United States Department of Agriculture

Mid-South Plant News

A Newsletter from the Jamie L. Whitten Plant Materials Center, Coffeeville, MS – Summer 2021

Manager's Message

Let me take this moment to introduce the Jamie L. Whitten Plant Materials Center, located in Coffeeville, MS, to new staff. Our mission is to develop vegetative solutions and plant-based technology to solve natural resource concerns and to function as plant experts for NRCS technical and field staff. Currently, our focus is finding plant solutions to improve soil health across the Mid-South. We are exploring how cover crops benefit production agriculture such as weed suppression, controlling erosion, adding nitrogen, increasing soil organic matter and other soil health improvements.

Speaking of cover crops! From 2016-2018, the PMC participated in a national cool season cover crop adaptation trial. Cover crop cultivars, also called varieties, exhibit different strengths and weaknesses. Selecting a variety based on known strengths increases the chance of solving selected resource concerns. This study tracked how well cover crop cultivars grow and survive in the Mid-South, so that NRCS staff can make research-based recommendations to landowners. A regional technical note and MSPMC final study report contain the findings of this study. These and other cover crop information can also be found here on the Plant Materials Program national website. I would encourage all field office staff to print or save a copy for reference when recommending cover crop species and cultivars to landowners.

Sincerely,

Michael Richard

Be on the Lookout for Cover Crop Training

Microsoft Teams

Keep an eye on your email inbox in August. We are working on a Cover Crop training via Teams.

Topics of discussion:

1. How cover crop functional groups address specific resource concerns
2. Southeast Cover Crop Selection Tool
3. New Cover Crop Mix, Seed Cost, and Seeding Rate Calculator for the Mid- South

Meet the newest member of your PMC team

Jonathan (Jon) Vollmer started in February as a Study Leader (Agronomist) via the USDA Pathways Program for Recent Graduates. Jon was born in Minnesota but spent most of his childhood in North Dakota and Missouri. He has a master's degree in Plant Sciences (2019) and a bachelor's degree in Crop and Weed Sciences (2017) from North Dakota State University (NDSU) in Fargo, ND. Go Bizon! During his undergraduate years, he worked in various crop breeding programs and discovered his passion for agricultural research. His master's thesis was on simulated damage to spring canola where he evaluated the impact of stand reduction and stem cut-off on seed yields and agronomic traits. After graduation, he worked as a research assistant for Calyxt, Inc. in Roseville, MN. However, after six years of living in the tundra, Jon decided to move somewhere warm for a change. His passion for agriculture started when he was a child visiting his grandfather's farm in Willow City, ND. His paternal side of the family has been farming in the United States for six generations and received their land via the Homestead Act. The farm is predominantly focused on small grain and oil seed (soybean, canola, sunflowers, and flax) production with a substantial cow-calf component. As many of you understand farming is never easy, Jon's great-grandfather (Arthur Vollmer) almost lost the farm during the dirty thirties due to the great depression and dust bowl. Nevertheless, the farm was able to survive and his great-grandfather would end up working for the soil service. As a result, most of the farm has been planned with conservation practices such as alley cropping, windbreaks, minimal tillage, CRP, and cover cropping. His great-grandfather would also use the farm to experiment with using the shelter belts to catch snow drift and provide wildlife habitat by interplanting fruit/nut trees in the windbreaks. Jon's grandfather (Victor Vollmer) would continue to steward the land with conservation practices and teach his children and grandchildren to love the land. Ultimately, this would install a passion for land stewardship in Jon and inspire him to pursue a career in agriculture. When off the clock, Jon can be found fishing, hiking, gardening, working on his motorcycle, and attending service at the Water Valley SDA Church.

Can you identify these wildflowers growing at the PMC?

A.

B.

C.

Find answers on Page 3.

New Technology: Cover Crop Mix, Seed Cost, and Seeding Rate Calculator for the Mid-South

This new Cover Crop Mix, Seed Cost, and Seeding Rate Calculator for the Mid-South is meant to be used in conjunction with the Southeast Cover Crop Selection Tool which can identify species that are best suited for the resource concern being addressed. This tool will allow producers and NRCS field staff to estimate seed costs and seeding rates for the recommended species suggested by the selection tool. To find the calculator go to the Field Office Technical guide (FOTG) for Mississippi and open the file named "340 MS OTH Cover Crop Calculator Final 2021" or click the link above. Instructions on how to use this tool can be found in the tab labelled "1. Introduction." This tool contains a list of cover crop species that have been grown successfully in the Mid-South. Each species has information pertaining to seed costs ($/lbs.), seeding rates, seasonality, functional group, Root knot nematode (RKN) host, planting date, recommended varieties, ability to be aerial broadcasted, and CSP enhancement (number and code) for each resource concern being addressed. Modifications can be made to the seed cost ($/lbs.) column to adjust for local seed prices and seed costs in the cover crop mixes. Additionally, there are seven pre-calculated cover crop mixes that can be found in tabs 3a (broadcasting) and 3b (seed drill) which are recommended for addressing specific resource concerns in the Mid-South. Lastly, there is a custom cover crop calculator which can be found in tabs 4a (broadcasting) and 4b (seed drill) which will allow the user to create custom cover crop mixes.

5 tips for choosing a successful cover crop mix

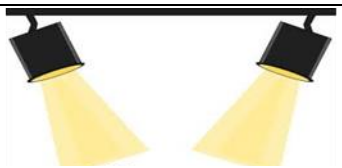
'Mississippi Mix' consists of 50% cereal rye, 25% crimson clover, and 25% daikon radish.

1. Combine a minimum of three species with each consisting of a different functional group. *Species selection should be based on meeting the producer's resource concerns*.
2. Do not include a cover crop species that is already in the crop rotation.
3. Combine species that are the same seasonality (i.e. warm season or cool season).
4. Grazing mixes should include a mixing rate of 25-50% legumes, 25-50% grasses, and at most 25% forbs.
5. For nitrogen production, a cover crop mixing rate should include a minimum of 50% legume species with the remaining percentage equally divided between grasses and forbs.

Picture Answers:

A. Rattle snake master (*Eryngium yuccifolium* Michx.)
B. 'Lark Selection' partridge pea (*Chamaecrista fasiculata* (Michx.) Greene)
C. Swamp rose mallow (*Hibiscus grandiflorus* Michx.)

Cover crop spotlight: black-seeded oats



Black-seeded oats

Even though temperatures in the Southeast are blazing hot, it is important to start the conversation with landowners who are interested in planting cover crops this fall. One option for producers in the Mid-South is black-seeded oats. Black-seeded oats (*Avena strigosa*) is a winter annual grass that grows from 2.5-5 feet tall depending on growing conditions. In a recent MSPMC study black-seeded oats exhibited excellent winter survival and biomass production. Black-seeded oats prefer sandy or loamy soils but can grow in heavy clays. Benefits include nitrogen scavenging, improving soil organic matter and structure, erosion control, weed suppression, and livestock forage.

'Cosaque' black-seeded oats planted at MSPMC

Which cultivar is best for the Southeast?

'Cosaque' is the recommended cultivar for use in the Mid-South. Cosaque stays vegetative later in the spring than most other winter annual grasses. Most studies show it is resistant to or inhibits some species of nematodes. In fact, we recommend planting it with Nematode radish for potential nematode control. Research has shown that oats exhibit allelopathic properties which help inhibit some broadleaf weeds.

Table 1. 'Cosaque' black-seeded oats fast facts.

Black-seeded oats plant facts	Cool-season grass in the Poaceae family
Planting date	Can be established in conventional, reduced tillage, or no-till systems by drill or broadcast seeding. Best planted between October 1 and November 1.
Seeding rate	Varies, in general for pure stand 50-70 lb PLS/acre drill, 100 lb PLS/acre broadcast, reduced for mixes.
Termination date	Can be killed with herbicide, tillage, roller crimper, and/or mower depending on growth stage at termination.
Mixes well with	Cool season/small seeded legumes (i.e. clovers) and forbs (i.e. brassicas).

Contact Us!

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