



**HEALTHY SOIL.  
CLEAN WATER.  
VIABLE FARMS.**



**INDIANA  
AGRICULTURE  
NUTRIENT ALLIANCE**

## A PLAN FOR SUCCESS

The Indiana Agriculture Nutrient Alliance (IANA) is dedicated to keeping Indiana at the forefront of proactive nutrient management and soil health practices that improve farm viability and, ultimately, reduce nutrient loss to water.

Indiana farmers are on the frontline, doing their part to improve water quality by managing their fertilizer and manure more efficiently and increasing soil health practices to protect their nutrient investments. IANA brings together private and public partners to support the initiatives and efforts that accomplish these actions.

## THROUGH SHARED GOALS

Common-sense goals that move Indiana forward toward mutually beneficial outcomes have been set through a multi-partner, ag-focused effort. Establishing goals is critical to set a strong path toward success.

As no two farms are alike, each goal is adaptive, allowing each farmer to adopt practice changes that match their operation. To manage nutrients — all of agriculture must work together by deliberately creating a PLAN to thoughtfully APPLY nutrients and ultimately PROTECT our livelihoods and the soil and waters of Indiana.

# GOALS FOR INDIANA FARMERS BY 2025



**To encourage Indiana farmers to achieve statewide practice adoption goals, IANA will provide collaboration, education and research opportunities and information.**

## SHARED GOAL: MANAGING NUTRIENTS

# 1 PLAN

There are many ways you can develop a plan for fertilizer and manure use on your farm. At the highest level, it is understanding current nutrients already within the soil, how to keep them there, and how to manage additional needed nutrients.

**GOAL:** 100% of farmers regularly perform soil sampling

A successful plan for nutrient management includes utilizing soil testing and implementing soil test results to apply only the necessary nutrients. Conducting regular soil tests for pH, phosphorus and potassium will determine the appropriate rate for lime, fertilizer and manure application. Recommended application rates are designed to maintain the lowest no-limiting nitrogen and phosphorus levels in the soil.

## PLANNING CONSIDERATIONS

- When developing a plan for nutrient management, it is important to remember the 4Rs.
- **4Rs – Right Source, Right Time, Right Rate, Right Place\***

### Right Source

Match fertilizer **type** to crop needs

### Right Rate

Match **amount** of fertilizer type to crop needs

### Right Time

Make nutrients available **when** crops need them

### Right Place

Keep nutrients **where** crops need them

Contact an agronomist like a Certified Crop Adviser (CCA) to help you get started designing and executing your soil sampling program.

# GOAL: 100% of farmers implement plans for nutrient management

Creating a plan does not have to be onerous or complicated. Managing nutrients is both about understanding current nutrient loads and what will be necessary to get the most productive use out of land while mitigating runoff risk. Keeping nutrients in place not only benefits Indiana waters, it also helps to keep fertilizer investments in check.

## PLANNING CONSIDERATIONS

- State law requires that any nutrient application be based upon agronomic needs (OISC)
- Plans should rely on realistic crop yield goals and soil tests (OISC/IDEM)
- Plans credit the analyzed nutrient content of applied manure and other sources such as legume cover crops (OISC/IDEM)
- State law requires soil sampling a minimum of once every four years (OISC)
- Soil sampling plans can be based on grids or zones based on field variability (PU)
- Correct soil sampling procedures provide accurate results (PU)
- Soil sampling results should drive fertilizer and manure application decisions (OISC/IDEM)



Because we soil sample, we know what fields are best suited for application, and as a result, we can plan to move manure further from the barns. This lets us follow with less fertilizer in the future and we consistently see a yield bump in the next year's corn.

*- Randy Salsbery, Salsbery Farms, Tipton County*



## SHARED GOAL: MANAGING NUTRIENTS

# 2

# APPLY

Developing a plan is the first step, but how those nutrients are applied is critical. Improve your nutrient use efficiency by considering fertilizer and manure application timing and placement in addition to application rate and source. Timing applications of nutrients that can be lost to water or air, such as nitrogen, during planting or in the growing season, as well as avoiding manure applications on frozen or snow-covered ground improves your chances that nutrients will be available for crops when they are needed.

**GOAL:** 75% of Indiana farmers making nutrient applications at planting or in-season

Timing of application influences availability and potential movement of nutrients. Nitrogen (N) should be applied as close as possible to the period of crop uptake — minimizing loss of N from the field and ensuring adequate N is available to the crop during critical growth periods.

### APPLICATION CONSIDERATIONS

- Split nitrogen application to reduce input costs and prevent over-application
- Consider the form of nitrogen being applied and the risk of loss (Right Source)
- Use in-season diagnostic tools such as PSNTs, tissue sampling, aerial imagery or digital modeling tools to adjust split nitrogen applications
- Avoid fall application of N due to increased risk of loss, which may result in lower crop yields
- Pair manure applications with a living green cover to hold nutrients in soil

Working with a trusted adviser, like a CCA, can help develop a nutrient application plan.

# **GOAL:** 100% of Indiana farmers making frozen and snow covered ground applications only as a last resort



In current economic conditions with very tight margins, we can't always count on big yields to keep us profitable. We have to scrutinize everything — and the easiest dollar made is the dollar saved — so making sure that nutrient stays on the field and out of the watershed is important.

*- Brian Roemke, Roemke Farms, Allen County*



Application of fertilizer and manure on frozen, snow- or ice-covered ground should be avoided. Application on frozen or snow covered ground limits the nutrient value for next season crops and the ultimate value of the nutrients overall.

## **APPLICATION CONSIDERATIONS**

- Nutrients such as nitrogen and phosphorus applied on top of the ground are at greater risk of loss in these conditions
- Some sources, such as manure generated from Confined Feeding Operations, are already prohibited from frozen and snow-covered ground application
- The Office of the Indiana State Chemist requires cutting rate and application on flat soils and cutting application to 40% cover or crop residue for all other manure applications

Check with your local NRCS office for resources for additional manure storage capacity if manure movement is necessary during these conditions.

## SHARED GOAL: MANAGING NUTRIENTS

# 3 PROTECT

Even with a strong plan, extreme weather can move nutrients away from intended crop use through both soil and water. To protect fertilizer and manure investments, reducing tillage and increasing the use of living green covers over winter months can both reduce soil erosion, hold more nutrients on the field and improve the health of soils.

**GOAL:** 25% increase of Indiana cropland acres using reduced tillage systems

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**GOAL:** 10% increase of Indiana cropland acres using no-till or strip-till systems

Reducing passes, depth, speed and/or actions that disturb soil keeps nutrients in place for their intended use. Utilizing tillage methods like no-till and strip-till encourages nutrient retention.

### PROTECTING CONSIDERATIONS

- Avoid deep tillage to reduce soil erosion and preserve organic matter
- Reduced tillage can lower fuel use and labor costs

Keep in mind that incremental changes in tillage systems will likely require changes in equipment and management to fully implement. However, many resources are available to assist in creating an implementation plan. Talk with your agronomic advisor to understand more.



# **GOAL:** Increase living green cover acres to 40% of Indiana cropland

Adding additional living green cover through diversified crop rotation or using cover crops can build organic matter, protect against soil erosion, cycle and capture nutrients, reduce compaction, build overall soil health and make soils more resilient to weather extremes.

## **PROTECTING CONSIDERATIONS**

- Select the right crop species for the management practice being addressed (nutrient cycling, soil erosion, compaction, weed control, forage, etc.)
- Consider the species, time of year at planting and herbicides used that year when making crop selections
- Develop a plan for termination and for planting into heavier residue
- Anticipate incremental changes in time, management and equipment to fully implement
- Pair living green cover with fall manure and fertilizer applications to improve nutrient cycling and reduce loss to water and air

Look for technical assistance incorporating these practices from your Certified Crop Adviser, local SWCD or NRCS office. Cost share opportunities may be available through your local SWCD or NRCS office.

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We first began using no-till and a cereal rye cover on our farm for better erosion control. Over time, we have begun to see the added benefit of holding more soil and nutrients on our fields and how that has improved our yields.

- *Jeremy Morgan, MorGrain Farms, Rush County*

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# SETTING GOALS TO ACCOMPLISH MORE

Common-sense goals that move Indiana forward toward mutually beneficial outcomes have been set through a multi-partner, ag-focused effort. Establishing goals is critical to set a strong path toward success.

## Goals for Indiana farmers by 2025:

### Nutrient Management

Regularly perform soil sampling

**100%**

Implement plans for nutrient management

**100%**

### Soil Health

Increase green-living cover acres on Indiana cropland to

**40%**

Increase minimum tillage acres by

**25%**

Increase no-till and strip-till acres by

**10%**

### Application Timing

Apply nutrients to frozen or snow-covered ground as a last resort

**100%**

Apply nutrients to crops at-planting or post-emergence

**75%**

# IANA VISION

**Focused efforts for greater success** – To further the adoption and implementation of practices that optimize nutrient use efficiency and enhance soil health, IANA will focus on four main areas:

1

**Foundation:**  
**SHARED GOALS**

Establish goals for statewide practice adoption that encourage fertilizer and nutrient loss reductions

2

**Collaboration:**  
**SHARED OPPORTUNITIES**

Communicate IANA partnership organizations' efforts to strengthen synergies and maximize awareness, support and implementation of strategic objectives

3

**Education:**  
**SHARED INFORMATION**

Develop best management practice (BMP) educational materials for our farmers and stakeholders to encourage fertilizer and nutrient loss reductions

4

**Research:**  
**SHARED OUTCOMES**

Assist partners with pursuing collaborative nutrient-focused research, identifying synergies and compiling outcomes

## WHO CAN HELP?

- **Certified Crop Advisers** – [www.indianacca.org](http://www.indianacca.org)
- **Fertilizer Retailers** – [www.inagribiz.org](http://www.inagribiz.org)
- **Purdue Extension** – [www.extension.purdue.edu](http://www.extension.purdue.edu)
- **USDA NRCS** – [www.nrcs.usda.gov](http://www.nrcs.usda.gov)
- **SWCD** – [www.wordpress.iaswcd.org](http://www.wordpress.iaswcd.org)
- **ISDA** – [www.in.gov/isda](http://www.in.gov/isda)
- **Conservation Cropping Systems Initiative** – [www.CCSIN.org](http://www.CCSIN.org)

## WHO'S DONE IT BEFORE?

- **INfield Advantage** – [www.infieldadvantage.org](http://www.infieldadvantage.org)
- **Soil Health Partnership** – [www.soilhealthpartnership.org](http://www.soilhealthpartnership.org)

## AN ACRONYM KEY

- **OISC** – Office of the Indiana State Chemist
- **IDEM** – Indiana Department of Environmental Management
- **PU** – Purdue University, Department of Agronomy

# IANA PARTNERS

## Accomplishing it all together

Without partners from across the agriculture and non-agriculture space, a collaboration like the Indiana Agriculture Nutrient Alliance — a dedicated effort for the ultimate goal of improving the long-term viability of Hoosier farms and all of Indiana — would not be possible.

- Agribusiness Council of Indiana
- Indiana Farm Bureau
- USDA Natural Resources Conservation Service
- Indiana Soybean Alliance
- American Dairy Association of Indiana
- Indiana Association of SWCDs
- Indiana Beef Cattle Association
- Indiana Corn Marketing Council
- Indiana Dairy Producers
- Indiana Pork
- Indiana State Department of Agriculture
- Indiana State Poultry Association
- Purdue University College of Agriculture
- The Nature Conservancy of Indiana

## LEARN MORE ABOUT MAKING YOUR PLAN AT [INAGNUTRIENTS.ORG](http://INAGNUTRIENTS.ORG).

### Connect with IANA

**Ben Wicker**, Executive Director  
[bwicker@inagnutrients.org](mailto:bwicker@inagnutrients.org)

[www.inagnutrients.org](http://www.inagnutrients.org)

Indiana Agriculture Nutrient Alliance  
P.O. Box 1290 | Indianapolis, IN 46206



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