



FUTA NEWS

HOW TO KEEP THE SOIL FERTILE FOR BETTER FOOD PRODUCTION – FUTA DON

To further enhance food production in the country, a professor of soil fertility at the Federal University of Technology, Akure has advocated for efficient soil fertility management to reduce the loss of nutrients in the soil available for agricultural yield and productivity. Francis Adekayode stated this while delivering the 91st inaugural lecture of the institution. Speaking on the topic: Digital soil fertility mapping: A paradigm shift in soil fertility studies, Professor Adekayode said farmland that is cropped continuously over time may not continue to produce satisfactory crop yield as a result of degradation in soil quality which can be corrected mainly through appropriate tillage systems, fertilizer application and irrigation and thorough soil investigation and mapping.

He defined soil fertility as the ability of the soil to produce all essential plant nutrients in available forms and in a suitable balance needed by plants for their growth and reproduction adding that the major factors influencing soil fertility are, exploitable depth of the soil, soil texture and structure, water draining ability of the soil, soil PH, content of organic matter, active soil life and soil nutrient capability. Making a case for digital soil studies as an effective means of determining and maintaining soil fertility, Adekayode said geo spatial technology has greatly helped towards enhancing and accomplishing the millennium development goals in Africa. He said digital soil mapping enables identification about thematic maps of different soil properties such as soil suitability for mechanised farming, soil drainage, soil texture and soil ecological zones in a given area.

Professor Adekayode stated that digital soil mapping facilitates the creation of data and visual aid to provide insight for soil attributes in a given geographical area. The data produced can thus be highly useful to agricultural policy makers for states, universities and other research centres, non-governmental organisations involved in farming and even the local farmers looking for the best methods to plant their crops.

The lecturer said conventional methods of soil survey are too cumbersome and expensive and soil mapping which can save time and resources is achievable only with digital soil mapping which has become a useful and irreplaceable procedure to tackle various environmental issues related to soil; such as soil degradation, resulting from inappropriate land use. Adekayode however highlighted the common challenges against the full acceptance and application of remote sensing technology by most developing countries especially in Africa and Nigeria specifically to include lack of understanding of the role of space science and technology in the development process, shortage of trained man power, financial problems that relate to remote sensing data acquisition and inadequate hardware and software facilities for image processing. The lecturer reiterated the need to encourage and promote more indigenous technology, industries and firms particularly on remote sensing and GIS method development which will emphasize the need to strengthen the research capabilities of educational institutions and research centres and agencies in Nigeria.

Citing the satisfactory role played by the Federal University of Technology, Akure representing Nigeria in the design, development and operation of the cube sat recently launched into the orbit with other participating countries of Ghana, Mongolia, Bangladesh and Japan, the Don expressed optimism for a bright future for remote sensing and GIS business in Nigeria. He advocated for greater funding of research laboratories and libraries in various educational institutions and for the training and re-training of staff in the application of space technology in soils and allied agricultural disciplines. Professor Adekayode said

that in order to sustain high crop productivity, physical and chemical qualities of soil, standard well equipped laboratories for soil testing should be set up and manned by adequately trained personnel. He called for the enforcement of quality control of fertilizer by statutory government agencies. This according to him will make fertilizer recommendations to be based on soil testing to prevent over fertilization which will limit the emission of greenhouses gases also adding that combined use of both organic and inorganic fertilizers should be encouraged to minimize soil degradation. He said since excessive tillage and burning of crop residues lead to higher CO₂ emissions into the atmosphere to cause global climate change, the intensity of tillage should be reduced in order to minimise soil carbon loss. Adekayode postulated that the use of geospatial technology will address among others the creation of digital soil resources database and the development of soil information systems that will form an important aspect of storage and dissemination of digital soil data to the end users. In his address, Chairman of the occasion and Vice Chancellor, Professor Joseph Fuwape appreciated the excellent delivery of the lecture. He described the lecturer as an astute scholar and a prolific researcher who had contributed to the development of the university in various academic and administrative capacities.