

a desirable feature, certain considerations are needed. The format that data are recorded and exported in varies among PA equipment so it is important to ensure that the data can be downloaded in a format that will be accessible by the user. For example, if an Agricultural Geographic Information System (AgGIS) is not used for data management, then a PA system that can export data as a Portable Document Format (.pdf) or Rich Text Format (.rtf) file would be desirable to allow the user the option of viewing collected data.

It is very important to consider both current and future needs for the farming operation and the role that PA technologies can play. Developing long-term PA implementation plans can help with purchasing decisions. Collected data should always be kept even if it is not currently being utilized in the farm management program. Elevation data collected using an RTK system and yield data are examples of data that can be collected and then used in the future to create management zones or prescription maps for variable rate applications.

Finally, potential users of PA technologies need to be aware of the time requirement for adoption of PA systems and determine a timeline for implementation. There is a learning curve associated with PA technology and installations can often take longer than anticipated. In addition, even the most “operator-friendly” tool will require an adjustment period. An adoption and implementation timeline might need to extend over a few growing seasons, not just to work out the kinks and get comfortable with the new tools, but to fully establish the system needed to obtain the desired results. Successful adoption of PA technologies will in many cases be more of an evolving process rather than a quick-fix that will show immediate results. The associated learning curves for PA adoption

make it important to identify the training, support, and service tools that are available for new products during the selection process. Most experienced PA users agree that service for PA equipment is one of the most important things to consider when making a new purchase.

Overall, there is no right or wrong approach to adopting and implementing PA technology. Potential users of PA should be encouraged to conduct on-farm studies to evaluate which PA practices will provide the best return for their operation. While PA technologies and practices can appear overwhelming at first, it is important to remind newcomers to take the process slow and in steps. Guidance systems and ASC provide quick, tangible benefits to farmers while other technologies and site-specific management approaches can provide benefits, but should be evaluated over several years. It can take time for practitioners to fully start to experience savings or increased profit from precision agriculture, especially precision-based nutrient management practices. **BG**

For more on precision agriculture technologies, visit the Alabama Precision Ag website: www.AlabamaPrecisionAgOnline.com.

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Reference

Troesch, A., D.K. Mullenix, J.P. Fulton, A.T. Winstead, and S.H. Norwood. 2010. Economic analysis of auto-swath control for Alabama crop production. In Proceedings of the 10th International Conference on Precision Agriculture, Denver, CO, July, 23-25

IPNI Introduces NuGIS – A New Tool for Evaluation of Nutrient Use and Balance in the U.S.

IPNI has unveiled a new publication titled *A Preliminary Nutrient Use Geographic Information System (NuGIS) for the U.S.*, along with an interactive on-line interface.

“For the past couple of years, IPNI scientific staff and other cooperators have been working on a rigorous GIS-based model for assessing nutrient balance and balance trends in the U.S., termed ‘NuGIS’. This project is part of our responsibility for understanding the nutrient status of cropping systems and as a complement to our periodic inventorying of soil fertility levels in the U.S.,” said IPNI President Dr. Terry Roberts.

By integrating multiple data layers to create county-level estimates of nutrient removal by crops, fertilizer applied, and manure nutrients, NuGIS offers a rather clear picture of nutrient balance for most of the contiguous 48 states, as well as temporal trends over the last 20 years. Geospatial techniques are used to migrate the county data to watersheds which allows NuGIS output to be compared to the output of other natural resource models.

“IPNI sees on-going assessment of nutrient balance and nutrient use efficiency in crop production as one of its responsibilities. That assessment is one of the two primary objectives of NuGIS. The other objective is to identify weaknesses in the process of doing that assessment,” explains Dr. Paul Fixen, IPNI Senior Vice President and Director of Research. He has

been the leader of the NuGIS effort.

“An extensive in-depth methods section is provided in the bulletin to offer complete transparency into how the balance estimates are made and displayed. Results are shown in a combination of color maps, tables, and graphs, summarized in a 60-page publication and available on CD. The CD also contains a PowerPoint file of figures and an Excel workbook containing all balance component data at a state level. Interpretation of the results is rather limited.

A Preliminary Nutrient Use Geographic Information System (NuGIS) for the U.S., the 60-page, 8 ½ x 11 in. booklet, is available for purchase at USD 25.00 per copy, plus shipping/handling. An order form with more information plus a PDF of the complete publication are available for download at the IPNI website: www.ipni.net/nugis. Visitors to the website may also access the interactive on-line tool. Comments, suggestions, or questions may be sent by e-mail to: nugis@ipni.net.

