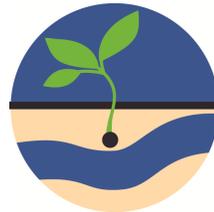
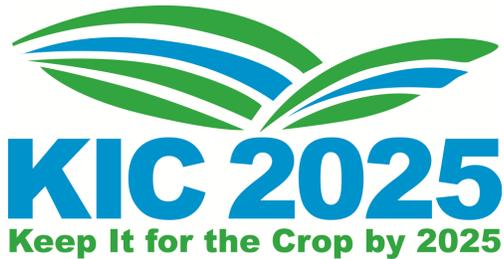




# KIC Progress Report June 2014



## C-BMP

Illinois Council on Best  
Management Practices

This report highlights progress during from March 2014 through May 2014. In this edition:

**Rapid Adoption of Nitrogen Management Systems**

**KIC and NREC's role in The Illinois Nutrient Loss Reduction Strategy**

**N-WATCH Tells Story on Nitrate Conversion—A Comparison of Spring 2013 vs Spring 2014**

**Two Illinois Farmers and Their Ag Retailers Recognized Nationally as 4R Advocates**

**Industry Partners Donate to Help the KIC Program**

**Lake Springfield Project Update**

### **Industry Rapidly Adopting N Management Systems**

The KIC program works with ag retailers to promote managing nitrogen in a systematic approach instead of viewing it as just an application. When explaining the thought process to ag retailers and farmers, we compare it to another important aspect of agriculture profitability: marketing grain. We can't predict when the price of corn will reach its peak, so we market corn over time to hedge their risk. The same logic holds true with nitrogen management.

We don't know what the weather is going to do, so why not take your nitrogen budget (i.e. maximum return to nitrogen rate) and

make multiple nitrogen applications over time to reduce the risk of any single weather event causing excessive loss?

It's not about how much N is applied, it's about making sure the N is there when the plant needs it most. Rapid adoption of multiple N applications is becoming apparent in the fertilizer industry; sales of post-application nitrogen equipment (as seen in the picture) are up nearly 300% since 2009 according to Illinois equipment suppliers.

Managing nitrogen is also a profitable enterprise, or farmers would not be doing it.

The adage that farmers can "save money" by managing fertilizer more effectively is not really true; applying nitrogen up to three times instead of once actually costs farmers more upfront; the equipment costs are higher as are different sources of N, then add stabilizers, and it's certainly more expensive than a single application. But farmers are seeing a positive yield response and these increased yields give farmers the opportunity to market additional bushels which means more income. **This all adds to a farmer's profitability and demonstrates that listening to MOM pays off: Minimize Environmental Impact, Optimize Harvest Yield and Maximize Nutrient Utilization.**



Farmers near Villa Grove post-apply nitrogen to corn; this was the 3rd application of their nitrogen budget.



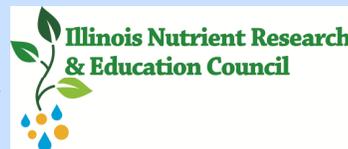
## 4R Efforts Key to Illinois' Nutrient Loss Reduction Strategy

*By Jean Payne, President, Illinois Fertilizer & Chemical Association*

For the past year, the Illinois EPA has been leading a multi-stakeholder effort to devise a comprehensive strategy to reduce nutrient losses to Illinois river, lakes and streams as well as reduce Illinois' contributions to the hypoxia zone in the Gulf of Mexico. This effort will soon result in a document, submitted to USEPA, that extensively outlines the water quality challenges in Illinois and critical steps to be taken to reduce nutrient losses.

To succeed in reducing nutrient losses, it will take a commitment from point sources and non-point sources. While point sources are regulated by permits, non-point sources such as the agriculture industry have the opportunity to demonstrate in a non-regulatory framework that we are serious about reducing nutrient losses and keeping our nutrients for the crop. This is a tremendous opportunity and I am very optimistic that we can improve agriculture and water quality by utilizing the 4Rs of nutrient stewardship: Right Source, Right Rate, Right Time, Right Place. We are fortunate in Illinois to have a structure in place to meet the challenges outlined in the strategy document and reduce our losses of both nitrogen and phosphorus to water.

**NREC's Role:** The Illinois Nutrient Research & Education Council (NREC) continues to support outreach programs such as KIC, but it is also making serious investments in fundamental research at our Illinois universities to determine the type of nutrient management activities can reduce nutrient losses in a quantifiable way over time. NREC is expending \$2.55 million on a host of scientific research projects and corresponding outreach programs to ensure these studies reach thousands of Illinois farmers who are contributing 75 cents to NREC for every ton of fertilizer they purchase. NREC recently published its 2013 Annual Report and has an ambitious slate of 2014 projects. Go to [www.illinoisnrec.org](http://www.illinoisnrec.org) to see for yourself how Illinois agriculture is strategically soliciting, selecting, funding and implementing projects to reduce nutrient losses in the ag sector.



**KIC's Outreach Role:** Although ag research has been on-going for years, many of us feel that the dissemination and application of what is learned through research has often been the weak link in the system. To help remedy this, Dan Schaefer, KIC's Director of Nutrient Stewardship, is taking a hands on role and working directly with researchers to help provide guidance on the types of agronomic practices that ag retailers and farmers are capable of, can easily adopt in the field, and result in improved farm profitability.

The fertilizer industry has always had a very strong tie to our UI land grant ag extension program and the relationship and commitment between UI extension and the KIC program is stronger than ever. Dr. Emerson Nafziger reviews all KIC on-farm protocols for N rate trials. **There are 29 farmers participating in N Rate Trials this year with 31 total trials underway; 11 farmers are in their 2nd year of trials and this is the 3rd year for 4 of our participating farmers.** Dr. Nafziger works with Dan to evaluate the field results, and this information feeds the MRTN calculator to keep it current and relevant. Dr. Nafziger also shares information from the KIC program in UI published bulletins. KIC has hosted several webinars to provide new information directly to certified crop advisors and ag retailers, who earn continued education credits for participating. The webinars fill to capacity with over 200 ag retailers and crop advisors participating each time, demonstrating that our industry is always striving to improve. Several of these webinars remain posted on the CBMP website at [www.illinoiscbmp.org](http://www.illinoiscbmp.org).





## Soil Nitrates: A Comparison of 2013 and 2014

Weather and nitrogen management are inexplicably linked. Ask a certified crop adviser the best way to keep nitrogen for the crop, and their answer will be: *“Sure, just tell me when it’s going to rain, and how much and I’ll tell you when to best apply N.”* Armed with only a weather forecast, we haven’t had much information to help improve nitrogen management. Managing nitrogen was mostly focused on the application itself—we didn’t think about the “system” as we do now. We have learned that it is not only about nitrogen needs of the crop but it is also about making sure the N is there when the plant needs it and to manage any residual nitrogen after harvest. It is about maximizing utilization, optimizing yield, and minimizing environmental impact by managing nitrogen as a system rather than an application. It is about tracking plant-available nitrogen in the soil over time and inventorying what is left after the crop is finished. It is all about N-WATCH.

N-WATCH is a management tool that provides a way to estimate plant-available nitrogen at a specific field location over time. It is not a recommendation system, telling a farmer what to apply. It is a tool that provides a new layer of information to consider when creating or modifying Nitrogen Management Systems to fit individual farming operations, the behavior of soil nitrate and ammonium-N over time. Simply put, N-WATCH provides a way to Inventory, Track, and Verify plant-available nitrogen.

The drought of 2012 left a significant amount of unused nitrate-N in the upper soil profile. At over 300 sites N-WATCH estimated this substantial residual N remaining in the upper foot of the soil profile. With anticipated “normal” moisture between harvest and the spring planting season, it was anticipated that there would be an unprecedented loading of residual nitrates into surface waters from subsurface drainage and unfortunately that is what happened. N-WATCH did, however, allow us to give some water treatment officials a “head’s up” in February 2013 so they could prepare for high nitrates and manage it to the best of their ability, which they did in commendable fashion. N-WATCH also provided the inspiration needed to create a unique watershed program focused on minimizing nitrate loading into surface water while optimizing harvest yields.

Going in to fall 2013, N-WATCH showed us that there was little residual N in the soil profile following harvest, much different from what we learned the fall of 2012 with N-WATCH (high soil residual nitrate-N). It allowed us a way to estimate how much fall-applied N remained in the stable ammonium-N form where a nitrogen stabilizer was included. It was not uncommon to find 50 to 70% of the detected fall-applied N still in the ammonium-N up to the latter part of April.

But N-WATCH doesn’t just track fall applied nitrogen, we are also using this tool to teach us about nitrogen applied in the spring, and its presence and movement in the soil profile as the crop grows. The KIC program continues to use N-WATCH to educate ag retailers and farmers about what is going on in their individual fields, and as a tool to better manage residual N after harvest. NREC provides funds to pay for the N-WATCH sampling costs so that we can ensure widespread use of the nitrogen education tool.

**There are 210 N-WATCH sites in the KIC program this year.**

## The Fertilizer Institute Honors Illinois 4R Advocates

In February 2014, the Fertilizer Institute (TFI) honored six farmers and their ag retailers for their commitment to the 4Rs in their farming operations. Two of these six farmers are from Illinois! The 4R advocate award is a national competition and the application process is detailed and extensive.

Receiving the award from TFI President Chris Jahn, John Werries (top photo) is from Chapin, IL. He utilizes strip till, four split nitrogen applications and cover crops on his mostly continuous corn operation in Morgan County, IL. John’s ag retail partner in this effort is Vern “Tinker” Bader of Bader Ag Services in Meredosia, IL.

Chris Van Holton (bottom photo) of Walnut, IL also manages his nitrogen as a system, uses new technologies for phosphorus applications and incorporates conservation tillage to maintain residue and keep his soils productive. Chris works closely with crop advisor Malcolm Stambaugh of Ag View FS in Walnut, IL to determine the most effective nutrient management practices for his farm. **You guys make us proud!**



# KIC Has Many Friends & Supporters

*By Dan Schaefer, KIC Director of Nutrient Stewardship*



I worked in the retail fertilizer for 30+ years prior to taking on my current role, and during that time I relied upon many suppliers and equipment companies to ensure I could continually offer my farmer-customers the best products, service and agronomic advice. The relationships within the ag input supply sector run deep, and here in Illinois, the industry has stepped up in a big way to support the Keep it for the Crop Program. Ag retailers in particular are putting in a lot of time and effort to assist me, and I want to thank the companies below for donating products, equipment and expertise to help ensure that the KIC program has what it needs to succeed with our message of MOM.

- John Deere:** Reimbursed KIC for annual tractor lease, donated a small fertilizer spreader and an ammonia tool bar (see tractor and tool bar, right)
- Koch Nitrogen:** Donated Super U (nitrogen stabilizer) for N rate trials.
- Agrium:** Donated Duration 120 and ESN (enhanced fertilizer products).
- Dow Agrosciences:** Provided \$40,000 in stabilizer injector equipment for N rate trials.
- GROWMARK:** Donated many hours of Dr. Howard Brown’s time to review N-WATCH results, he served as the host of KIC webinars, and they donated a Trimble GPS unit and hand-held Greenseeker crop sensor unit.
- Brandt Consolidated:** Pam Gaines from Brandt spent many hours assisting SSI Software in the testing of the KIC Advance reporting system.
- Crop Production Srv:** Donated a very nice used heavy duty pickup to IFCA for use in the KIC program.
- Illini FS:** Provides storage space for KIC equipment when not being utilized in the field.



There is a very positive energy among the fertilizer industry, and between ag retailers and their farmer customers as we work collectively to learn more about nutrient utilization and turn that knowledge into better profitability for agriculture and better water quality for all.

## Lake Springfield Water Quality Project—Update

This project is funded by a grant from the National Fish & Wildlife Foundation (NFWF) and Springfield City, Water Light & Power (CWL) is also a financial contributor. Support for this project is been community-wide and includes the local watershed group, the Sangamon County SWCD, farmers and ag retailers. CBMP helped to organize two outreach meetings in the watershed—the first had 115 participants (many of them farmers) and 59 attended the second meeting. There is a very positive energy surrounding this program as the partners work together to improve water quality in Lake Springfield.



Jason Solberg takes a stream sample in the Lake Springfield Watershed in early spring (but looks like winter, doesn't it?)

The KIC program has established 20+ N-WATCH sites in the watershed as well as N-Rate trials. The project uses automatic gauges to track rainfall at various places in the watershed, and the project team is conducting stream water quality sampling. We are testing nitrate levels and looking for patterns that can help further our understanding of many factors that influence the potential for nitrate losses including land activities, types and timings of fertilizer application, rainfall and crop growth. Cover crops are also a component of the project and we are refining and developing educational tools for more effective cover crop management. NFWF is funding a special Cover Crop Initiative in order to source and train more instructors to provide substantial education to interested farmers on effectively establishing and managing cover crops.