Research Description and Minimum Data Set

Research Description

Fertilizer Tonnage Fees provide funding for the Arkansas Department of Agriculture and the University of Arkansas System Division of Agriculture. The University of Arkansas System Division of Agriculture offers free routine soil testing services and funds research that has objectives aimed at improving nutrient management. Nutrient management encompasses many researchable topics. Research projects are required to have a nutrient management focus and be relevant to issues in Arkansas in both urban and rural landscapes. Research topics that advance our knowledge of soil testing services, nutrient availability (soil, manure, fertilizer, or other by-products), crop nutrient uptake efficiency, and nutrient losses are examples of appropriate topics.

Principle investigators of funded projects are encouraged to use the soil-testing program symbol to acknowledge the funding source in presentations and research plot signs.

Minimum Data Set

Funded research projects are requested to adhere to Minimum Data Set (MDS) guidelines in preparing and reporting trial results in the Wayne E. Sabbe Arkansas Research Series that enhance the current and future use of the collected data. National guidelines defining the recommended and required MDS are currently in development by multiple institutions that include land grant universities, the USDA, and several private entities (Lyons et al., 2020; https://acsess.onlinelibrary.wiley.com/doi/full/10.1002/ael2.20008). The MDS consists of metadata and data reporting guidelines. A brief description of the MDS guidelines is provided below. The MDS guidelines will be updated as information becomes available.

1. Production system description that provides information on geographic location, crop, previous crop, tillage, row spacing, plant population, irrigation, weather, and pest management.
2. Soil properties with emphasis on soil sampling protocols (number of composite samples, cores per composite, sample area, sample depth, etc…), analytical methods and references, and reporting routine soil property means and standard errors for a suite of soil test information.
3. Plant response information and statistics: metadata that includes plot size, harvest methods, reported moisture content, complete statistical analysis information and reporting the individual treatment means and standard error of the mean.
4. Project leaders are encouraged to publish their plot-level data in appropriate depositories as a means of preserving the raw data for future use in meta-analysis projects(e.g., https://data.nal.usda.gov/ & https://data.nal.usda.gov/dataset/comparison-four-extractants-used-soil-phosphorus-and-potassium-testing-two-soils-corn-wheat-soybean-rotation-tennessee-receiving-various-amounts-p-and-k-fertilizer).