

April 24, 2019



The Digital Ag Download

An eNewsletter with research updates, digital ag news, and tech insights for your farm.

Special Report: Nitrogen Application

This special report will bring you the latest news and research related to Nitrogen Application. Check out the 2018 eFields Nitrogen studies and articles below to learn about the most recent research and information available on Nitrogen application! Be sure to share this newsletter with anyone who may be interested; we hope you enjoy! – The Ohio State Digital Ag Team

Digital Agriculture at OSU

CFAES

OHIO STATE UNIVERSITY EXTENSION

eFields

connecting science to fields

**Interested in improving
decision-making on your farm?**

*Partner with Ohio State University
Extension to use science to
optimize your operation.*



For more information:

Contact Dr. Elizabeth Hawkins at
hawkins.301@osu.edu or digitalag@osu.edu.

2018 eFields Nitrogen Studies

Read the summaries below to learn about research happening in nitrogen application.
View the full 2018 eFields Report below.

2018 eFields Report



Nitrogen Decision (Page 40-47)

The objective of the Nitrogen Decision studies was to develop a nitrogen decision strategy based on in-season information about the crop condition and nitrogen availability. Nitrogen timing seemed to have the biggest impact on yield during the 2018 season according to Clinton County results.

Nitrogen Management (Page 48)

Managing nitrogen can be challenging due to seasonal and field variability. The goal of this study was to understand the factors, complexities, and realities related to successful and efficient in-season nitrogen management in Ohio.



Nitrogen Rate (Page 50-57)

Nitrogen rate trials have been conducted in Fulton County since 2014 across 15 sites to investigate the effects of nitrogen rate on corn yield and profitability. In the 2018 study, anhydrous ammonia (82-0-0) was applied at rates of 100, 150, 200, and 250 lbs/ac.

Nitrogen Source (Page 58)

High speed, low disturbance nutrient application systems have been adopted that allow for a variety of nitrogen products to be injected below the soil surface at sidedress. The Nitrogen Source study evaluates four nitrogen sidedress source systems that include 28% UAN, 82% AA, 46% Urea, and 45% ESN.



Nitrogen Timing (Page 60-63)

High-clearance equipment has allowed producers to stretch the nitrogen application window. The Nitrogen Timing study aimed to determine the effect of nitrogen timing on corn yield and commercial Nitrogen Use Efficiency (NUE). The 2018 study compared five different treatments: V5, V12, split between V5 and V12, V12 with reduced rate, and pre-plant.

Late Season Nitrogen (Page 28-33)

Three late-season nitrogen studies were conducted in 2018 to determine the effects of rate and timing on corn yields. The first study was conducted in Auglaize County and tested five different treatment types. Two studies conducted in Clark and Madison County compared four placement options: standard practice, coulters, Nutra-Boss, and center-drop.



Articles Related to Nitrogen Application:

Nitrogen Application Timing for Weak Wheat Stands

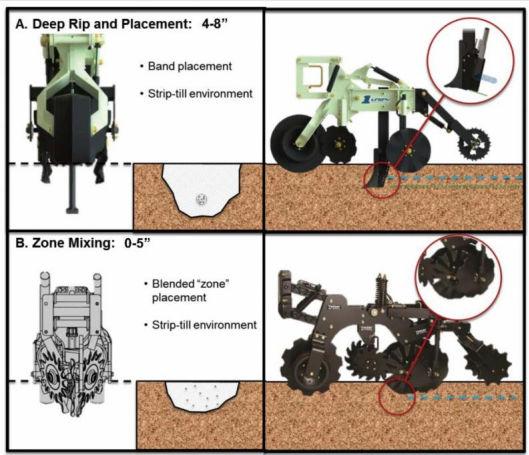
Ed Lentz, Ph. D recently released an article on the cold, wet winter that was experienced and its impact on fall tiller production. One option people have been considering is applying nitrogen early to increase spring tiller production. Learn more about this

option from Dr. Lentz below.

Nitrogen for Wheat



Sub-surface Nutrient Placement Options

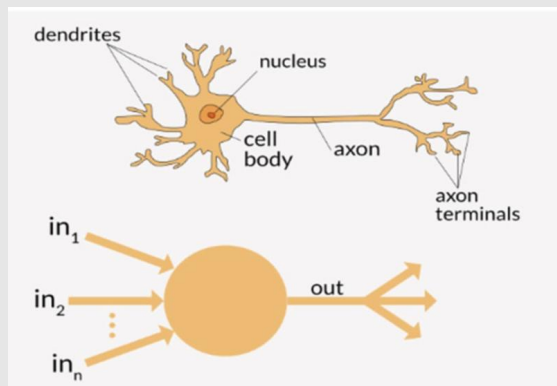


There are several equipment options available for sub-surface nutrient placement, each having different capabilities for performance. Broadcast, deep rip, and zone mixing are just a few that this brand new fact sheet focuses on. Click below to learn more about sub-surface options.

Nutrient Placement

The Reality of Artificial Intelligence

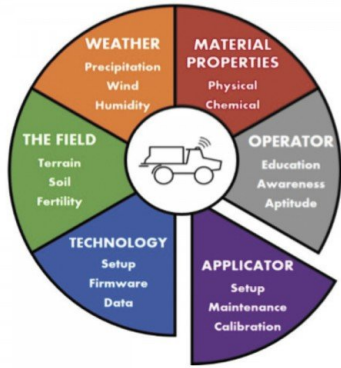
Artificial technology is no longer a thing of the future. In fact, the animal industry is already using artificial technology in robotic milking and feeding systems. PhD student, Chris Weigman, is currently working with artificial intelligence to develop neural network classifiers in crop scouting. Learn more about neural network classifiers below.



Artificial Intelligence

Prepare for 2019 Spring Fertilizer Applications

As we enter the spring season, it's important to start thinking about fertilizer application. The calibration and maintenance of spreaders is needed for effective and uniform

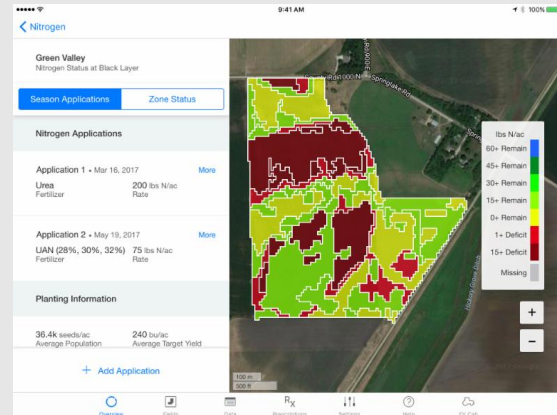


applications. Read the article below for some tips and resources on spreader set up.

Fertilizer Application

Value of Split Nitrogen

The decision to apply late-season nitrogen can be challenging. However, research is being conducted to determine the value of split nitrogen application. Aerial imagery is an important aspect of this research. Learn more about the research and findings of split nitrogen application in this article written by Jim Ruen.



Split Nitrogen

Like this Newsletter? Help us share it!

Help grow the popularity of "The Digital Ag Download" by sharing with growers, extension folks, and anyone interested in your neck of the woods! Just tell them to sign up and send them this link to go straight to our signup page:

go.osu.edu/DigitalAgDownload

CONTACT US!

digitalag@osu.edu



Department of Food, Agricultural and Biological Engineering
 Agricultural Engineering Building
 590 Woody Hayes Drive, Columbus, OH 43210
 Phone: 614-292-6131
 Fax: 614-292-9448