# Cover Crop Advances in Michigan in 2016



Erin Hill<sup>1</sup>, Dean Baas<sup>2</sup>, Christina Curell<sup>2</sup>, Paul Gross<sup>2</sup>, and Marilyn Thelen<sup>2</sup> <sup>1</sup>Department of Plant, Soil and Microbial Sciences, Michigan State University <sup>2</sup>Michigan State University Extension

MICHIGAN STATE EXTENSION

#### Introduction

Michigan produces more than 300 agricultural commodities, making it the 2<sup>nd</sup> most diverse agricultural industry in the nation. This diversity is also reflected in the range of uses for cover crops. Michigan growers are integrating cover crops into:

- Field crop rotations
- Vegetable rotation
- Orchards (Fruits and nuts)
- Vineyards
- Grazing rotations

As a result of this demand, Michigan produced a variety of cover crop related research projects, extension events, publications, society presentations, and MSU course work in 2016.

#### New Website

covercrops.msu.edu

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## Featured Publications

#### **EXTENSION PUBLICATIONS**

- MSUE News (<u>msue.anr.msu.edu</u>)
  - 19 articles published in 2016, excluding field day announcements
  - 14 different authors writing about cover crops
- New Bulletin- Managing soil health for root and tuber crops (E-3343)- available for purchase at MSUE Bookstore (shop.msu.edu)



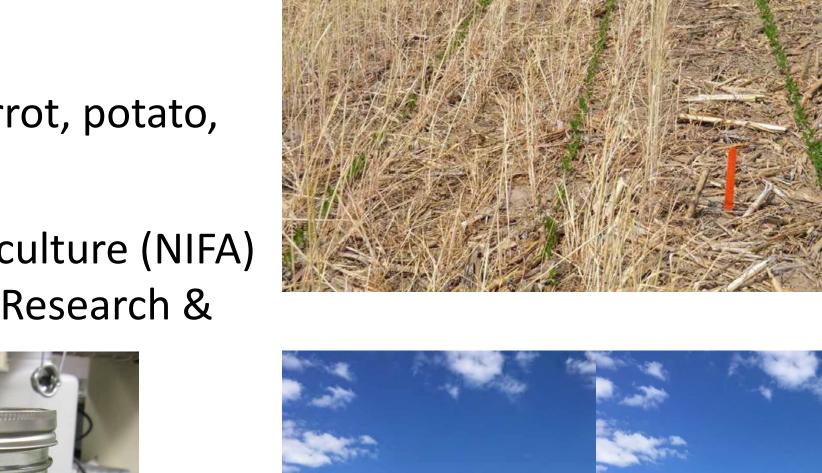
#### **2016 REFEERED PUBLICATIONS**

- Strip-intercropping of rye-vetch mixtures affects biomass, C:N ratio, and spatial distribution of cover crop residue. Agron J. 108: 2433-2443. Lowry & Brainard
- Integrating winter annual cereal rye or triticale into a corn forage biofuel production system. J Crop Improv. 30:526-530. Tumbalam et al.
- Cover crop impact on weed dynamics in an organic dry bean system. Weed Sci. 64:261-275. Hill et al.
- The effect of conservation tillage and cover crop residue on beneficial arthropods and weed seed predation in acorn squash. Environ Entomol. 45:1543-1551. Quinn et al.

## Cover Crop Research

- Over 25 research projects examining cover crops were conducted by MSU researchers in 2016
- Objectives spanned multiple topic areas, including:
- Commodity specific cover crops
- Cover crop management
- Cover crops as forages/feed
- Pest/disease management
- Soil fertility
- Soil health/biology
- Funding for cover crop research in Michigan comes from a number of sources, including:
  - MI commodity groups (Corn, soybean, carrot, potato, cherry, etc.)
  - USDA- National Institute of Food and Agriculture (NIFA) programs such as the Organic Agriculture Research & Extension Initiative (OREI)
  - Michigan's Project GREEN
  - CERES Trust

Figure 4. Incubation chamber utilized by team for studying the effects of increasing cover crop diversity on microbial populations and weed seed decay (Tiemann and Renner).



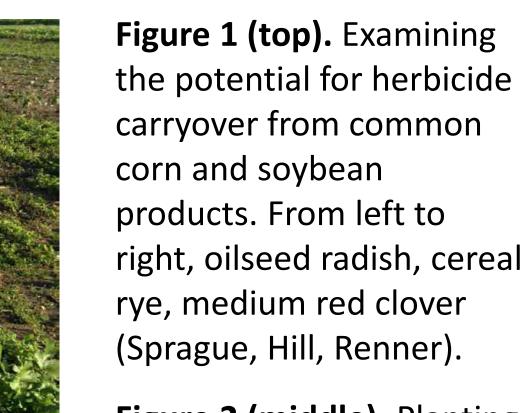


Figure 2 (middle). Planting green, soybeans into cereal rye. This 1<sup>st</sup> year study is looking at how rye termination times and methods impact soybean growth and yield and weed emergence (Hill).

Figure 3 (bottom). Biomass production of corn, pearl millet, sorghumsudangrass, and teff (left to right) before 2017 potatoes (Long, Tiemann, Rosenzweig, Hill).

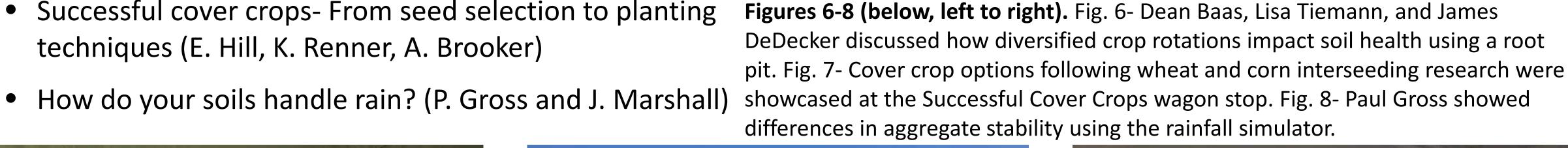


# Cover Crop Extension Meetings & Field Days

- MSUE and MSU faculty held over 37 meetings and field days addressing cover crop management
- Over 3,000 people attended the 2016 meetings
- Cover crops were prominently featured at 3 stops in the first ever MSU Agriculture Innovation Day in Frankenmuth, MI with over 430 people in attendance. The 2016 theme was "Focus on Soils."
  - Healthy soil- Dig a little, lean a lot (L. Tiemann and D. Baas)
  - Successful cover crops- From seed selection to planting techniques (E. Hill, K. Renner, A. Brooker)



Figure 5. Most of the MSUE/MSU team of cover crop presenters at the inaugural MSU Agriculture Innovation Day in Frankenmuth, MI on August 24<sup>th</sup>. Front, left to right: Lisa Tiemann, Erin Hill, Marilyn Thelen, Paul Gross, Christina Curell, Dean Baas. Back left to right: Aaron Brooker, James Sarah Hanks, Marshall (NRCS).









More information can be found in the full 2016 MI report @ covercrops.msu.edu