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## MOBILE DEVICE TECHNOLOGY IS LEADING THE WAY TOWARD “SMART” FARMING

**For the second year in a row, smart devices lead the way in the annual PrecisionAg.com Tech Top Five survey.** There are many reasons why the use of mobile device technologies (smart phones, tablets, etc.) in agriculture is growing rapidly. The most obvious reason is that most people already have one. Anytime a tool that users are already familiar with can be used to enhance farm management, adoption will be rapid. Other reasons include the ease of telemetry and data transfer and the fact that internet connectivity is improving rapidly in rural areas, which was an issue for agricultural use a few years ago.

**Another driver for adoption is the recent explosion in agricultural applications (apps) for mobile devices.** Some of the apps are downloadable and some are Internet browser-based, but all of them make it possible for users to have access to more information than ever before. In the PrecisionAg.com article, Jeremy Wilson, technology specialist for Crop IMS, said the “development of these [agricultural] apps will allow a service provider to bring new value to growers in ways not even considered just a couple of years ago.”

**Dr. Brian Arnall, precision ag extension specialist at Oklahoma State University, gave an extensive overview and workshop on agricultural apps at InfoAg 2013.** Dr. Arnall has reviewed approximately 85 apps over the past year and demonstrated several features of some that he found to be most useful for agricultural practitioners. He also identified a few basic ways that various apps can be categorized, including news, weather, and market updates, identification tools, simple calculators, scouting tools, and input selection calculators.

**Among the identification tools, Dr. Arnall found one of the most comprehensive to be the IPNI Crop Nutrient Deficiency app.** The IPNI app includes a range of nutrient deficiency photos for 14 prominent crops. Text and diagrammatic descriptions are also provided. Another very useful tool in the i.d. category is ID Weeds, developed by Dr. Kevin Bradley at the University of Missouri. ID Weeds lets the user select the weed from an image database or by progressing through a series of morphological queries via a user-friendly drop-down menu.

**Simple calculator apps can be used to estimate growing degree days, nutrient removal in harvested crops, harvest loss, and plant populations.** IPNI has recently developed a web-based nutrient removal app available in six languages and English or metric units. The app includes N, P, K, and S removal for 60+ crops at a user-defined yield level, with plans to expand to over 90 crops and other nutrients. The IPNI nutrient removal app can be viewed at <http://ipni.info/calculator>.

**Scouting tools are comprehensive field-guide apps that place a wealth of information in the hands of growers and crop advisors.** One of the best scouting apps, according to Dr. Arnall is the Corn Advisor app developed at the University of Arkansas. Corn Advisor includes nutrient, disease, and pest i.d. image databases, lime and nutrient rate calculators, and the complete UA Corn Production Handbook.

**To view Dr. Arnall's complete review of agricultural apps, visit his blog at <http://OSUNPK.com>.** Also, make plans to attend the next InfoAg July 29 – July 31 at the Union Station Hilton in downtown St. Louis, MO. Featured topics will include the latest trends in mobile device technology, variable-rate seeding and fertilization, zone management, robotics, UAVs in agriculture and many others. Stay informed by visiting [www.infoag.org](http://www.infoag.org) and following @InfoAg.

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For more information, contact Dr. Steve Phillips, Southeast Director, Phone (256) 529-9932. E-mail: [sphillips@ipni.net](mailto:sphillips@ipni.net).

Abbreviations: N = nitrogen; P = phosphorus; K = potassium; S = sulfur.

Note: *Plant Nutrition TODAY* articles are available online at the IPNI website: [www.ipni.net/pnt](http://www.ipni.net/pnt)