USDA United States Department of Agriculture

NRCS Appalachian Plant Materials Center
2021 Progress Report of Activities – December 2021

Best Management of Pasture and Hayland Species in Appalachia

In the Appalachian region continuous grazing and overgrazing, or haying of pastures or hayland, has the potential to cause several conservation and production issues. The resource concerns associated with continuous grazing and overgrazing include increased soil erosion, degraded water quality, limited forage availability, decreased animal performance, animal health issues and soil health degradation.

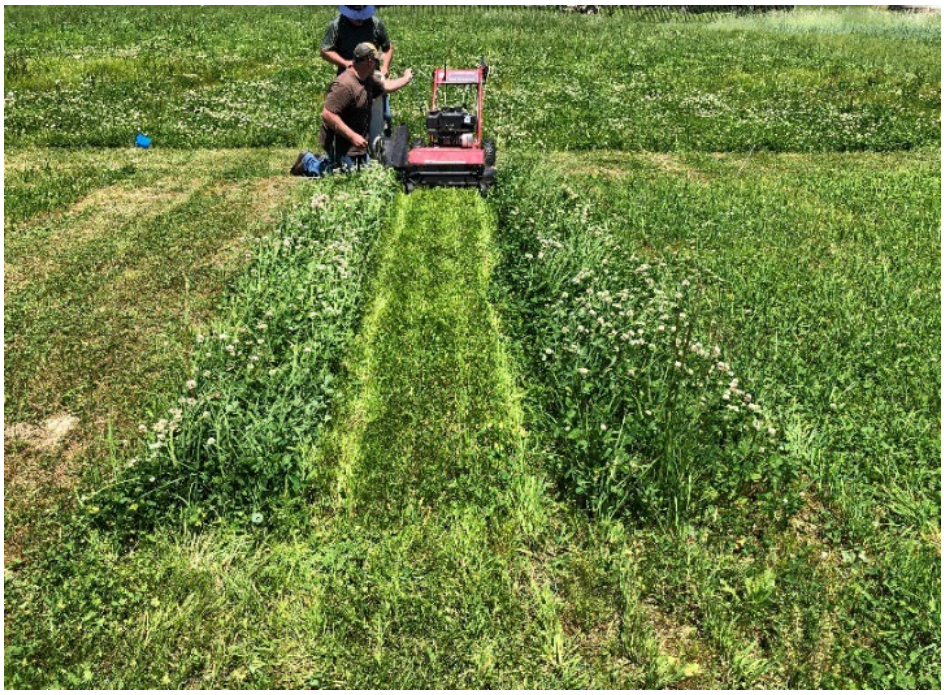

Figure 1. Best management rotational plot of KY 31 fescue and Alice white clover harvested at a height of 4" at the APMC.

The Appalachian Plant Materials Center (APMC)installed a study to look at the effects of various management practices on commonly grown pasture species. Four species/mixes are being tested in this study that were selected based on dominant forage species found in the Appalachian region. Selected species include 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). Management practices being utilized are designed to compare simulated overgrazing with best management rotational grazing on pastures that have both fertility inputs and those without fertility inputs. The four selected treatments include overgrazing with fertility added, overgrazing with no fertility added, best management rotational grazing with fertility input added and best management rotational grazing without added fertility. A walk behind mower with a forage collection chute attached is the tool being used to harvest all plots. Overgrazed plots were allowed to grow to an average height of 3"- 5" before being "grazed" to 1" height. Best management rotational grazing plots are allowed to grow to an average height of 8" - 12" before being "grazed" to a 4" height.

The goal of the study is to demonstrate the effects of overgrazing and no added fertility on pasture species longevity, forage composition, and forage production. We are hoping to demonstrate that. With proper management, pastures and hayfields can be more productive and maintain desirable forage species for longer periods.

Cover Crop Demonstration Plots

The objective of this demonstration is to evaluate the difference in establishment methods. Two strips of Daikon Radish (seeded in late September), one strip was sprayed and drilled in while the other was sprayed, disked, lightly tilled, and broadcast seeded. These were compared for establishment and for early and late growth. These will be repeated in 2022.

Figure 2. Broadcast seeded radish plot exhibiting faster growth than the drilled plot which showed faster establishment within the first two weeks of planting in late September at the PMC.

Pollinator Habitat Management Demonstration

A new pollinator habitat demonstration site is being established at the APMC. The site was started in 2020 in partnership with WV State University. The one- acre site is currently showcasing eighteen pollinator species. In addition to the two species shown below, are Wild Bergamot, Maximillion Sunflower, New England Aster, Purple Coneflower, Little Bluestem, Butterfly Milkweed, Virginia Wild Rye, Partridge Pea, Showy Tick Trefoil, Big Bluestem, Yellow Prairie Coneflower, Common Milkweed, Oxeye Sunflower, Joe-Pye weed, Lanceleaf coreopsis, and sideoats grama. We hope to utilize the plots for training sessions such as the upcoming conservation planner training later this year. All plants were propagated from seed in the Greenhouse at the PMC and transplanted as plugs into the pollinator garden. A larger two-acre

Figure 3. Pollinator demonstration site at the PMC. Mountain mint in the foreground and Black-eyed Susan in the background.

demonstration plot was seeded to a wildflower mix meeting NRCS Conservation Practice Standard for pollinator habitat and was split into two seeding methods. One half was cultivated and broadcast seeded while the other was seeded using a Tye Seeder.

Publications, Presentations, Training, & Outreach

- WV NRCS Plant Materials Committee Meeting (PMC) – First meeting of the new WV PMC representatives. The focus was on reviewing the PMC operations as well as providing field input on the PMC Needs Assessment.
- NRCS Soil Health Training and Soils Collection – WV staff, led by the state and area soil scientists, collected samples on-site for regional study and overview of the PMC soil health.
- Statewide Grazing Training – Isaac Wolford made presentation to NRCS staff, WVU Extension, and WV Conservation Agency participants.
- NRCS WV All Employee TEAMS virtual meeting - Isaac Wolford provided an update of PMC activities and studies to the employees as well as providing a presentation on telework, the pandemic, and maintaining health both mentally and physically.

The Appalachian Plant Materials Center

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

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