

NRCS Appalachian Plant Materials Center

2024 Report of Activities – January 2025

Adaptation of Pasture and Hayland Species for Both Mechanical and Ruminant Harvest in Appalachia (Year 4)

Year four of this study began and ended with complete botanical composition and survivability evaluations of endophyte-infected tall fescue ('KY-31'), novel endophyte tall fescue ('BarOptima Plus'), orchardgrass ('Olathe') and a mixture of KY-31 tall fescue and white clover ('Alice') under four management practices consisting of overgrazing with high fertility, overgrazing with limited fertility, optimal grazing with high fertility, and optimal grazing with limited fertility (Fig. 1). Management practices were designed to simulate overgrazing and optimal grazing on pastures with and without fertility enhancements. Overgrazed plots were allowed to grow to an average height of 3" - 5" before being clipped to 1" height. Optimal grazing plots are allowed to grow to an average height of 8" - 12" before being clipped to a 4" height. This year we harvested approximately 600 plots. Moisture was well below average for the area in 2024 providing less than adequate growth and productivity of the grasses and mixtures. Regardless of overgrazed or well managed simulations, we observed plots with added nutrients produce more biomass, in particular, the BarOptima Plus novel endophyte and Alice white clover mixture. One consistent observation with a later onset this season was that overgrazed simulation plots show considerable growth of crabgrass (*Digitaria* spp.). Initial results from this study were presented January 2024 at the American Forage and Grassland Conference in Mobile, AL. The study will continue for one more year before compiling final data.



Figure 1. Pasture and hayland experimental plots in 2024.

Observational Plantings

The Appalachian Plant Materials Center (WVPMC) has completed year 2 of an observational study in cooperation with six other plant materials centers (ETPMC, MSPMC, GAPMC, FLPMC, MOPMC & ARPMC) to ascertain the potential area or region of adaptation of 29 conservation plant releases. These include a wide variety of grass and forb species such as herbaceous mimosa, ashy sunflower, gayfeather, swamp sunflower, big bluestem, eastern gamagrass, Indiangrass, little bluestem, splitbeard bluestem, paspalum, switchgrass, wildrye and velvet rosette (Fig. 2).

Observations show some expected outcomes as well as some selections from other PMCs that are performing much better than anticipated. Results from year one and two evaluations are summarized, and we are looking forward to what happens in year three.

We will continue to collect plant adaptation and performance data for 5 years to assess the potential areas of use of each release.



Figure 2. Observational planting, summer of 2024, at the Appalachian PMC.

Presentations and Outreach

This year, the WVPMC hosted a two-day training and meeting in June with members of the Tennessee Plant Materials Committee. Staff from the East National Technology Support Center were present and assisted with the event. It was a great two-day session with time spent reviewing the work currently underway, training from the American Chestnut Foundation, plant identification work in weeds, grasses, shrubs and trees, as well as, a review of warm season grass and pollinator species. The group had an opportunity to discuss the direction of the Plant Materials Program and activities in eastern Tennessee. Items were identified for continued communication and transfer of information. We look forward to more outreach events like this one.



Figure 3. Members of the Tennessee Plant Materials Committee and East National Technology Support Center staff in June 2024.

Additional Presentations, Outreach, and Upcoming Studies

- Land Judging and Homesite Evaluation Contest – The WVPMC hosted the Southern West Virginia contest, aided, and answered questions related to land use and soils located at the PMC. The contest was an opportunity for local 4-H and FFA students to visit and tour the PMC while participating in the contest as well.
- Statewide Grassland Evaluation Contest – The PMC aided 50+ students with plants and overseeing the Plant ID portion of the contest.
- The WVPMC began taking part in a multi-PMC, multi-year, cover crop study being conducted in collaboration with the ARS.
- Hosting of an evening session and presentation on bio-char research and how it can fit into NRCS CPS 336 by Dr. Haas from WV State University

The Appalachian Plant Materials Center

The Appalachian Plant Materials Center, in Alderson, West Virginia, provides service to areas in West Virginia, Tennessee, Kentucky, North Carolina, Virginia, Ohio, and Pennsylvania. The PMC provides vegetative solutions for soil health, pastureland and hayland management and improvement, cropland erosion control, critical area erosion control, urban conservation, wildlife habitat enhancement, and water quality improvement.

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