



NRCS Jamie L. Whitten Plant Materials Center 2021 Progress Report of Activities – December 2021

Cover Crop Planting and Termination Study

The objective of this study is to evaluate how planting and termination date effects the performance and growth characteristics of cool-season grass (black-seeded oats, cereal rye, triticale, and winter wheat) and legume (berseem clover, crimson clover, hairy vetch, and austrian winter pea) cover crops. Information from this study will support NRCS conservation practice standard Cover Crop (340) with recommendations on the appropriate times to plant and terminate cover crop species in the mid-South. Planting dates are 9/15, 10/1, 10/15, 11/1, and 11/15; in combination with termination dates 2/15, 3/1, 3/15, 4/1, 4/15, and 5/1. Evaluations include percent emergence (2 & 4 weeks after planting), percent canopy cover (winter, spring regrowth, and harvest), above ground biomass, and nitrogen content. Grasses were initiated in 2020 and legumes in 2021.

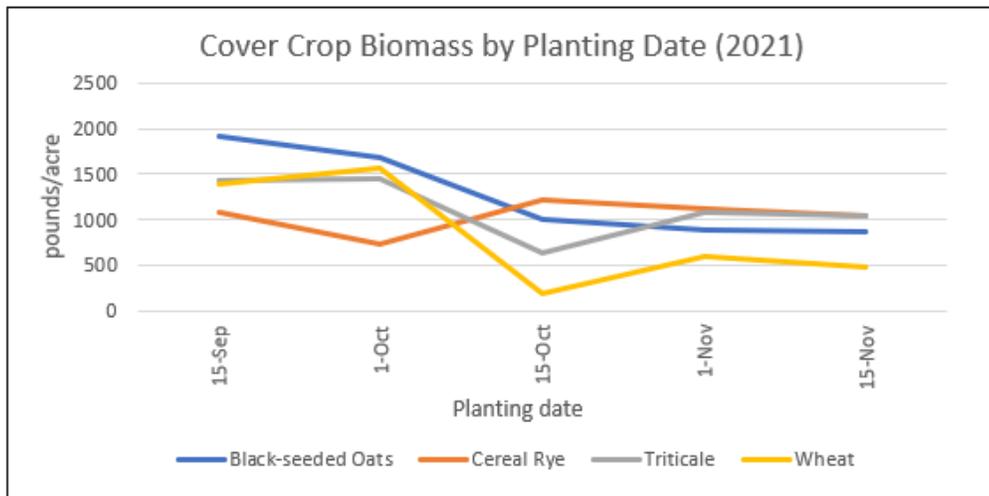


Figure 1. Cover crop biomass (lb/acre) by planting date for 2021 at the Jamie L. Whitten PMC.

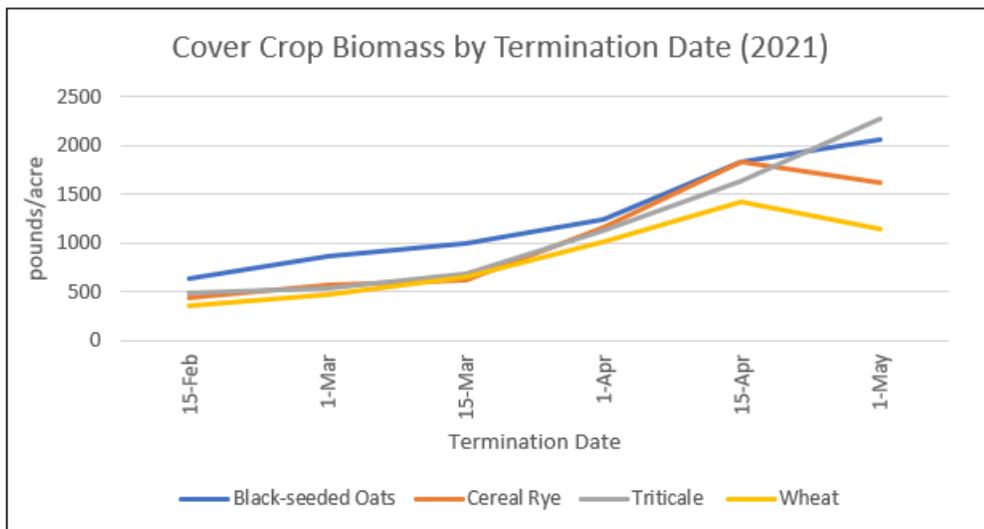


Figure 2. Cover crop biomass (lb/acre) by termination date for 2021 at the Jamie L. Whitten PMC.

Warm-Season Cover Crop Short Window Planting Study

The objective of this study is to evaluate the performance of teff, browntop millet, and sorghum-sundangrass as a late planted and short duration cover crop to address resource concerns for vegetable production and/or preventative plantings. Planting dates are 6/1, 6/15, 7/1, and 7/15; in combination with termination dates of 6 weeks, 8 weeks, and 10 weeks after planting. Evaluations include percent emergence (2 & 4 weeks after planting), soil moisture (at planting and harvest), percent canopy cover (during emergence and at harvest), above ground biomass, plant height, and nitrogen content. Study will be repeated in 2022 and 2023.



Figure 3. Individual Teff plot 6 weeks after June 1st planting at the Jamie L. Whitten PMC.

Pollinator Habitat Management Demonstration

A new pollinator habitat demonstration site was established at the MSPMC. A wildflower mix meeting NRCS Conservation Practice Standard for pollinator habitat (4 spring, summer, and fall blooming species) was seeded with a Brillion cultipacker. The 2-acre site is divided into 1-acre plots based on time of seeding (fall & spring). The 1-acre demonstration plots are further subdivided into 4 management zones to demonstrate the effects of tillage, prescribed burning, mowing, and no maintenance on long-term wildflower abundance and species diversity.

In partnership with the Holly Springs and Tombigbee National Forest Service Districts, PMC staff planted pollinator habitat demonstration sites at the Choctaw and Davis Lake Recreation areas. A commercially available wildflower mix was seeded in September 2021 with a Brillion cultipacker. These demonstration sites will help enhance pollinator habitat on the National Forest and serve as future PMC training sites.



Figure 4. Pollinator demonstration site at the Jamie L. Whitten PMC.

On-farm Cover Crop Demonstration

In FY21, the MSPMC planted off center cover crop demonstrations to promote the adoption of Conservation Practice Standard Cover Crop (340). Sites were chosen based on geographical location and varying soil types. We worked closely with NRCS Area and Field offices for site location and training opportunity. We planted 5 demonstration sites that consisted of multiple cover crop species and mixes. Unfortunately, due to Covid 19 restrictions we were unable to have field days at these sites.



Figure 5. Left: PMC staff planting cover crop demos near Prairie, MS. Right: Individual plot of 'Elbon' cereal rye at an off-center demonstration site.

Cover Crop Mix, Seed Cost, and Seeding Rate Calculator

The [Cover Crop Mix, Seed Cost, and Seeding Rate Calculator](#) is a tool designed for conservation planners and producers in the mid-South to estimate seed cost and seeding rates for both recommended and custom cover crop mixes. The tool presents 25 cool-season and 19 warm-season cover crop species and their estimated cost. Additionally, each species is listed by functional group (grass, legume, or forb) with recommended planting dates, planting rates (drill or broadcast), and recommended varieties. There are 8 recommended cover crops mixes available for users unfamiliar with developing mixes. For more familiar users, there is an option to customize mixes and planting rates for each species. To assist conservation planners, Conservation Stewardship Program enhancement practices and codes are included for each species.

Publications, Presentations, Training, & Outreach

- [Release brochure for 'Highlander' eastern gamagrass](#) – update for a conservation plant release.
- [Mid-South Plant News](#) was brought back to life in FY21. Keeps NRCS and the public aware of ongoing activities.
- Mississippi NRCS EQIP Statewide Training – presentation to MS NRCS staff about current research focus and activities at the PMC.
- NRCS New Employee Training – MSPMC staff assisted the Area 1 office in training new MS NRCS employees on basic agriculture, cover crops, pollinator habitat, and conservation agriculture.
- MSPMC Update of Activities to Mississippi NRCS Staff – Michael Richard presented an update of PMC activities and studies to MS NRCS staff via TEAMS.
- Cover Crop Training – TEAMS virtual training for MS NRCS staff on cover crop basics. Jonathan Vollmer presented an in-depth training on the new Cover Crop Cost Calculator.
- Pollinator Training – PMC staff trained Holly Springs/Tombigbee Forest Service staff on pollinator site preparation, planting, and maintenance.
- ROV Training – Michael Richard is now a certified ROV DriverCoach. He will provide ROV training to MS NRCS staff per USDA safety policy.

The Jamie L. Whitten Plant Materials Center

The Jamie L. Whitten Plant Materials Center (MSPMC) works with NRCS field offices and land managers in Mississippi, Louisiana, Alabama, Arkansas, Kentucky, Missouri, and Tennessee. The MSPMC provides vegetative solutions for soil health, pastureland improvement, cropland erosion, critical area erosion control, urban conservation, wildlife habitat enhancement, and water quality improvement. The center also releases improved conservation plants addressing resource challenges such as wetland mitigation, erosion control, riparian buffers, and wildlife habitat.

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