

Fate and Transport of Phosphorus Fertilizer and Pesticides in a Northern Nigerian Soil

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My summer 2013 travel grant was for the purpose of collecting soils samples for areas where cowpea, sorghum and millet are grown in Northern Nigeria. Initially, I planned to cover ten states in Northern Nigeria, but due to political unrest, my supervisory committee decided I should select an area that is important in production of these crops from any accessible states and do more intensive work. It was in this light that I chose to select Tulluwa, an area in Sokoto State. Before proceeding for the sampling, a permit for importing soil samples into the U.S. was obtained from the United States Department of Agriculture (USDA) by my major advisor. The main purpose of the research was to collect soil samples from an important producing area of the aforementioned crops and use the samples to assess the fertility status of the soils as well study as the fate and transport of fertilizers and pesticides used during the production of these crops.

Obtaining permission was facilitated by Usmanu Danfodiyo University. Soon after receiving the request, and upon learning that the samples were going to be shipped to the University of Florida for analysis, the District Head of the village was very excited - so much so that

he assisted in organizing labor for the work which facilitated and eased the entire exercise.

Sampling was done by digging five soil profile pits in each of the previously identified sampling units (making a total of 15 soil profiles), describing them in the field, collecting relevant soil samples from each soil horizon in each soil profile (using standard criteria) and storing them for onward shipment to UF. Sites for digging the pits were selected randomly within a soil unit, while maintaining a distance of at least 300m between profile pits. Samples were also collected from surface soils (0-15cm and 15-30cm) around each profile pit (total of 12 samples per pit area and 60 per soil unit). The samples will be used to study

pesticide degradation in the laboratory at UF.

All samples collected were packed using the minimum guidelines contained in the USDA permit before delivering to the shipping company for onward shipment to the University of Florida.

Nasiru Danmowa is a PhD student in the Department of Soil and Water Sciences. Funding for this project is from the UF Office of Research and the Center for African Studies.

