Nutrient Expert® – Going Global with Improved Fertilizer Recommendations

Addressing the challenge of making science-based fertilizer recommendations to smallholder farmers throughout Asia and Africa has been a key focus of IPNI staff over the decades. As students of agriculture, we all learned about soil testing methods, correlation and interpretation as the key step in this process. However, this entire approach has not been successful on smallholder farms due to access, cost or inadequate timeliness in delivery of results. As a result, some alternative had to be found to address this problem for smallholder farmers in Asia and Africa.

The development of the decision support software Nutrient Expert® by IPNI staff came about to address the growing need for science-based fertilizer recommendations for smallholder farmers in Asia and Africa. After almost 8 years of development, verification and application of the software, we have grown in both confidence and understanding of how successful this tool will be in helping meet the needs of small farmers. With software now available for downloading from the web (http://software.ipni.net), IPNI is providing a free-of-charge option for making nutrient recommendations for wheat and maize production in Asia. A maize tool for sub-Saharan Africa is close to release, and a wheat tool for North Africa is in development, as are soybean tools for Asia and a cotton tool in South Asia. Work has recently started to develop a tool for cassava in SE Asia and links to cassava work by IPNI partners in central Africa are planned.

In the course of research and extension program development in IPNI, one of the key questions always being asked is, can this technology or practice be taken to scale? Where might it be applicable within other agricultural systems and IPNI regions of the world? With the success of the Nutrient Expert® program, getting other staff and programs interested in adapting the tool to their regions was relatively easy – success was our best-selling tool. However, how would such a tool be moved to a more open, public scale allowing the access and use by others?

Having the Nutrient Expert® tools available for downloading from the web is one way of providing open access to all interested parties. Currently we are developing versions that use databases on the web, allowing the tool to be run as a web-based version and enabling easy updating of the available tools. We are also investigating the options for moving the Nutrient Expert® tool to a ICT platform, where agriculture extension and industry workers would be able to access and use the software with a tablet in the farmers field. All of these improvements are being developed in cooperation with the IT industry, where the expertise to succeed in delivery of the technology exists. Finally, IPNI also has to decide when, and if, they are going to release the programming code for

Nutrient Expert® to the public. As with all crop production support models, it is likely an improved version is out there once our current technology gets into the hands of others with additional ideas to pursue the continuous improvement we would like to see.

IPNI SEAP is investigating the possibility of developing a Nutrient Expert® for Cassava that will support sustainable intensification with 4R Nutrient Stewardship consistent fertilizer recommendations