

SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

South Central Region

Lower Rio Grande Plain

Robstown, Texas, Major Land Resource Area (MLRA) Soil Survey Office (SSO) Assists AgriLife Researchers

Purpose

On Tuesday, October 3, 2023, Gary Harris, MLRA soil survey leader of Robstown, Texas, assisted Texas A&M AgriLife researchers in sampling soils at 18 locations for a project in Weslaco, Texas, titled “Biomass from Warm-Season Perennial Grass Feedstock System with Positive Water and Carbon Footprint.” Six pedons were sampled for bulk density, while twelve pedons were sampled for carbon analysis, all on the Raymondville soil series. This cooperative sampling assists both agencies in furthering the crop and soil sciences, allowing collaborative efforts now and in the future.

Background

Dr. Mahendra Bhandari, a crop physiologist with Texas A&M AgriLife, requested Gary Harris’ assistance sampling soils for his project titled “Biomass from Warm-Season Perennial Grass Feedstock System with Positive Water and Carbon Footprint.” This project is in Weslaco, Texas. Attending Gary at the sampling were Texas A&M University-Copos Christi (TAMUCC) doctorate student, Benjamin Ghansah, Dr. Ittipon Khuimphukhieo, Dr. Jorge da Silva with Texas A&M AgriLife Weslaco, Dr. Mahendra Bhandari with Texas A&M AgriLife Corpus Christi, Dr. Jamie Foster with Texas A&M AgriLife Beeville, senior research associate Texas A&M AgriLife Corpus Christi Jose Landivar Scott, and TAMUCC student Lei Zhao. This sampling was to collect baseline data for carbon and bulk density from a cropped field of perennial grasses, both irrigated and non-irrigated. Looking at different species of perennial grasses under both irrigated and non-irrigated conditions to achieve increased soil carbon while producing feedstock with the least amount of water input for irrigation. Past projects in the past have been completed with cooperation with Texas A&M AgriLife with both Dr. Jorge da Silva and Dr. Jamie Foster at both the Corpus Christi and Weslaco locations. Raymondville soil series, when cropped is typically used to grow crops such as cotton,



grain sorghum, sugar cane, and forage crops, both irrigated and non-irrigated, making the soil an important part of agriculture in the Lower Rio Grande Plain.

Key Outcomes

A successful sampling of 18 Raymondville soil profiles in the project area. Partnerships with local AgriLife researchers were reaffirmed and furthered through this. NRCS gained access to researchers' projects and how they relate to the management and uses of the soils in the Lower Rio Grande Valley. Texas A&M AgriLife received a successful sampling with an experienced local soil scientist and saw how the truck-mounted bull probe worked. Texas A&M AgriLife does not have a soil scientist on staff in south Texas, relying on Gary, Mahendra, and all in attendance. We look forward to future collaborative efforts in south Texas.



Figure 1.—Dr. Mahendra Bhandari mapping out soil sample locations.



Figure 2—From right to left: Benjamin Ghansah, Gary Harris, Jorge da Silva, Mahendra Bhandari, Jamie Foster, Ittipon Khuimphukhiew, Jose Landivar Scott, Lei Zhao. Photo by Texas A&M AgriLife.



Figure 3—From right to left. Dr. Jorge A. da Silva, Dr. Jamie Foster, and Dr. Benjamin Ghansah sampling soils.