



United States Department of Agriculture

Mid-South Plant News

A Newsletter from the Jamie L. Whitten Plant Materials Center, Coffeetown, MS – Summer 2026

Manager's Message

Welcome to the Jamie L. Whitten Plant Materials Center summer newsletter. 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 and address resource concerns across the Mid-South. We are exploring how cover crops benefit production agriculture as well as developing technology to assist conservation planners in choosing the right cover crop species to address resource concerns. Please visit the Jamie L. Whitten Plant Materials Center [website](#) and explore our publications on cover crops and other conservation information.

I'd like to highlight a few recent documents that may help your planning process:

[2025 Progress Report of Activities](#)

[Plant Materials Technical Note 114: Crimson Clover \(*Trifolium incarnatum* L.\): When to plant and terminate in the Mid-South?](#)

[Plant Materials Technical Note 115: Hairy Vetch \(*Vicia villosa* L.\): When to plant and terminate in the Mid-South?](#)

We are here to serve NRCS staff and the public. Please contact us with any questions you may have.

Thank you for your time,

Jonathan Vollmer (study-leader))

When should I plant & terminate my crimson clover or hairy vetch?

Annual cool season legume cover crops may provide many benefits to production agriculture such as controlling soil erosion, reducing fertilizer costs, and improving yield. However, the success of an annual cool season legume is dependent on choosing proper planting and termination dates so that the cover crop can address the resource concern. The purpose of this study was to evaluate two cool season annual legume species based on planting and termination date combinations to identify best cropping practices. Crimson clover (*Trifolium incarnatum*) and hairy vetch (*Vicia villosa*) were evaluated at the Jamie L. Whitten Plant Materials Center near Coffeetown, MS in 2022-2023 and 2023-2024. The study evaluated dry matter production, nitrogen yields, phosphorus yield, and potassium yield. Crimson clover planted from September 15 to October 15 and terminated on or after April 15 had significantly higher dry matter, nitrogen, phosphorus, and potassium yields compared to November plantings. Crimson clover planted in November failed to emerge in 2022-2023. It is recommended to plant crimson clover from September 15 to October 15 and terminate on or after April 15. Hairy vetch planted between September 15 and October 15 and terminated on



Figure 1. 'Dixie' crimson clover planted on October 1, 2022. Picture was taken on April 15, 2023.

or after April 15 had the highest dry matter production, nitrogen yield, phosphorus yield, and potassium yield compared to November plantings. November plantings failed to emerge until May 1 in 2022-2023. It is recommended to plant hairy vetch between September 15 and October 15 to maximize cover crop benefits.

For more specifics on this study click link: [Planting and Termination Date Effect on Aboveground Performance of Two Cool Season Legume Cover Crops](#)

Establishing cover crops via arial broadcasting into standing cotton

A new study has started at the Jamie L. Whitten Plant Material Center evaluating the possibility of earlier planting windows via aerial broadcast into standing cotton. This study consisted of three different planting windows depending on cotton production. The planting windows consisted of planting cover crops two weeks prior to defoliation, defoliation, and harvest. Cover crop treatments consisted of 50% cereal rye (50 lbs/acre), 100% cereal rye (100 lbs/acre), mix (50 lbs/acre of cereal rye + 10 lbs/acre of crimson clover), and no cover crop. The three planting dates in combination with four cover crop types resulted in twelve treatments. This project was conducted off-site on private cropland with a delta site (irrigated and conventional tillage) and a hill site (dryland and 20+ years no-till). Dry matter samples were taken on the first of the month from January to April (if cover crops were not terminated by producer) and percent cover was taken on the 15th of the month starting in December via transecting line. A subsample of each dry matter sample was sent to Mississippi State Chemical Lab for nutrient analysis. The first season of this project was completed in the 2024-2025 season; however, the 2025-2026 season failed to establish due to unforeseen events. Preliminary results have shown that the delta location tended to produce higher dry matter yields compared to the hill location within the same treatments (Figure 3 and 4). The delta site was an irrigated and conventionally tilled field. This contributed to greater soil moisture and fertility at planting resulting in greater dry matter production. At both locations, 50% cereal rye produced similar amounts of dry matter compared to the 100% cereal rye when planting two weeks before defoliation and during defoliation of cotton. Underneath the canopy of standing cotton, cover crop seedlings were able to take advantage of the cool and moist microclimate resulting in greater survivability even when seeding rates were reduced. In past studies, earlier plantings have been shown to result in greater accumulation of growing degree days units contributing to greater vegetative growth compared to delaying planting until November. Dry matter yield increased as harvests were delayed for all treatments due to greater growing degree day accumulation in the spring. Additionally, it was observed that crimson clover survived to a greater extent in the mix treatment when planting occurred in the first two planting windows (Figure 2). Earlier planted crimson clover seedlings were able to develop to a greater extent resulting in winter, survivability being higher. This project will be conducted for another two seasons (2026-2027 and 2027-2028) to determine the feasibility of broadcasting cover crops into standing cotton at earlier windows.



Figure 2. Cover crop mix at the hill location planted in order from left to right: two weeks prior to defoliation, defoliation, and harvest. Pictures were taken on March 28, 2025.

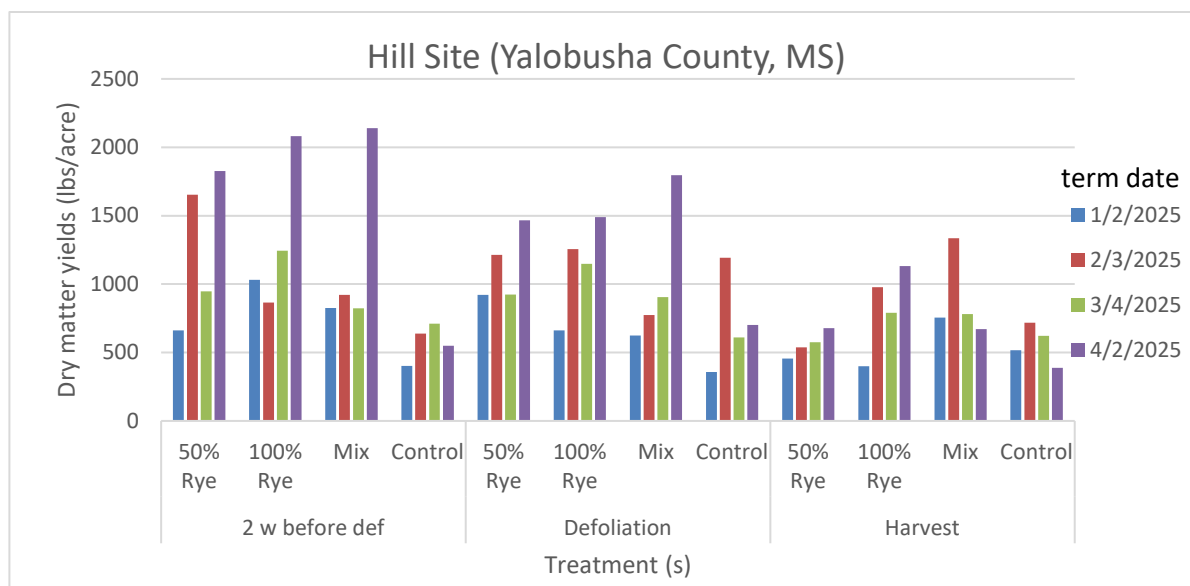


Figure 3. Dry matter yields (lbs/acre) depending on treatment and termination dates at the hill location (Yalobusha county, MS). USDA-NRCS, Coffeeville, MS, 2026.

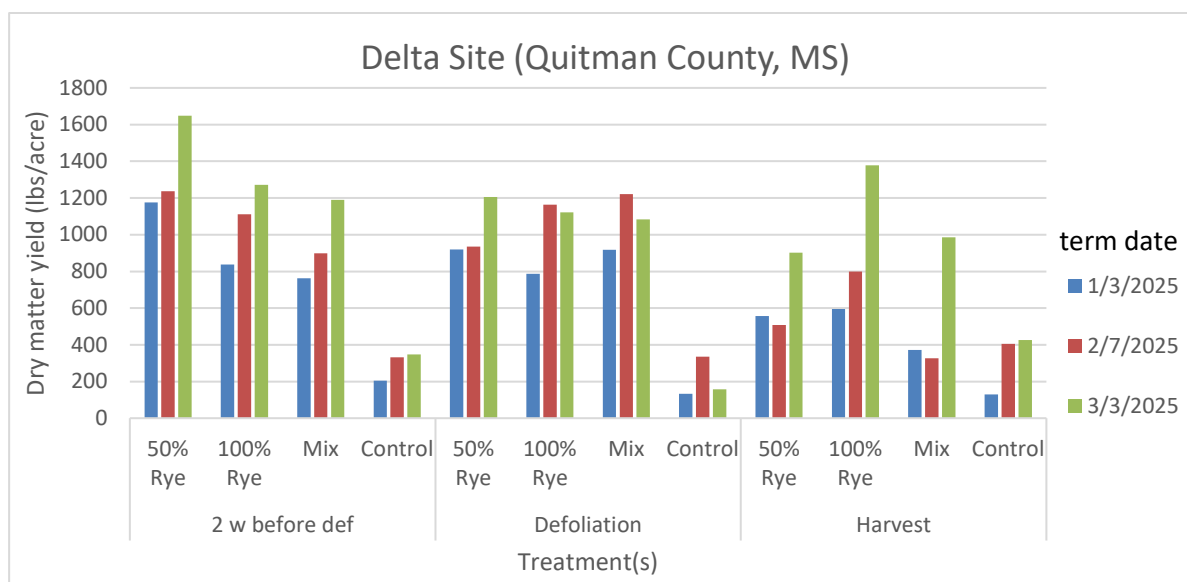


Figure 4. Dry matter yields (lbs/acre) depending on treatment and termination dates at the hill location (Quitman county, MS). USDA-NRCS, Coffeeville, MS, 2026.

Cover crop spotlight: Daikon Radish

Cover crops have increased in popularity over the last decade. NRCS conservation practice standard 340 - Cover Crops enables landowners to cost share planting cover crops to enhance soil health. One popular option for producers in the Mid-South is daikon radish (*Raphanus sativus* var. *longipinnatus*). The reason being that daikon radish can be used to address soil compaction, nutrient scavenging, and nematode pressure in cropland. Daikon radish seeds are available at most feed stores with seed costs between \$1.50 to \$3.00 per lbs. The lower seeding rate of daikon radish for drilling (6-8 lbs/acre) and broadcasting (6-12 lbs/acre) makes establishing daikon radish economical with seed costs between \$15 to \$25 per acre. One big disadvantage of daikon radish is the lack of winter hardiness resulting in the radish winterkilling in most years.

Which cultivar is best for the Southeast?

Nitro and Nematode Control are recommended cultivars for use in the Mid-South. Nitro is a daikon radish variety developed predominantly for nutrient scavenging and reducing soil compaction. It has a large cylindrical tap root and tends to push the crown above the ground. Nematode Control was developed predominantly for bio-fumigation and nutrient scavenging. Bio-fumigation is an agricultural technique where specific plants are grown and incorporated into the soil to release plant compounds that suppress pests. Nematode Control tends to be more winter hardy than Nitro, but its root system tends to be comprised of multiple smaller taproots compared to Nitro radishes single large taproot.

Table 1. Daikon Radish fast facts.

Daikon Radish plant facts	Cool-season forb in the Brassica family
Planting date	Can be established in conventional, reduced tillage, or no-till systems by drill or broadcast seeding. Best planted between September 15 and October 15.
Seeding rate	Varies, in general for pure stand 6-8 lb PLS/acre drill, 6-12 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 (e.g., clovers) and grasses (e.g., small grains).

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Daikon Radish



Figure 5. 'Nitro' daikon radish growing at the MSPMC.

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