. <https://www.nature.com/articles/s41893-021-00768-6>. Paywall with no abstract.
- Wallace, JM, ME Barbercheck, WS Curran, CL Keene, SB Mirsky, MR Ryan, M VanGessel. 2021. *Cover crop-based, rotational no-till (CCORNT) management tactics influence crop performance in organic transition within the Mid-Atlantic U.S.* *Agronomy Journal* 113 (6): 5335-5347. <https://doi.org/10.1002/agj2.20822>. Paywall.
- Menalled, UD, SJ Pethybridge, CJ Pelzer, RG Smith, A DiTommaso, and MR Ryan. 2021. *High seeding rates and low soil nitrogen environments optimize weed suppression and profitability in organic no-till planted soybean*. *Frontiers in Agronomy* 3:678567. <https://doi.org/10.3389/fagro.2021.678567>. Open access.
- MR Ryan, S Wayman, CJ Pelzer, CA Peterson, UD Menalled, and TJ Rose. 2021. *Winter wheat (*Triticum aestivum* L.) tolerance to mulch*. *Plants* 10:2047. <https://doi.org/10.3390/plants10102047>. Open access.