



Maine

Regional objectives: *High disturbance; Forestry-ag integration; Nutrient management; Dairy bedding; PFAS*

Production systems: *Potatoes/high disturbance vegetables, corn silage/dairy/grazing*

Biochar producers: [Standard Biocarbon](#)

University Collaborator: *University of Maine*

American Farmland Trust (AFT) will collaborate with Standard Biocarbon Corporation in Maine to source clean, local biochar for 11 trials. These trials will demonstrate diversification in potato and potentially other high disturbance production systems (such as vegetables), as well as tackle nutrient management and greenhouse gas (GHG) challenges in dairy systems. An abundance of local waste wood feedstock to produce biochar facilitates potentially significant solutions for three challenges that may be mitigated by scaling up biochar use. First, potatoes (and other crops) are grown in high-disturbance systems, limiting reduced tillage options. Most Maine potatoes are grown in Aroostook County where there is little access to affordable sources of manure or compost and a very short growing season, limiting the ability for cover crops to produce substantial biomass even when they are included in the system. Thus, the most common soil health strategies are difficult to implement. However, with Maine's abundance of trees, the integration of biochar can support a robust forestry industry integrated with a more diversified regenerative agriculture. Second, dairy systems in Maine can use biochar to reduce ammonia volatilization and methane emissions from livestock bedding. This process creates high-value biochar-manure amendments that will increase soil carbon and nutrients. Reduced odors, manure waste, and methane emissions, along with improved amendment application, could potentially reduce nitrate leaching as a result. Third, Maine farmers are struggling with polyfluoroalkyl substances (PFAS) contaminating soils from past biosolid applications. One way to address this concern may be to scale up usage and technical knowledge of biochar production, using pyrolysis as a PFAS destruction method. Additionally, growing high biomass perennial crops on contaminated soils, harvesting the above ground biomass, and pyrolyzing biomass may present a remediation pathway. We will leverage the

University of Maine's current on-farm and greenhouse projects to explore plant and soil characteristics affecting plant uptake as a mitigation strategy.

PFAS contaminated sites and their phytoremediation may be explored in partnership with Dr. Ellen Mallory and other researchers at the University of Maine.

Questions? Contact State Lead:



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