How to Set Up and Use a GPS-Based GIS for Increased Efficiency of Agricultural Research Station Management. (A07-harris145819-Poster)

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Abstract:

A global positioning system (GPS)-based geographic information system (GIS) has been successfully implemented for management of the Arlington Agricultural Research Station (ARS), and there is interest in applying it to other stations. The Rhinelander ARS was used to document a step-by-step process for efficiently setting up a GPS-based GIS, providing a guide of what to do and what not to do. Spatial data are maintained in ArcView GIS and field records in Microsoft Access. GPS data are collected using ArcPad 6.0 software in the Wisconsin Transverse Mercator (WTM) coordinate system. An Avenue script customizing ArcView for ARS purposes is used to edit and update field boundaries, join tables in MS Access and ArcView, and compose and print maps. Data in non-WTM coordinates can be projected to WTM and added to ArcView project files. The GPS-based GIS is a valuable tool for creating a spatially referenced primary field boundaries map, calculating field acreage, tracking annual changes in subfield boundaries and crop rotations, and organizing information about field management and conditions for decisions on integrated agricultural production and water quality protection.

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