YIELD BOOK

2015 FIELD TRIAL SUMMARY

2015 FIELD TRIALS:

A NEW APPROACH WORKS

We have a new approach to nutrient management and plant health – and it works. In 2015, we worked with more than 100 farmers and 360 Yield Center dealers from across the Corn Belt to test our products in the field and compare against traditional nutrient and plant health management systems. In this book you'll see the results of those trials – some more robust than others, some more favorable to our approach than others and some in your backyard.

This isn't a data dump of the results. Our team of farmers, agronomists and engineers have worked together to ensure this summary includes real-world stories and real-world implications of using our tools and systems approach to capture more yield potential.

2015 was full of challenges for some areas in the Corn Belt, and in other areas it was some of the best growing weather we've experienced in years. You'll see throughout this Yield Book the impacts that weather had on yields – and how the 360 Yield Center tools helped in some cases mitigate the impact of weather and bring yields even higher in ideal growing conditions. We didn't win them all, but there are lessons to learn in every trial. We hope this book serves as a place you can learn something new and gain fodder to talk to your agronomist for how to make adjustments to your management plans in 2016.

Gregg A. Sauder

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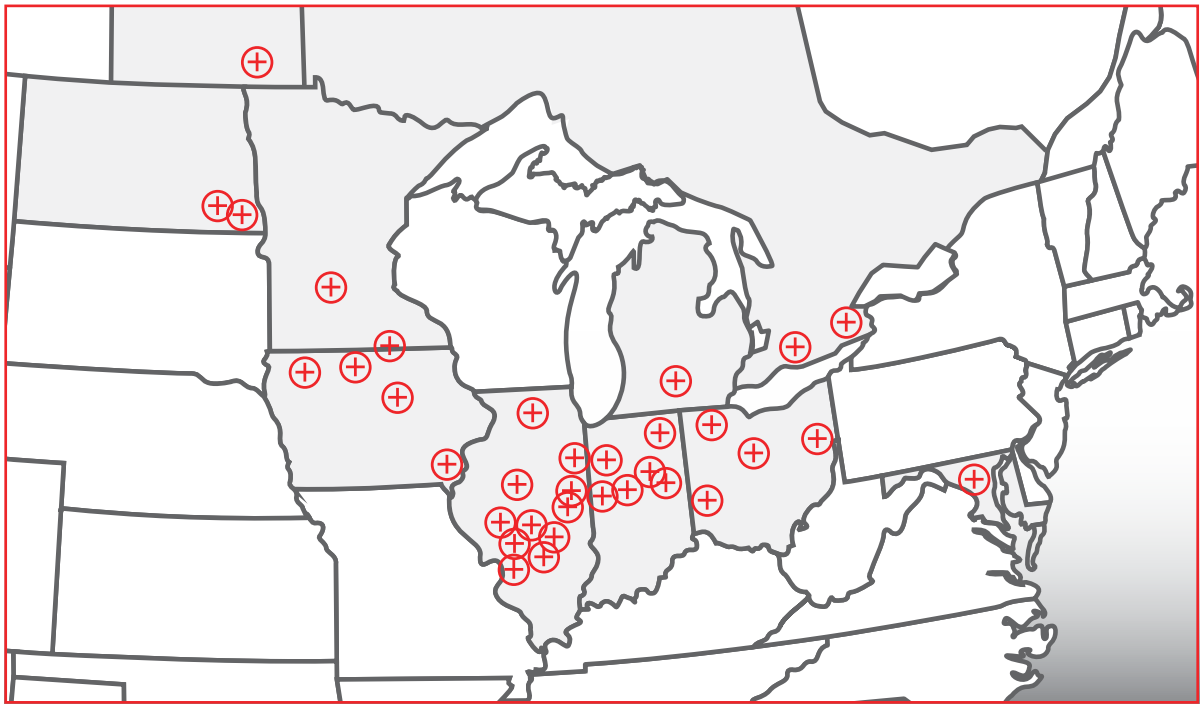
PERFORMANCE ACROSS THE CORN BELT

As you can see from the map, 360 Yield Center worked with growers and dealers from across the Corn Belt to conduct field trails. This included over 100 trials in more than 8 states and 2 provinces. You can see the trial names and locations outlined on the opposite page with direction on where to find those trials within this book.

TRIALS FROM ACROSS THE CORN BELT



KEY LEARNINGS FROM 2015 DATA

Welcome to the first edition of our Yield Book. The intention of this book is to share the key learnings from 2015 field trials and observations to allow you to utilize that information as you assess your management practices and make plans for your 2016 crop management strategies.

First, we want to thank all those who helped set up, monitor and share trial results. Growers who are willing to test new practices and management approaches are critical to testing and refining products and agronomic recommendations. As we continue to grow, we also need to grow our field-testing network with farmers like you who want to learn alongside of us in the field.

Let me start with exciting results! As we analyzed all of our 360 Y-DROP® vs. conventional methods (no 360 Y-DROP), we saw a 73% win rate for the 360 Y-DROP application. That is an outstanding number! I have spent more than 20 years professionally reviewing, conducting and summarizing research. In my previous experience, many times when we saw a product exceed 60% wins, we were onto something that could be big.

After analyzing our data a bit deeper, I formed the opinion that if we had measured the nitrates in the soil every time before the 360 Y-DROP application and adjusted the rate accordingly, we would have very likely increased that win percentage even more.

This is because N wasn't the limiting factor in every field/plot, so just adding more N without knowing if you need it isn't the best approach. This is true with any product: if it wasn't the limiting factor, a yield increase may not result.

You will see these plots later in the book where extra N didn't show a return. You will also see plots where measuring allowed us to hone in on the most profitable rate. In contrast, you will see plots where we applied more than normal due to significant loss from rainfall – and we knew about that loss by measuring, and that allowed us to capture yield potential we otherwise would have lost.

My takeaway from our data is that we will consistently be better off if we don't put all of our N on up front. Reserve some and wait for Mother Nature to show her hand. If it's a wet year that caused a lot of loss, you lose less because you didn't have it all out there. If it's a year with favorable growing conditions, you may be able to reduce the overall N we need to apply (from minimized loss and greater mineralization). If we have a mid-season drought, you may choose to apply less than you normally would, depending on your assessment of your yield potential in that V8-V12 time frame, before you make your last N application.

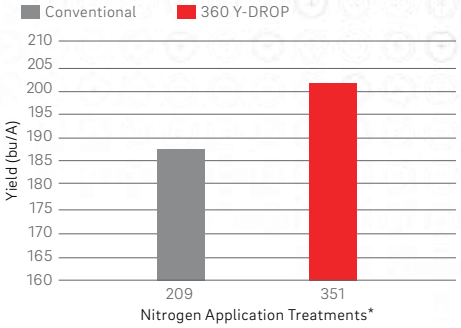
It is difficult to develop a universal answer for the right approach to every possible condition or environment or year, but I believe our data (across many environments) supports a base-plus approach to nitrogen management.

- + Apply a base of nitrogen that makes sense in your area/situation. Maybe 100 lb. or 125 lb. or what you deem is enough to get you several growth stages past when you plan to sidedress.
- + Measure your soil with 360 SOILSCAN™ in real time (just prior to sidedress) to know how much nitrate-N you have left to determine how much (if any) additional N is needed for a strong crop finish.
- + Use 360 Y-DROP to allow you to sidedress later in the corn crop's life, when its uptake is highest and you know more about the crop's potential, given the environment you are experiencing.

Thanks again for taking time to review our Yield Book. We look forward to having even more trials across the country next year. Visit www.360YieldCenter.com to learn more.

Ron Lloyd
Director of Agronomy, 360 Yield Center

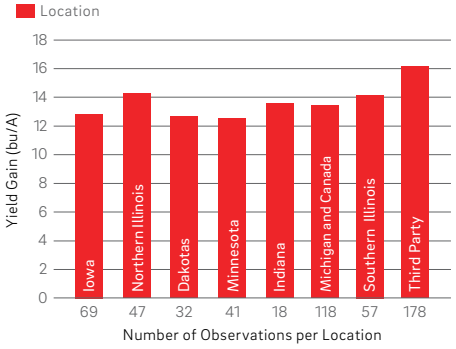
360 Y-DROP vs. Conventional Methods



⊕ Data indicates that 360-Y-DROP applications provide a 13.8 bu/A advantage over conventional applications.

*Treatment numbers in each category are not equal. Some trials may have had two 360 Y-DROP and one non-360-Y-DROP treatments.

360 Y-DROP Gains by Location



NITROGEN MANAGEMENT

SHIFT YOUR THINKING AND YOUR TIMING

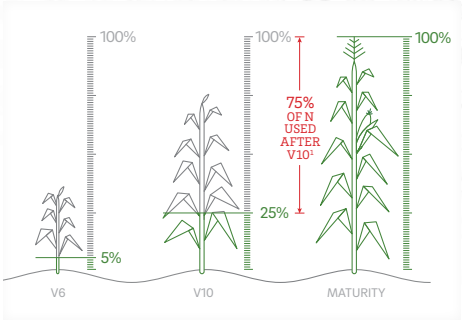
Of all the factors that contribute to production costs and yield, nitrogen has one of the largest impacts. Small improvements to nitrogen utilization can boost profitability. 360 Yield Center offers new tools that allow you to measure and supply the right amount of N when the plant is ready to use it.

We call it the base-plus approach, and this is how it works:

+ Apply a base rate of N in fall or spring for a strong foundation
+ Test soil in-season so you know how much N is left
+ Come back between V6 and tassel to apply more N when corn needs it most

BUILD A NITROGEN BASE

Apply a base rate of N in the fall or spring to ensure your corn gets off to a great start, but save some of your N supply. Your corn uses almost 75% of its overall N needs after V10[1] — so if you run out of N after pollination, growth will shut down, ears will be shorter and grain fill will suffer. Instead of putting all of your N out early when it's vulnerable to loss, save some and let Mother Nature show her hand. Then test your soil to find out how much N you've used or lost, or gained through mineralization, and refuel the crop to get to the finish line.



Nitrogen Uptake Throughout the Season

MEASURE HOW MUCH NITROGEN IS LEFT

Understanding in-season N availability can be a real guessing game. Know exactly how much nitrate N is present through real-time measurement. Use 360 SOILSCAN to test N availability in the field – and soil pH – with the accuracy of a soil lab. It generates an N recommendation based on yield goal, growth stage and organic matter. You'll know how much N to apply just when it's needed.


Real-time Testing with 360 SOILSCAN

APPLY AT THE RIGHT TIME AND PLACE

The sidedress window is now so wide you can split-apply N with more confidence. 360 Y-DROP provides flexibility and control for timing midseason N application anywhere from V6 to tassel — a window of more than 30 days. It places liquid N at the base of the stalk, where even modest dew pushes N to the root mass for rapid uptake.


Precision Placement with 360 Y-DROP

THE 29-BUSHEL $104 ADVANTAGE

Field trials show it pays to use the base-plus approach. This side-by-side trial compared yield differences for 200 lb. of N using four different N timing strategies. The results: The later the N application, the higher the yield. For example, compared with a 200-lb. one-and-done spring application, a split-N application of 150 lb. in spring and 50 lb. at V12 with 360 Y-DROP boosted yield 29 bu/A.[1] That's a gain of $104 per acre.*

*Calculated using $3.60/bu corn price.
[1]Data on file.

WIN-WIN RELATIONSHIP:

FARMERS NEED AGRONOMISTS AND AGRONOMISTS NEED FARMERS

Jason Kienast
Research and Agronomy, 360 Yield Center

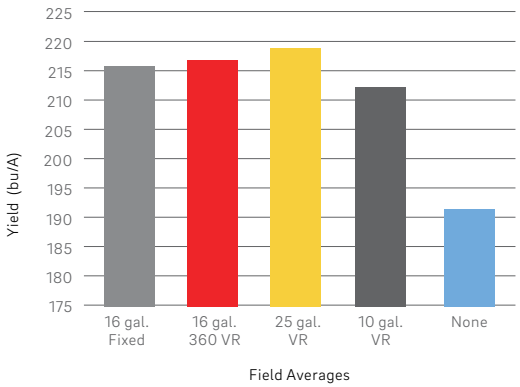
Farmers and agronomists sometimes spend too much time looking for a fix-all for the previous year's problems when, in reality, we need to change a combination of things to be better producers and see better results.

For instance, using 360 Y-DROP to split-apply nitrogen and to apply N later in the season, when corn needs N the most, is great. But how do you determine how much N to apply mid-season? Are we really being as profitable as possible by taking a wild guess for an input that makes up a large portion of our costs? By using two products in conjunction with each other, like 360 SOILSCAN and 360 Y-DROP, farmers can make a much bigger impact on their nitrogen management program – and make the most of N inputs.

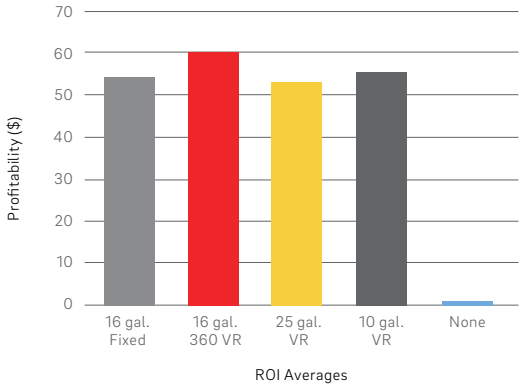
Return on investment (ROI) is crucial to running a farm – and business. We can't allow the crop to suffer and lose yield from nitrogen loss. But neither can we blindly apply unneeded nitrogen and expect maximum profit. We have to test our nitrate levels with 360 SOILSCAN to make the right decision and make the most of N inputs. The charts below show the yield and ROI of splitting nitrogen with the accurate rate (16 gal.) vs. no 360 Y-DROP, a low rate (10 gal.), and a high rate (25 gal.). They show that, by splitting your nitrogen application, in general, your profitability soars. Why not make it the most profitable by putting on the right rate?

N MANAGEMENT WITH 360 SOILSCAN AND 360 Y-DROP

Response to Nitrogen Rates



Return on Nitrogen Application



By using 360 SOILSCAN in conjunction with 360 Y-DROP, farmers can make a bigger impact on their nitrogen management program – making the most of N inputs and increasing profitability.

Even with the most innovative tools in your toolbox, growers still need a trustworthy agronomist to help make decisions that improve operations. Your agronomist can help you decide when to pull cores to test with 360 SOILSCAN so your nitrogen prescriptions are accurate across the field. A good agronomist also will help you interpret your soil test results so you know what to expect from mineralization at a certain growth stage.

Nitrogen is not where the expertise of an agronomist stops. Plant health also is a huge factor in yield. We saw as much as 20 bushels lost to incorrect management of plant diseases in corn this year. Your agronomist can help you understand what environmental conditions are conducive to certain plant diseases, where to scout for disease and what actions to take to combat disease – like the best fungicide for that specific disease and what rate to apply safely. Fungicide is as important as nitrogen and you need tools and an educated agronomist to get the best return on investment and the best yield.

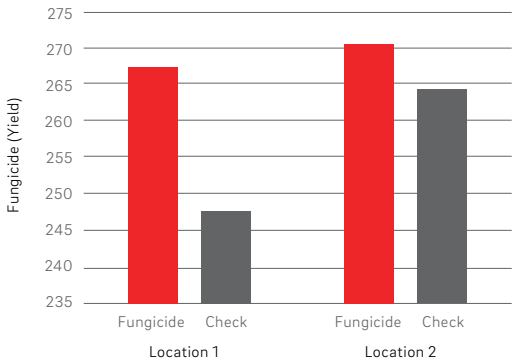
The chart below reports the same hybrid tested at two different locations. This particular hybrid was one that was red-flagged by our agronomist at the beginning of the year being susceptible to Northern Corn Leaf Blight (NCLB). Location 1 was in Iowa where NCLB hit corn early and had a huge impact on yields, but Location 2 was in Illinois where NCLB didn't hit until well after brown silk. At Location 1, we were definitely above disease threshold (lesions on the ear leaf, or leaves above ear leaf have lesions that make up the area of a quarter per leaf). At Location 2, we never hit threshold until long into brown silk. And applying fungicide after brown silk is a diminishing return. Your agronomist can help you understand the cost of application, the likely result and what your corn price is to determine if fungicide treatment in a situation like Location 2 is warranted.

360 Yield Center has a lot of great tools that bring value to your farm operation. Bringing your agronomist into the field with you and these tools can make that value exponentially larger. Instead of trading in the agronomy tools for your agronomist or vice versa, we can become a lot more profitable and sustainable as crop producers by using these assets together.

FUNGICIDE TREATMENT

ROI
Maximize with 360 Yield Center tools and your agronomist

Response to Fungicide



Your agronomist can help you understand the cost of fungicide application, the likely result and whether or not the treatment makes sense in your situtation.

CHANGING THE WAY WE MANAGE SULFUR

Jim Schwartz
Regional Agronomy Manager , 360 Yield Center

While 2015 will rightly be remembered as the year when supplemental nitrogen applications paid huge dividends in much of the Corn Belt, post-planting applications of sulfur often returned strong results for growers as well. The questions many are asking is why sulfur application is more important now than in previous years and how can we solve the issue.

Sulfur deficiencies continue to arise for a number of reasons:

1. As power plant emissions have decreased, the free sulfur (S) previously deposited via rainfall has declined dramatically. Many areas of the Midwest receive 10-20 lb. per acre less S from this source.
2. Higher yields remove more S from our soils, requiring higher levels of replacement.
3. Fewer sulfur-containing pesticides are used in today's agricultural industry.
4. The movement to reduce tillage reduces the mineralization of S into our soil mainly due to cooler temperatures.

The main source of sulfur for crops (other than inorganic fertilizers) comes via the mineralization of soil organic matter. However, soil releases a limited amount of S via mineralization – roughly 2-5 lb. of sulfur are mineralized for every percent of organic matter. Therefore, if you have a 3% organic matter soil and a good mineralization year, you might expect to mineralize roughly 10-15 lb. of S. However, a 200 bushel corn crop requires approximately 26 lb. of S to produce that crop. So, if we get 15 lb. via mineralization, where does the rest of the sulfur supply come from? In the past, it generally came from rainfall deposits but since that source has nearly been eliminated we now must supplement the crop.

One consideration for fertilizing a crop is that the S gets to the plant in the sulfate form (SO_4^-) mostly via mass flow of soil water. Since the SO_4^- ion is negatively charged like your soil and moves with soil water, it can move quickly through your soil profile – much like the nitrate molecule. As a result, we continue to see more deficiencies appearing. The other consideration is that the corn plant uses a little over 50% of S after tassel, so we need to make sure it is available later in the year when the corn plant needs it to help convert nitrates in the plant during the critical grain fill stage.

Striping is one sign of young plants being sulfur deficient.

Sulfur application is more important than ever. The need to supply plants with adequate fertility requires growers to rethink how S is supplied and to look to technology to meet those demands.

This past year we witnessed a confluence of events that exacerbated the issue.

- Cool spring temperatures and lack of soil oxygen slowed the mineralization of organic S
- Heavy rainfall moved sulfate molecules down through the soil profile while roots were more shallow
- Lower organic matter soils and/or no-till fields were of particular concern

Moving forward, as we continue to increase our yield levels, the need to supply the plant with adequate fertility will require growers to adopt technology to meet the needs of the crop. Sulfur is a great example in that we rarely talk about sidedressing S, but given that corn requires so much S late in the year and that the sulfate molecule is leachable, we need to rethink how we supply S to meet the growing demand.

2015 YEAR IN REVIEW

SNAPSHOT OF THE GROWING SEASON

Greg Ury, *Regional Agronomy Manager for central and southern Illinois, Missouri, Kentucky, Tennessee and the Delta region*

Jamie Brand, *Regional Agronomy Manager for Iowa, Kansas and Texas*

Matt Foes, *Regional Agronomy Manager for central and northern Illinois and southern Wisconsin*

Aaron Phillips, *Regional Agronomy Manager for Minnesota, central and northern Wisconsin and northern Iowa*

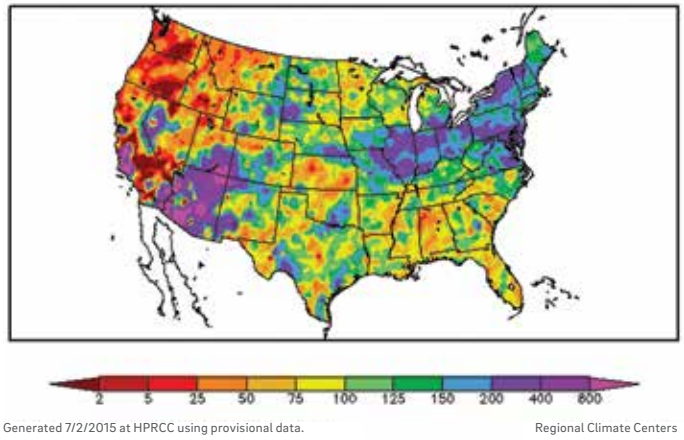
Stephanie Smith, *Regional Agronomy Manager for Michigan, northern Indiana, Canada and eastern U.S.*

Jim Schwartz, *Regional Agronomy Manager for Indiana and Ohio*

Josh Messer, *Regional Agronomy Manager for the Dakotas and Nebraska*

6/1/2015 – 6/30/2015

Percent of Normal Precipitation (%)



The precipitation map tells the story of the month of June in the growing season. From areas that had flooding rains where N was a common limiting factor as well as lack of oxygen in the soil (due to saturated soils) which reduced stands and significantly impacted crop growth and productivity to areas that had almost ideal weather patterns with good to even record yields. It is a year that most of us, regardless of where we farm, won't forget anytime soon.

The regional agronomy managers for 360 Yield Center each put their own experiences from 2015 down on paper and, even though each region had a slightly different year, the summaries had very common themes and learnings. We have compiled those below in the four things they learned this year.

For those in the massive rainfall areas, we look back on the year and may wish we could dismiss it as an anomaly; the truth is that heavy precipitation events continue to become more the norm. It would be wise to learn from the experience and incorporate those learnings into our operations. You may be wondering how and why we would even consider learning anything from 2015, but we are quite certain that there will be areas in the Midwest that experience something similar sometime down the road so let's look at potential learnings that we might apply moving forward. The same is true for those areas that had a good growing environment: there are still opportunities to manage our crop differently, to live on the razor's edge, meaning maximize yield potential without over applying inputs. Here are four key points that we learned this year.

1. Don't walk away from a crop. There were many growers who looked at their crops in late June and were sure that it was impossible to salvage them. While there were some extreme cases this year where that turned out to be true, we also learned that modern day hybrids are incredibly resilient and when given a fighting chance can recover. I had many growers comment to me that after initially giving up, they attempted some rescue applications and were stunned at the results.

2. Measuring to understand our nitrogen bank. In areas that experienced heavy rain, multiple applications of nitrogen and later applications of nitrogen paid off huge. This year it seemed that in these areas, the later we applied N and the more times we applied N the better the results. That tends to make sense when you think about the year, but those who had the equipment to make multiple trips across the field (even up to VT) to make late N or fungicide applications reaped better returns. It is also consistent with the measurements we took in season. Our soil bank was low to empty when the crop still had a long way to go. That is not to say every year will be the same, but this year we learned that all the N up front or in the fall was not the right choice.

In areas that didn't receive these flushing rains and had very good growing conditions, measurement showed us that N may not be our limiting factor. If we had a base rate down (i.e. 125 lb./A of N) our measurement may show us that the amount we needed to apply to finish the crop would result in less nitrogen applied than our typical all done up front program.

3. Micros and secondary nutrients are important. While we rightfully focused much of our attention on nitrogen, the cool and wet spring also taxed our soils – especially low organic matter soils – to provide the needed nutrition for our crops. Even though a 200 bu/A corn crop needs "only" about 26 lb. of sulfur, we learned that mineralization of those nutrients can be very limited and supplemental applications can yield very good returns.

4. Oxygen. We don't often talk about the importance of air and oxygen in our soils, but we probably realize how critical and how fine the line can be after a year like 2015. One of the main factors that can help or hinder the oxygen content in our soils is drainage and/or density layers in our soil. Sometimes what seems like nutrient issues can actually be more related to anaerobic conditions. Oxygen, along with temperature and adequate moisture, also drives the mineralization process, which explains why areas with adequate, not overwhelming, rainfall and good environments reaped the benefit of mother nature's "free" N.

In closing, we are uncertain of what 2016 will bring, but we have more tools to help monitor and manage in-season application than we have had in the past. One common consideration growers are having is reducing applied nitrogen up front and monitoring and measuring nitrogen levels and crop potential throughout the season. In most cases, growers are coming back with an application close to V10 once N uptake is increased. If we stay agile and are prepared to react to what Mother Nature hands us, we will be rewarded for our efforts. As we move into 2016 and beyond, we will try to pay more attention to when the crop tells us to feed it and less on what we have always done. Progress does not come without significant change. This applies to all aspects of life, so be open to change as opportunities are on the side of decisions.

CAPTURING YIELD POTENTIAL: RESULTS ARE IN

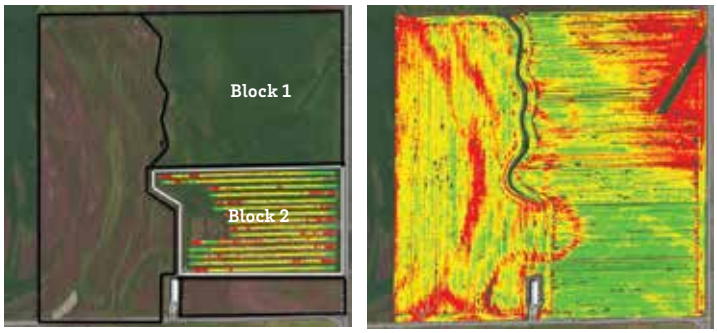
RESULTS FROM 2015 FIELD TRIALS
360 Y-DROP VS. UREA

Broadcast urea at the V4 to V6 corn stage is an in-season application method that some growers use. Some of our trials this season compare this system with 360 Y-DROP. The three differences in these systems is N product form, timing and placement. The broadcast urea approach is to broadcast over the entire field (vs. precise placement next to the plant) and is typically done in the V4-V6 growth stage. The 360 Y-DROP system delivers UAN solution (and/or other liquid fertilizer products) right next to the plant and is typically applied in the V8-V12 growth stage (when the plant uptake is the highest). This particular study speaks for itself comparing the same rate of nitrogen in each of these systems, but are different in timing and placement.

IOWA
360 Y-DROP VS. UREA

This grower's 2015 nitrogen management system included:

+ Corn after soybeans
+ 110 lb. of N (NH3) on December 30, 2014
+ 50 lb. of N (32% UAN) applied April 24, 2015 via weed-and-feed
+ Planted April 26
+ 60 lb. of N (urea) applied on May 29
+ 60 lb. of N applied via 360 Y-DROP on June 19
+ 15 lb. of N applied via pivot on July 6
+ 15 lb. of N applied via the pivot on July 13



This farmer did not see the yield response as much in the southeast corner where the farmer applied a lot of manure.

Prescription	Block 1	Block 2
Fall Application	110 lb. N (Fall NH3 applied 12/30/14)	110 lb. N (Fall NH3 applied 12/30/14)
Spring Application	50 lb. N (32% in Weed-and-Feed 4/24/15)	50 lb. N (32% in Weed-and-Feed 4/24/15)
Sidedress Application	60 lb. Broadcast Dry Urea applied 5/29/15 (V4)	60 lb. N, 32% applied with 360 Y-DROP on 6/19/15 (V10)
Irrigation Application	15 lb. 7/6 and 15 lb. 7/13 via Pivot	15 lb. 7/6 and 15 lb. 7/13 via Pivot
Yield	191 bu/A	235 bu/A

* Spring and fall application is manure (high mineralization potential).

RESULTS FROM 2015 FIELD TRIALS

360 Y-DROP VS. ONE-AND-DONE

A common practice is putting all nitrogen down prior to planting. But a base-plus approach gives growers the ability to put a modest base rate down and come back to apply the remaining N the crop needs mid-season. This allows us to save back the rest of our N fertilizer for when the crop needs it most (V8-12) and after we know more about what the yield potential is of that crop based on stand, environment – future and past. This all helps us determine how big of an ear the plant planned for during the V6 and beyond growth stages. We also recommend to measure – with 360 SOILSCAN – what is in the soil bank just before the side dress application to make a more educated decision of how much N is needed to finish the crop. While not all of these plots used the measuring step, you will see the results of spoon-feeding the crop vs. putting all N out early and having it subject to loss.

IOWA

360 Y-DROP VS. ONE-AND-DONE

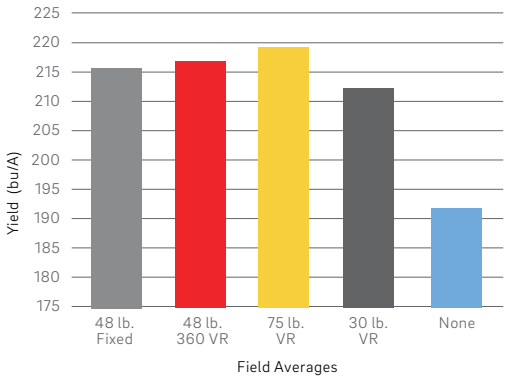
It is important to think about farming for maximum profitability not just maximum yields or the lowest cost. Sometimes we may think we can save our way to increasing revenue, but this rarely works. Instead, we need to use agronomic tools to make timely applications that give us a return on our applications.

This Iowa grower did a great job with a little help from 360 SOILSCAN, 360 Y-DROP and his relationship with a knowledgeable agronomist. He was able to maximize his return by taking a holistic approach.

In this trial, applications with 360 Y-DROP yielded an additional 25 bu/A compared to one-and-done applications. And, by using 360 Y-DROP for mid-season N application, the grower received an average of $41.47 additional ROI over the one-and-done management approach.

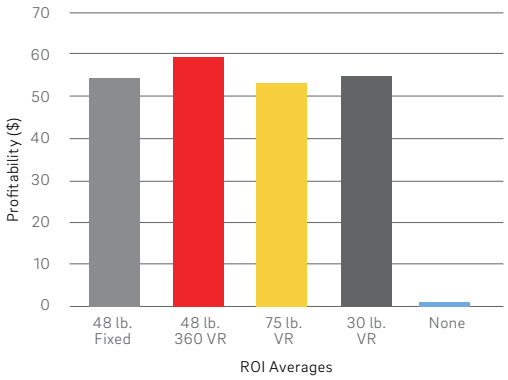
N MANAGEMENT WITH 360 SOILSCAN AND 360 Y-DROP

Response to Nitrogen Rates



This chart shows split application nitrogen with 360 Y-DROP, its application rates and whether it was variable rate or not. The program was 120 lb. spring NH3 followed with 30 lb. weed-and-feed and also the 360 Y-DROP rates of 28% UAN above. The prescription listed "None" was 170 lb. spring NH3 followed with 30 lb. weed-and-feed.

Return on Nitrogen Application



This chart shows how profitable each of these strips were.

+25 bu/A
Advantage with 360 Y-DROP over one-and-done

By using 360 Y-DROP for mid-season N application instead of one-and-done, growers received an average of **$41.47 additional ROI.**

PRIMGHAR, IOWA

360 Y-DROP VS. ONE-AND-DONE

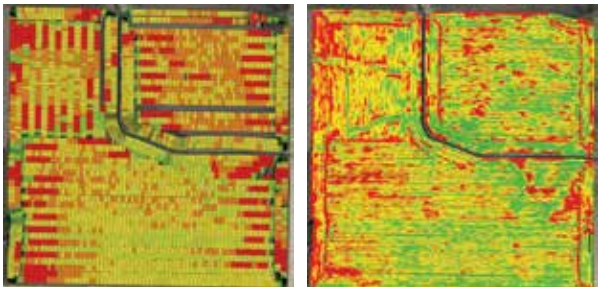
This trial compared a one-and-done approach with a split-N application. The steps in this farmer's N management plan were:

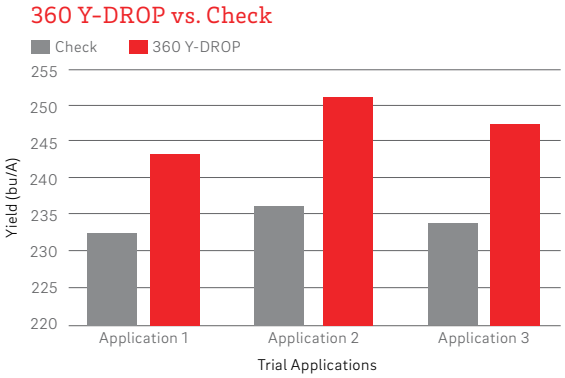
+ Pre-plant nitrogen
  – 3 ton of chicken litter applied in the fall (90 lb.)
  – 50 lb. of N with weed-and-feed applied prior to planting
+ Mid-season nitrogen
  – 85 lb. of N with 360 Y-DROP @ V12

Where 360 Y-DROP was used for mid-season N application, the farmer realized an average additional 13.25 bu/A.

The farmer's key take away was that he should have used in-season soil testing, with 360 SOILSCAN, to decrease his mid-season N rate. There was good mineralization from the chicken litter that could have reduced his sidedress rate.

+13.25 bu/A
Advantage with 360 Y-DROP for mid-season N application





HUBBARD, IOWA

MULTIPLE RATES WITH 360 Y-DROP VS. ONE-AND-DONE

If this farm were a $250/acre cash rent, making the right application would be the difference between turning a profit or losing the farm.

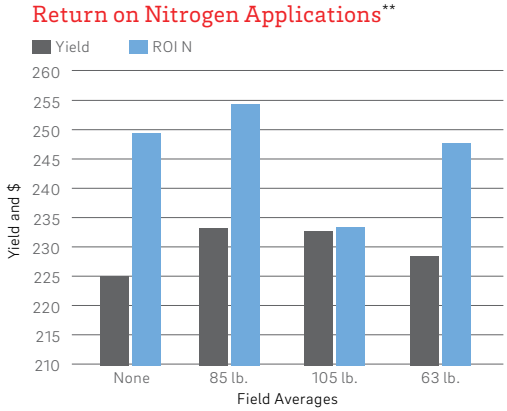
This plot in Hubbard, Iowa was planted on April 29, 2015, and compared split-N applications at different rates with 360 Y-DROP mid-season with a one-and-done spring NH3 application.

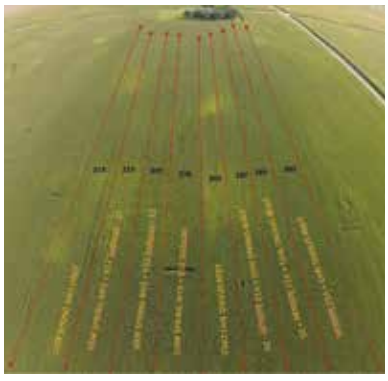
Nitrogen Application Plans:

+ One-and-Done: 150 lb. NH3 spring-applied with stabilizer
+ 100 lb. NH3 spring-applied with stabilizer and 360 Y-DROP application at V12 with rates of 63 lbs., 85 lbs. and 105 lbs. of N

The split-N application rates were developed with a 360 SOILSCAN recommendation of 85 lb./A. From there, the farmer increased and decreased the rate by 25% to come to the 63, 85 and 105 lbs. prescriptions.

Increased yield does not always equal increased net income – when taking into account input costs. In this case, the sweet spot was when the farmer applied 85 lbs. of N mid-season, which resulted in the highest yield and the most ROI*. Even under ideal growing conditions, it paid to split-apply nitrogen, but the grower had to apply to the correct amount in order to see the return.





Spring NH3: 150 lb. only
Estimated Yield: 213 bu/A
Total N Applied: 150 lb.

Spring NH3: 100 lb.
360 Y-DROP at V12: 85 lb.
Estimated Yield: 223 bu/A
Total N Applied: 163 lb.

* Return on investment was figured with the assumption of $3.60 corn, $.40/lb. NH3, $.50/lb. UAN, $1.5/A application cost (owned equipment), and $500 other costs (fertilizer, seed, equipment, etc.). It also is assumed that the grower owns his ground.
** Trial was done in conjunction with the Iowa Soybean Association.

BUFFALO LAKE, MINNESOTA
360 Y-DROP VS. ONE-AND-DONE

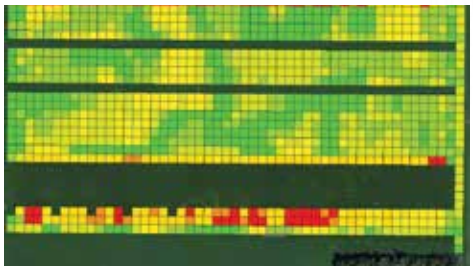
Chad Schmalz from Buffalo Lake, Minnesota, planted his field on April 29 and conducted a nitrogen management trial on the field to show the differences between a one-and-done approach as compared to split-N application with 360 Y-DROP.

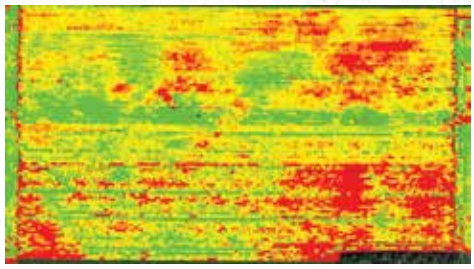
His nitrogen base was 150-69-90 applied in the spring pre-plant. For the strips where he did mid-season N application with 360 Y-DROP, Schmalz applied 21 lb. of N and 3 gal. of ATS with 360 Y-DROP at V12 (July 1).

More Yield Captured

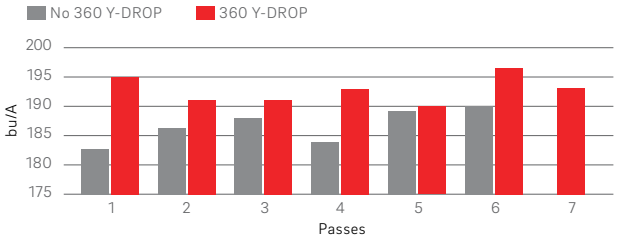
For the strips where Schmalz used 360 Y-DROP to apply N mid-season, he saw a yield increase – an average of 6 bu/A advantage.

360 Y-DROP	One-And-Done
193 bu/A	187 bu/A

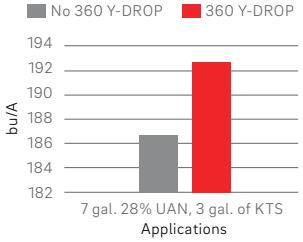




N + ATS Trial



In-season N applications with 360 Y-DROP



GILLESPIE, ILLINOIS
360 Y-DROP VS. ONE-AND-DONE

This trial compared eight different application plans with a total of 16 passes in the field. It compared the yield impact of mid-season nitrogen application with a one-and-done approach.

The grower, Bill Heyen, had trials that were 100% preplant with variations of split-N applications in-season. The trial demonstrated that split-N treatment plans with heavier N rates in-season had the greatest results.

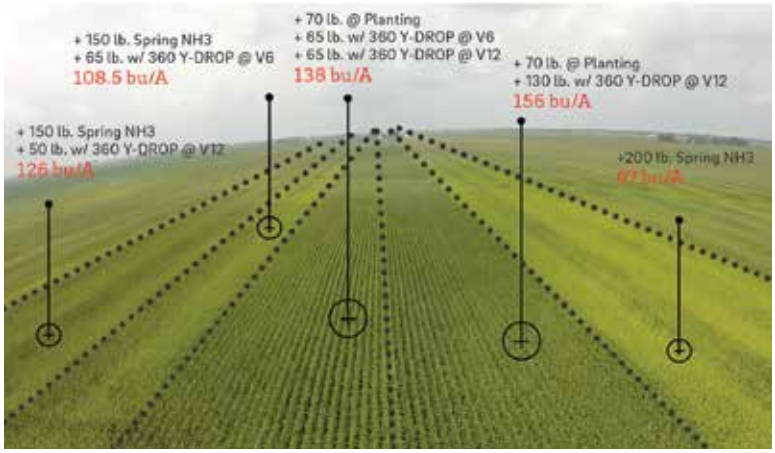
+ Treatments that were all pre-plant or pre-plant plus at-planting applications resulted in more N loss and were not able to fulfill the plants' needs later in the season.
+ The treatments that had the majority of the N applied pre-plant or at planting and were followed by in-season application with 360 Y-DROP outperformed the treatments with all N applied early. However, these treatments still had significant N loss and less than favorable yields.
+ Heavy rainfalls in May and June resulted in very high amounts of N loss from any early N applications. The greatest results came from the trials where less N was applied early and allowed for more in-season N to be applied with 360 Y-DROP. Since corn takes up approximately 75% of its N after V10, the later 360 Y-DROP applications allowed Heyen to lose less N and have more N available when the plant really needed it.

Split nitrogen application in this trial improved yield as compared to the control (200 lb. of N applied preplant). The trial also showed that the addition of 360 Y-DROP N application substantially increased yield — by an average of 29.5 bu/A.

In low ground areas where heavy rain had a large impact through ponding, 360 Y-DROP had an even greater positive impact and increased yield by 35 bu/A.

Nitrogen Timing and Placement Trial

Overview of Select Passes



+29.5 bu/A
Average advantage with 360 Y-DROP

"I've seen a lot of advantages of using 360 Y-DROP. This season we had an excessive amount of rain and the corn was starting to yellow pretty good. Three days after we applied the nitrogen with the 360 Y-DROP it greened up. I mean it looked great. We didn't see near as much ear tipped back as what some of the neighbors experienced, and the stalk seemed to be a little healthier later on in season."

– Bill Heyen, Gillespie, Ilinois

GIRARD, ILLINOIS

360 Y-DROP VS. ONE-AND-DONE

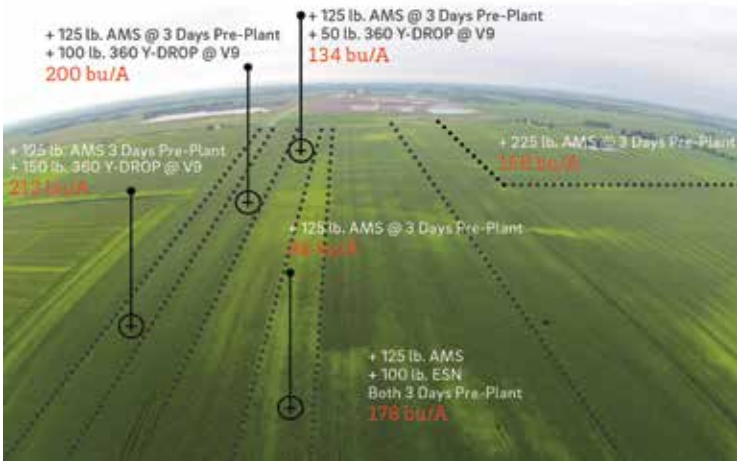
360 Y-DROP Mid-Season Nitrogen Application Trial

This trial compared several different nitrogen application plans, including a prescription determined through in-season nitrate nitrogen measurement with 360 SOILSCAN.

+32 bu/A
Advantage with split N over one-and-done

By using in-field soil testing equipment, the farmer knew exactly how much N was needed to finish the season and the yield results paid off. In the strip where 150 lb. of nitrogen was applied at V9 per the 360 SOILSCAN recommendation, the yield was 212 bu/A – the largest yield of the entire trial.

By applying N later in the season – where 125 lb. was applied pre-plant and an application at 100 lb. of nitrogen at V9 with 360 Y-DROP was used – this grower experienced an advantage of 32 bu/A for split-nitrogen application compared to one-and-done application of 225 lb. of AMS pre-plant.



Field Strip	AMS 3 Days Pre-Plant (lb.)	ESN 3 Days Pre-Plant (lb.)	28% UAN @ V9 (lb.)	Yield (bu/A)
Strip 1	125	0	150[1]	212
Strip 2	125	0	100	200
Strip 3	125	0	50[2]	134
Strip 4	125	0	0	86
Strip 5	125	100	0	178
Strip 6	225	0	0	168

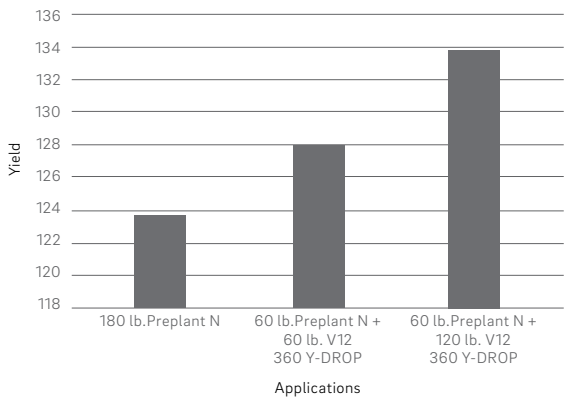
[1] Rate recommended by 360 SOILSCAN.
[2] Rate recommended by modeling software.

DELORIANE, MANITOBA CANADA

360 Y-DROP VS. ONE-AND-DONE

In this trial the grower, Frank Prince, compared pre-plant nitrogen that was applied in April via a strip-till application with additional mid-season N application with 360 Y-DROP. The field was corn-on-corn rotation, and unfortunately, had poor yields due to rootless corn syndrome.

Nitrogen Application Methods and Rates



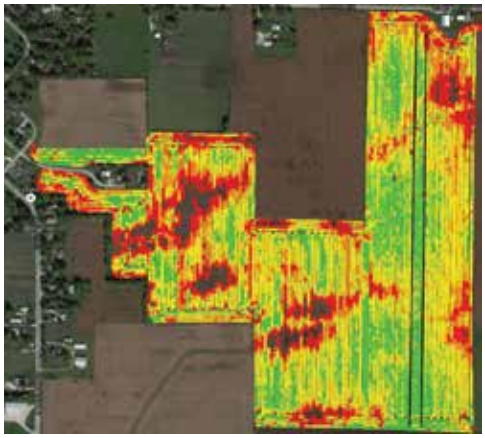
IRVING, ILLINOIS

360 Y-DROP RESCUE VS. ONE-AND-DONE

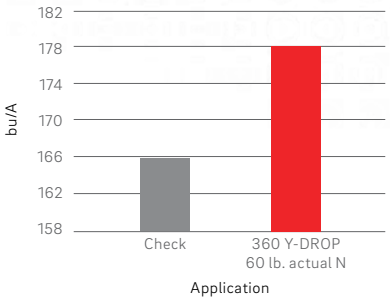
Larry Reincke of Irving, Illinois, planned to only apply his usual 170 lb. of spring-applied NH3 with a stabilizer. However, after more than 30 inches of rain in June, he decided to make a few rescue passes in his field with 360 Y-DROP.

Reincke came in with 360 Y-DROP at R2 and applied 20 gal. of 28% UAN – 60 lb. of actual nitrogen to part of his field, which is outlined in the yield map with black.

The corn in the area of the field where rescue N application was made with 360 Y-DROP yielded 12.5 bu/A more than the rest of the field.



360 Y-DROP Rescue Treatment

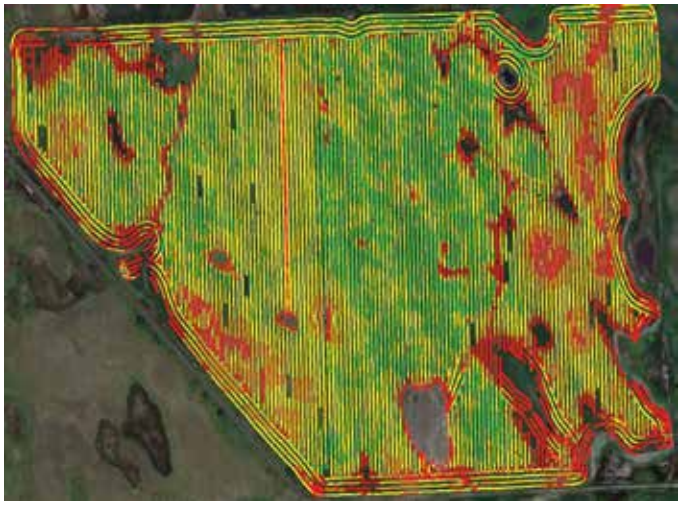


LUCCA, NORTH DAKOTA

RESCUE N WITH 360 Y-DROP

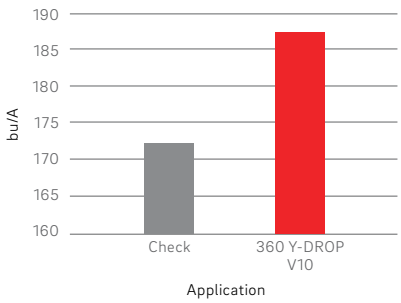
This field in Lucca, North Dakota, received 165 lb. of N via fall NH3 application. However, the grower received 10 inches of rain shortly after planting. The grower came back at V10 with 360 Y-DROP and applied 30 lb. of N (28% UAN) in half of the field to show the yield differences between rescue N and all pre-plant.

In the parts of the field where the grower came back at V10 with 360 Y-DROP he experienced a 15.0 bu/A advantage.



+15.0 bu/A
Advantage at V10 with 360 Y-DROP

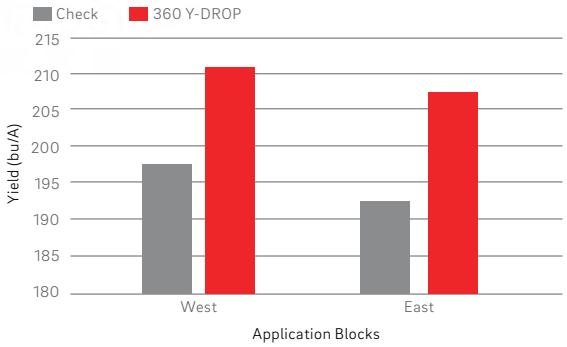
V10 360 Y-DROP Application

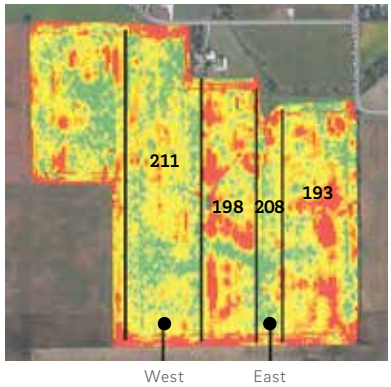


FRANKFORT, INDIANA
360 Y-DROP VS. ONE-AND-DONE

In this trial, the grower applied 200 lb. of N pre-plant and the grower came back at V12 with 360 Y-DROP and applied 60 lb. of N. On average, the strips with additional N via 360 Y-DROP at V12 yielded 14 bu/A more than those with just pre-plant N.

V12 360 Y-DROP APPLICATION





Field Strip	Yield (bu/A)
One-and-Done West	198
360 Y-DROP West	211
One-and-Done East	193
360 Y-DROP East	208

BUCYRUS, OHIO
360 Y-DROP VS. ONE-AND-DONE

This trial was completed on the farm of Steve Reinhard, in Bucyrus, Ohio. The trial aimed to compare one-and-done nitrogen with sidedress or split N application with 360 Y-DROP.

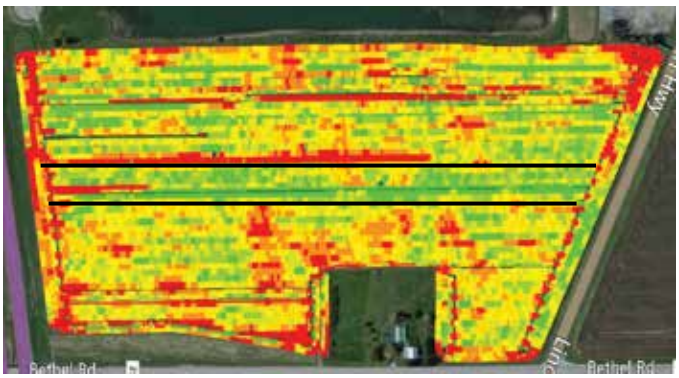
Trial N Applications

+ **Pre-plant N:** 185 lb. of N
+ **Planter applied:** 20 lb. of N (10-34-0)
+ **Sidedress:** 180 lb. of N (broadcast urea with inhibitor)
+ **360 Y-DROP:** 35 lb. of N at tassel

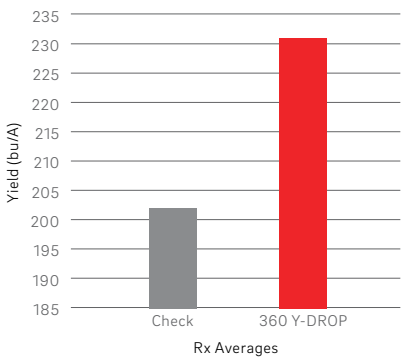
The strips with the 360 Y-DROP application yielded an average of 29 bu/A more than those with a one-and-done N program.

+29 bu/A
Advantage with 360 Y-DROP vs. one-and-done

You'll see in the yield map that the red strips in the field is where there was no broadcast urea or N via 360 Y-DROP N applied. The strip with 360 Y-DROP application is bracketed with the black lines.



Reinhard 360 Y-DROP Trial



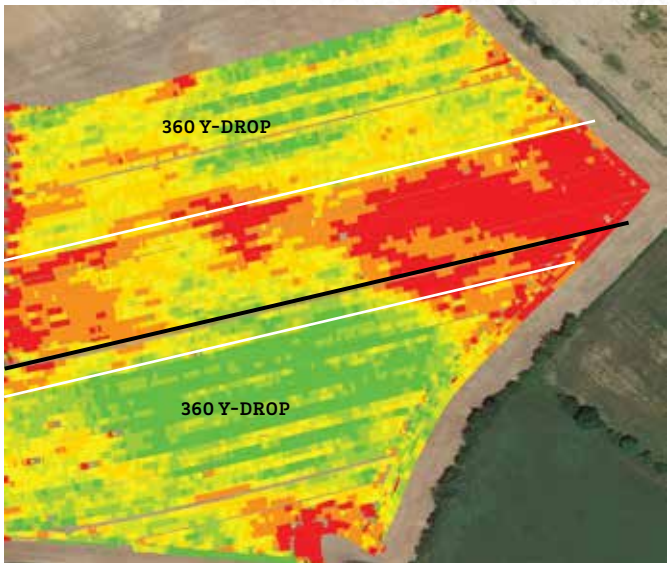
MARYLAND
360 Y-DROP VS. ONE-AND-DONE

This trial in Maryland was done on the farm of Curtis Martin and aimed to compare 360 Y-DROP N application with a one-and-done approach.

Nitrogen Application Prescription

+ **Pre-plant:** 100 lb. of N total (the north side was 75 lb. (32% UAN)) with 3 gal. each of CaNO3, AMS, and Dextrose; the south side of the field was all 100 lb. of N (32% UAN).
+ **360 Y-DROP:** 95 lb. of N (32% UAN) on the strips labeled in the yield map (non-360 Y-DROP application strip is between the white lines).

The pre-plant mixture application yielded 132.12 bu/A, but with the addition of 360 Y-DROP it yielded 188.65 bu/A. The straight UAN pre-plant by itself yielded 170.14 bu/A, but with the addition of 360 Y-DROP it yielded 218.65 bu/A.



GRAND RAPIDS, OHIO
360 Y-DROP VS. ONE-AND-DONE

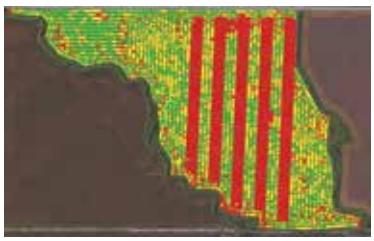
This trial in Grand Rapids, Ohio, compared a one-and-done approach with a split-N application with 360 Y-DROP. The field has a rotation of corn-corn-soybeans and was on its second year of corn. The growing season was cool and wet.

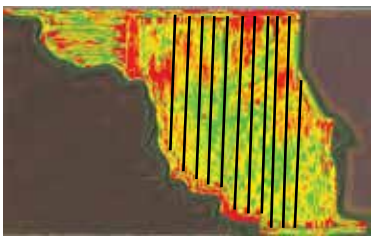
Trial Prescriptions

+ **Split-N:** 150 lb. of N (NH3) upfront and came back with 55 lb. of N with 360 Y-DROP between V6 and V8
+ **One-and-Done:** 205 lb. of N (NH3) upfront and no additional N

Pre-applied Nitrogen Recommendation

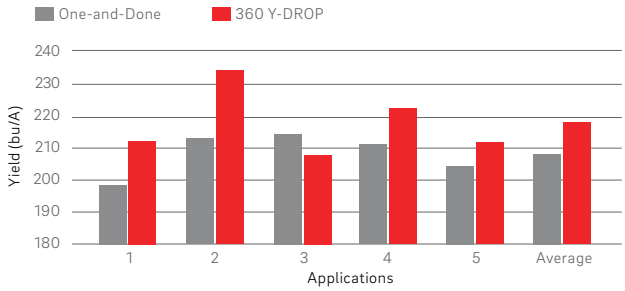
+ **Red Strips:** Grower put 150 lb. of N (NH3) upfront and came back with 55 lb. of N with 360 Y-DROP
+ **Green Strips:** One-and-Done strips that received 205 lb. of N (NH3) upfront and no additional N


Preplant N


Yield


360 Y-DROP Check

HD Grain 360 Y-DROP Trial



GRANT COUNTY, INDIANA
360 Y-DROP VS. ONE-AND-DONE

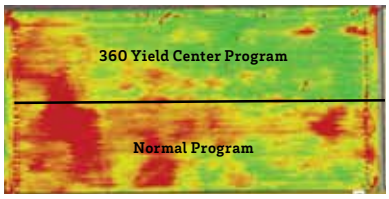
Agri-Green Farm Solutions from Grant County, Indiana, completed two trials to test a one-and-done N application to split-N application with 360 Y-DROP.

Trial One

+ **Normal Program:** 200 lb. of N at sidedress (NH3)
+ **360 Yield Center Prescription:** 125 lb. of N at sidedress (NH3) plus 60 lb. of N with 360 Y-DROP at V10

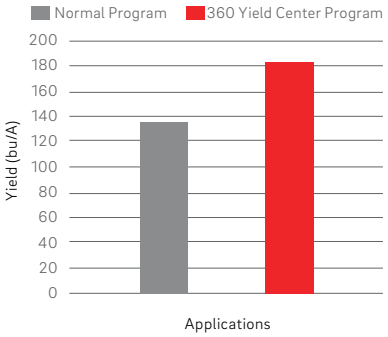
Trial Two

+ **Normal Program:** 45 lb. of N (planter-applied UAN) plus 140 lb. of N at sidedress (NH3)
+ **360 Yield Center Prescription:** 45 lb. of N (planter-applied UAN) plus 100 lb. of N sidedress (NH3) plus 40 lb. of N with 360 Y-DROP at V10

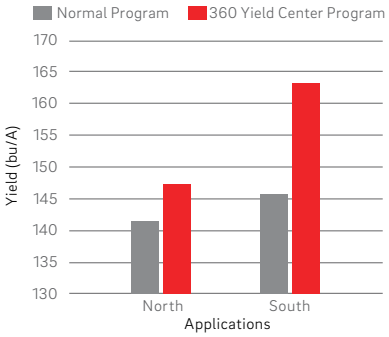


Yield Map – Trial One

System Trial One



System Trial Two



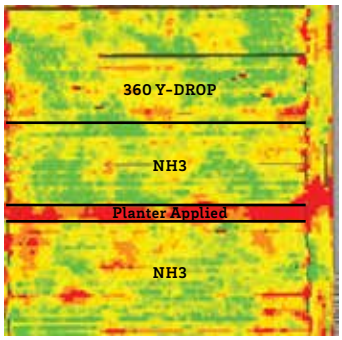
EATON, OHIO
360 Y-DROP VS. ONE-AND-DONE

This trial in Eaton, Ohio, compared 360 Y-DROP vs. NH3 one-and-done program.

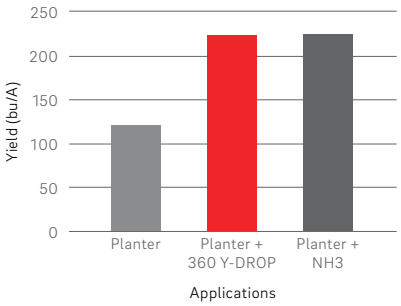
Trial N Applications

+ **Planter applied:** 75 lb.
+ **NH3:** 130 lb. at V5
+ **360 Y-DROP:** 90 lb. at V8

This field trial showed a better return on investment for the later-applied N via 360 Y-DROP.



360 Y-DROP vs. NH3 Sidedress

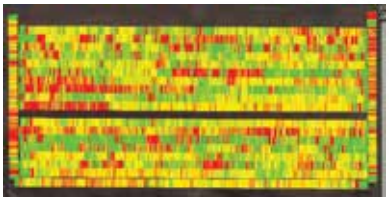


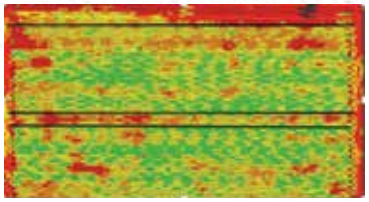
KENTLAND, INDIANA
360 Y-DROP VS. ONE-AND-DONE

This trial compared traditional sidedress with late-season N with 360 Y-DROP.

Trial Applications

+ Check Prescription
  – 25 units of N with the starter
  – 45 units of N as 28% pre-plant
  – 108 units of N as 28% at sidedress (V4)
+ 360 Y-DROP Prescription
  – 10-15 gal. of 28% UAN with the 360 Y-DROP at V10

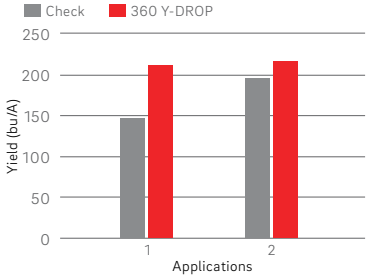




According to the grower, the 360 Y-DROP worked well overall. "We liked the flexibility of the 360 Y-DROP system," he said. "We saw anywhere from a 6 to 60 bu/A advantage with the 360 Y-DROP. We will be using the 360 Y-DROP in different ways on our farm in the future."

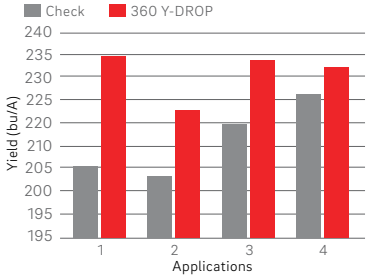
Trial – Bob

Check: 180 lb. of N pre-plant
360 Y-DROP: 45 lb. N (28% UAN)



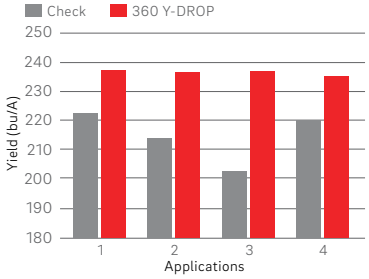
Trial – Montgomery

Check: 180 lb. of N pre-plant
360 Y-DROP: 40 lb. N (28% UAN)



Trial – Home

Check: 180 lb. of N pre-plant
360 Y-DROP: 55 lb. N (28% UAN)

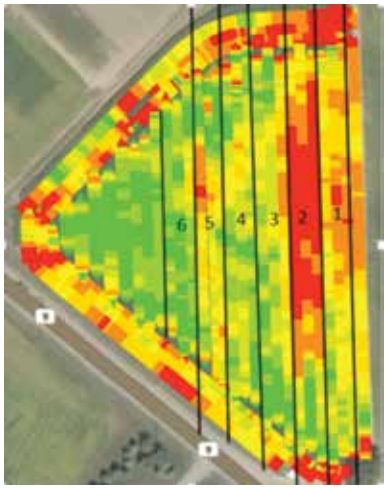


ONTARIO, CANADA
360 Y-DROP VS. ONE-AND-DONE

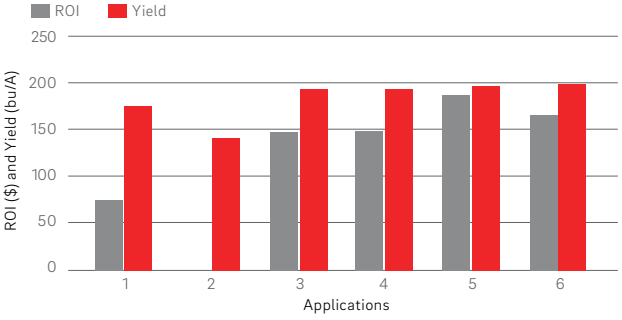
In this trial by Grand River Planters, the grower aimed to compare 360 Y-DROP vs. a one-and-done approach to see the difference N timing has on yield.

All the nitrogen applied was in the form of UAN 28% with no protectant product. Preplant nitrogen was sprayed on top and not incorporated.

The growing season started well with dry condition for planting in May, but June and July were extremely wet and ideal for N losses. The trial results greatly changed the way the grower approaches nitrogen on the farm and the grower will no longer use a one-and-done approach. A new yield level is now obtainable with 360 Y-DROP.



360 Y-DROP Trial



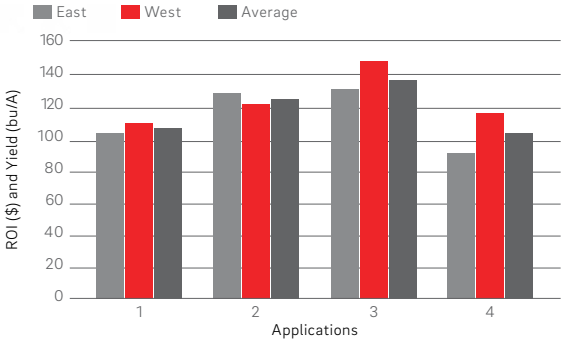
Pass	Preplant N (lb.)	360 Y-DROP @ V5 (lb.)	360 Y-DROP @ V10 (lb.)	Total N (lb.)	Yield	ROI	ROI over One-and-Done
1	75	60	105	240	175.9	508.8	74.6
2	150	0	0	150	141.9	434.3	NA
3	75	60	90	225	194.4	582.8	148.5
4	75	60	0	135	186.7	601.5	167.2
5	75	0	90	165	196.3	621.3	187.1
6	75	60	90	225	199.2	600.0	165.7

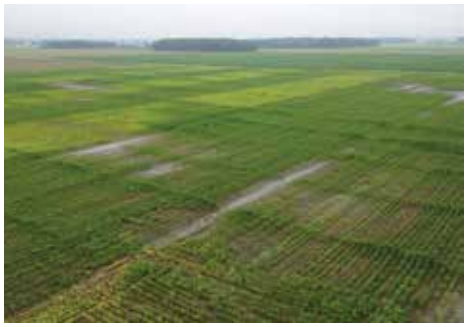
FORT WAYNE, INDIANA

360 Y-DROP VS. ONE-AND-DONE WITH NH3

Pass	Prescription
1	NH3: July 10
2	NH3: July 10; 360 Y-DROP: July 29
3	360 Y-DROP: July 10; 360 Y-DROP: July 29
4	360 Y-DROP: July 10

NH3 and 360 Y-DROP Trial





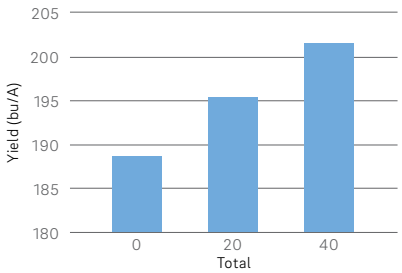
HUNTINGTON, INDIANA

360 Y-DROP VS. ONE-AND-DONE

The trial design was three rates of pre-plant nitrogen (190, 210, and 230) with three rates of N application with 360 Y-DROP (0, 20, and 40).

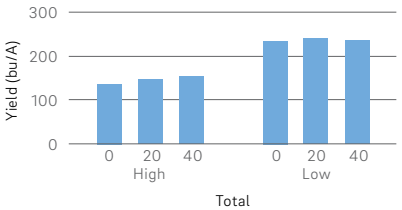
The Results Showed:

+ Regardless of pre-plant N application, 20 lb. and 40 lb. of nitrogen addition via 360 Y-DROP provided yield benefit over the control by 7 and 14 bushels, respectively (averaged over all field environments)
+ Increasing pre-plant nitrogen rate did not increase yield, but additions of N at V10 with 360 Y-DROP provided significant yield response
  - Application of 20 additional units of N (preplant) did not significantly increase yield over the 190 lb. N/acre rate
  - Applications of 20 and 40 units of N improved yields significantly in both preplant rates, but only in areas of predicted high nitrogen loss
  - Addition of 20 units of N to the 190 lb. N/acre preplant improved yield 10 bushels/acre over the control (no additional N), but also increased yield by 7 bushels over the 210 lb. N/acre preplant rate in areas of predicted high nitrogen loss
  - Average yield improvement at both preplant rates (190 and 210 lb. N/acre) was 15 bushels was adding an additional 40 units of N at V10

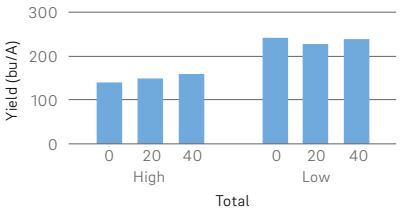


⊕ Additional nitrogen applied via 360 Y-DROP (V10), lb. N/acre.

Preplant 210 lb. N/acre



Preplant 190 lb. N/acre



⊕ Additional nitrogen applied via 360 Y-DROP (V10) and predicted nitrogen loss potential (designated by High or Low Loss).

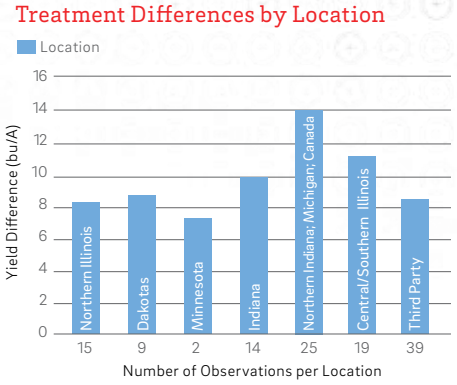
RESULTS FROM 2015 FIELD TRIALS

360 Y-DROP VS. COULTER

Growers who sidedress commonly use a sidedress tool bar with a coulter and place UAN in the center of the row. We tested many locations across the Corn Belt this year with this coulter practice vs. 360 Y-DROP. The differences between these two systems is mainly timing and placement.

360 Y-DROP on a self-propelled sprayer allows the grower to extend their window of application to the time when a corn plant is taking up the majority of N (V8-12), while most coulter systems run in the V2-V6 growth stages.

The other key difference is placement. A traditional coulter places N in the middle of the row. The disadvantage is it may take the plant time to take-up N via the roots and potentially have more exposure to leaching before reaching the roots. In comparison, 360 Y-DROP places N right next to the base of the plant where it moves down into the soil and the roots.



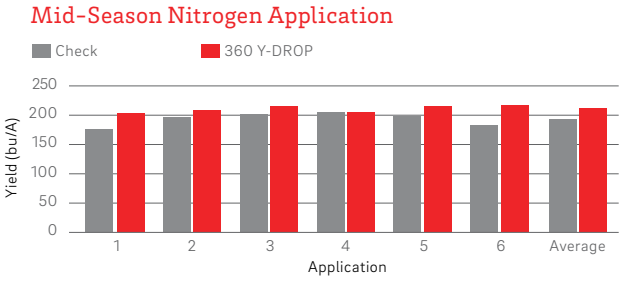
Some plots looked at both timing and placement while others applied both systems at the same time and focused on placement only. We are very encouraged by these results. We also have a 360 Y-DROP system that replaces the coulter on the tool bar to allow a farmer to take advantage of the precision placement on his sidedress bar.

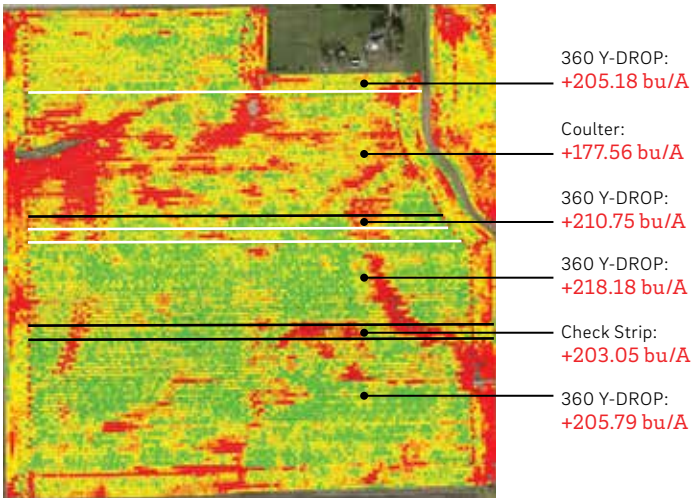
MYRTLE, MINNESOTA

360 Y-DROP VS. COULTER

This trial in Myrtle, Minnesota, aimed to show the impacts of using 360 Y-DROP for mid-season nitrogen application compared with using a coulter application.

Trials	Spring N Preplant – UAN (lb.)	V5 Coulter Sidedress – UAN (lb.)	V12 360 Y-DROP – UAN (lb.)	Yield (bu/A)
Check	130	60	NA	195
360 Yield Center System	130	60	70	213





PANA, ILLINOIS

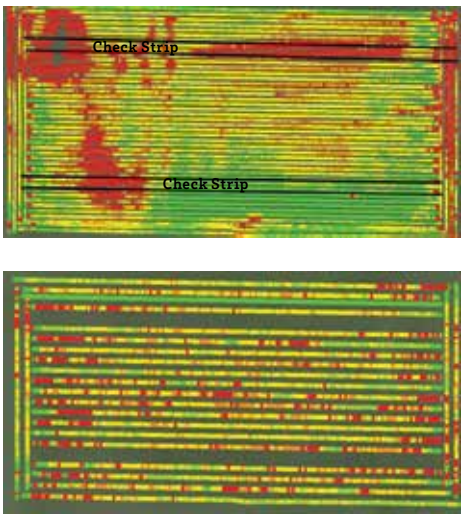
360 Y-DROP VS. COULTER

In this field trial, the grower in Pana, Illinois, applied his normal split-application nitrogen program – NH3 at the rate of 140 lb. of N in the fall with N-serve and sidedressed in-season with his coulter bar at V5 with 70 lb. of N.

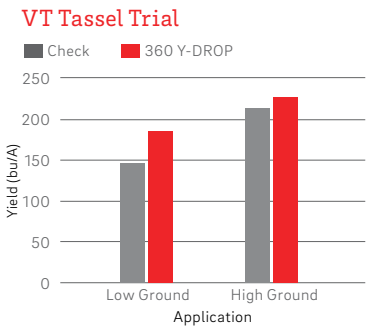
+38 bu/A
Advantage on west side with poorer drainage

While scouting his fields in early July, the grower noticed areas of the field were showing visible nitrogen deficiencies. Even though they had applied 210 lb. of N already – via fall application and V5 coulter application – the heavy rains had caused significant nitrogen loss to occur.

Shortly after pollination, the grower applied an additional 35 lb. of N with 360 Y-DROP. Since the grower had never applied N this late and were unsure of the potential yield response, he decided to leave two check strips with no additional N application. He left a check strip on the east side of the field that has a little higher elevation and generally better drainage, and left the other check strip in the field on the west side that is more poorly drained.



The yield results showed a bump on both sides of the field. On the east side where there is better drainage, we had a 12 bushel per acre increase, but on the west side which is more poorly drained we picked up approximately 38 bushels per acre. Applying N later in the season allowed the corn to retain more kernels and continue to produce more sugars throughout grain fill, which resulted in a significant yield increase across the field.



DANVILLE, ILLINOIS

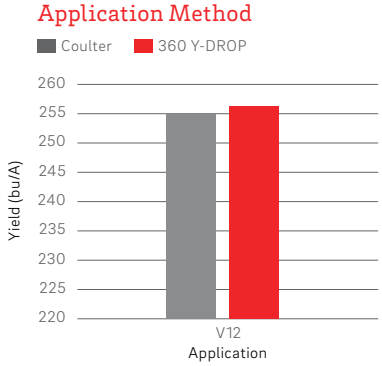
360 Y-DROP VS. COULTER

This trial was conducted on the farm of Mark Shortz, the manager of 360 Water Solutions, in Danville, Illinois. The trial aimed at comparing 360 Y-DROP mid-season N applications with a coulter application.

Pre-plant nitrogen on the field was 130 lb. weed-and-feed. Both the 360 Y-DROP and coulter applications were made across the entire field in tandem. Both mid-season N applications were 85 lb. and completed at V12.

Another variable that can't be quantified in trial data is that most coulter toolbars that can attach to highboy sprayers don't go above 40 ft. wide (15 row, 30 in. rows). So, by using 360 Y-DROP, Shortz also gained application efficiency.

The 360 Y-DROP N application yielded 256.2 bu/A compared with 255 bu/A with the coulter.



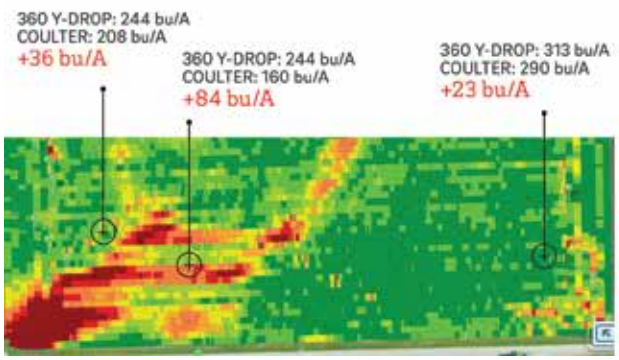
TREMONT, ILLINOIS

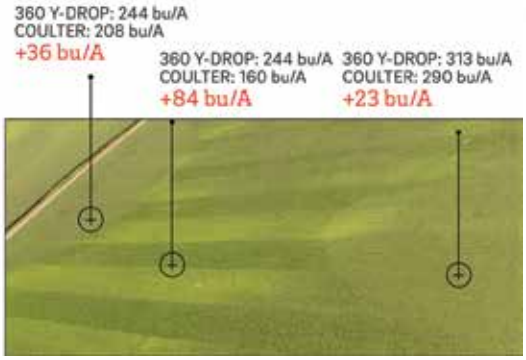
360 Y-DROP LATE-SEASON NITROGEN APPLICATION VS. COULTER

This side-by-side trial was conducted on a field in central Illinois and was highlighted during Proving Grounds 2015. At Proving Grounds, Gregg Sauder shared hand check yield numbers in specific areas in the field and the harvest numbers are now in.

The trial aimed at comparing N timing and placement with 360 Y-DROP versus a coulter. The coulter N application was done at V6 (first week of June 2015) and the 360 Y-DROP N application was at V16 (first week in July 2015). Both sidedress applications were 150 lb. of N. In both trial systems, 100 lb. of N was applied as a base application on the whole field, including 30 lb. with the planter (2x2) and 70 lb. of weed-and-feed worked in with a vertical tillage tool just prior to planting.

The aerial photo at far right (same as the one shown at Proving Grounds) and the yield map show actual harvest data and yield results from the points highlighted at Proving Grounds.





CHEBANSE, ILLINOIS

360 Y-DROP VS. COULTER

This trial was conducted on the field of Donnie Benoit with Synergy Seeds in Chebanse, Illinois. It compared coulter nitrogen application with 360 Y-DROP application.

The trial system included:

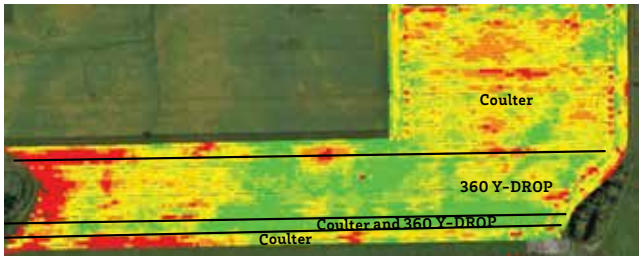
+ Pre-plant nitrogen: 90 lb. of N with weed-and-feed incorporated (32% UAN)
+ Coulter Application: 80 lb. of N (32% of UAN) at V4
+ 360 Y-DROP Application: 110 lb. of N (32% of UAN) at VT

The results showed 360 Y-DROP beating the coulter application by 30 bu/A but when Benoit coupled a coulter application with a 360 Y-DROP application, he yielded 20 bu/A more than with 360 Y-DROP alone. The results demonstrates that timing makes a big difference and 360 Y-DROP can widen your window of application to aid in later season N application.

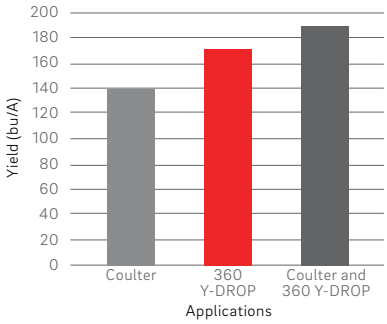
"This field trial showed me the value of making sure there is enough N later in the season when corn is in salvageable condition," said Benoit. "In this case, the 360 Y-DROP strip yielded above crop insurance guarantees, whereas the earlier timing with the coulter application did not."

The late application did well enough that it raises the question: Would 30 to 50 lb. of additional N on the coulter application have been a good choice in this field too and would it have been even higher yielding than the 360 Y-DROP strip? Benoit plans to use 360 SOILSCAN in these situations in the future to help give him that answer.

Due to fighting ground conditions that were too wet for any type of field work until first week of July, Benoit thought about abandoning the planned 360 Y-DROP tests. "I certainly was in a crop insurance mindset so spending any more money was a hard thing to do. But, I ended up moving ahead with the plan for the sake of education. I added an additional 30 lb. over my intended 80 lb. 360 Y-DROP app due excessive rain."



N Application Method and Timing



Benoit thinks 80 lb. with 360 Y-DROP may have been sufficient and would have been more economical and more of an "apples to apples" comparison by making timing the only variable.

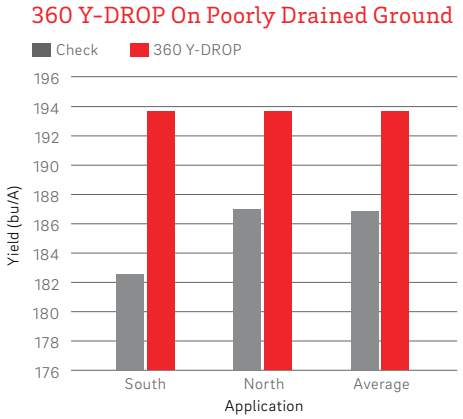
SHELDON, NORTH DAKOTA
360 Y-DROP VS. COULTER

Justin Halvorson in Sheldon, North Dakota, compared 360 Y-DROP with coulter N application. The farm is very wet every year with sandy loam soils, a high water table and flat ground. The farm struggles to drain the field every year.

Nitrogen Applications

+ Check: Pre-plant nitrogen 135 lb. of spring N at V4 with coulter
+ 360 Y-DROP Application: Pre-plant nitrogen 135 lb. of spring N, 30 lb. of N at V4 with coulter, 45 lb. of N at V12 with 360 Y-DROP

Halvorson experienced a gain of 6.7 bu/A with the additional N applied with 360 Y-DROP.

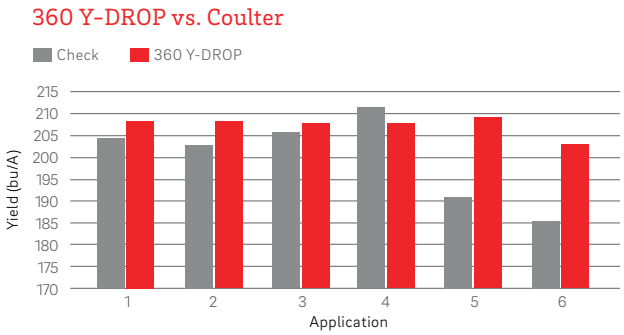


OTTERBEIN, INDIANA
360 Y-DROP VS. COULTER

This trial in Otterbein, Indiana, compared coulter N application at V5 with both a coulter application at V5 plus 360 Y-DROP N application at V10.

Nitrogen Applications

+ Pre-plant nitrogen: 60 lb. of N via 2x2 at planting
+ Coulter Application: 120 lb. of N at V5
+ 360 Y-DROP Application: 60 lb. with coulter at V5 plus 60 lb. N with 360 Y-DROP @ V10



SOUTHERN MICHIGAN
360 Y-DROP MID-SEASON NITROGEN APPLICATION VS. COULTER

This trial was conducted on the farm of Stan Smith in Southern Michigan, and was shared during Proving Grounds 2015. The side-by-side trial aimed at comparing the yield impacts of traditional sidedress application at V6 with a coulter bar with a mid-season N application at V10 with 360 Y-DROP. The same amount of nitrogen was used for both applications – timing and placement were the only variables.

Farm and Trial Details

+ Soil: Blount silty loam; 0 to 4% slope; 9 CEC; conventional till
+ Planting: May 1, 2015; DKC 54-38; 33,000 population
+ Nitrogen treatment
  - Applied equally to both sides of a man-made ditch at 60 lb. N/A 28% with weed-and-feed at planting
  - Coulter treatments applied on June 8 @ V6 with 105 lb. N as 28%
  - 360 Y-DROP treatments applied on June 26 @ V10 with 105 lb. N as 28%
  - Both treatments received the same total lb. nitrogen

+56.3 bu/A
Average advantage with 360 Y-DROP

By applying N later in the season and placing N over a majority of the root system – with N application at V10 with 360 Y-DROP – this grower experienced an average of a 56.3 bu/A advantage. That's an additional $225 per acre.

RESULTS FROM 2015 FIELD TRIALS

NITROGEN RECOMMENDATIONS

TREMONT, ILLINOIS
MID-SEASON NITROGEN RECOMMENDATIONS

There are a lot of ways to make mid-season N management decisions: modeling, in-season measurement, gut-feel. Ideally, no matter what option you use, you have your agronomist alongside you. In this trial, we put several different N recommendation options to the test in Tremont, Illinois.

Base N Applications

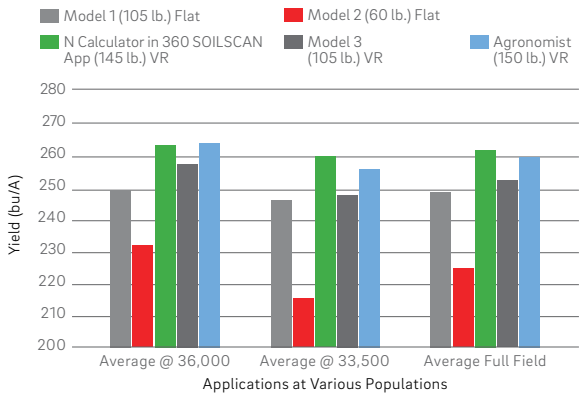
+ Pre-plant nitrogen: 70 lb. via weed-and-feed
+ Planter-applied nitrogen: 30 lb. 2x2

Nitrate tests were taken with 360 SOILSCAN at V8. Much of the field was well over 30 ppm at that time. The rain began at that time as well and we received just under 20 inches of rain in a couple weeks.

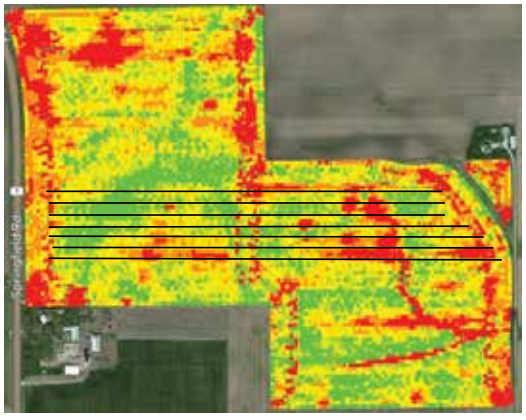
We then decided to apply 60 lb. of N (aerial-applied urea). After the urea applications, our nitrate samples were still below 15 ppm at V12 because of saturated conditions. When looking at the computer models they were estimating that we had more N than what we measured. Our assumption is that the models underestimated the amount of nitrogen we lost in that amount of time.

After taking 360 SOILSCAN readings, we came back at V14 with 360 Y-DROP and made the applications according to the model and measuring tools we used. We used the N Needs Calculator for the 360 SOILSCAN measurement (included in the app). We did input the 60 lb. of N urea into all these models as well. Model 2 was not calling for any additional N. This strip measured 30ppm at V8 and had no additional N applied due to recommendation from the model.

Nitrogen Model



Nitrogen as Applied



Yield Map

⊕ For the nitrogen recommendation trial, various nitrogen recommendation systems were tested – nitrate measuring, computer software models and local agronomist recommendations.

RESULTS FROM 2015 FIELD TRIALS

360 UNDERCOVER® IN SOYBEANS AND CORN

We have traditionally applied our crop protection products – fungicides, insecticides, foliar nutrients, etc. — from over the top of the crop. The challenge is that with dense crop canopies, it can sometimes be difficult to get the product down deep in the canopy where that product is most beneficial. Some of the diseases we deal with start from the debris on the soil surface, starting at the bottom of the plant and working their way up, so getting coverage lower on the plant is beneficial. Getting coverage on the ear leaf and above in corn or lower and inner part of the soybean stalk for many of these diseases makes sense. That's where 360 UNDERCOVER comes in. It mounts on the 360 Y-DROP riser and sprays from within the canopy out and up to get great coverage where you want it. You can have up to four nozzles in the 360 UNDERCOVER unit to customize how you want to apply in your crop (corn, soybeans, cotton, wheat, sugarbeets, etc.). We are excited to share some of the great results we saw this year in the field, particularly in fields where these pests were the limiting factor.

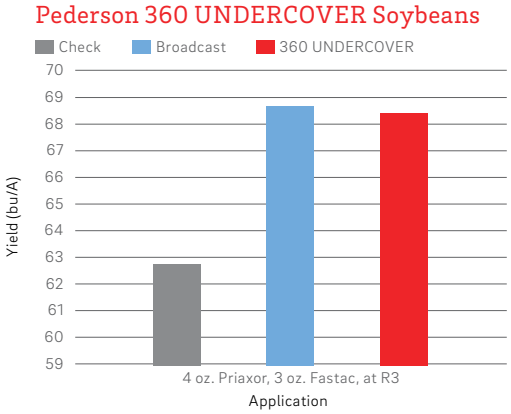
LAKE MILLS, IOWA

360 UNDERCOVER IN SOYBEANS

In this fungicide and insecticide application trial, the grower tested three application prescriptions on his soybean field:

- Check or no fungicide application
- Conventional broadcast or over the top application
- Application under the canopy with 360 UNDERCOVER

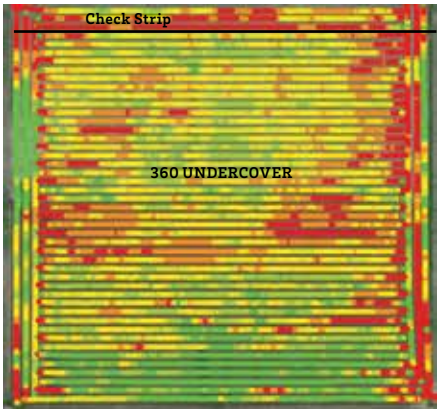
Both the conventional and 360 UNDERCOVER applications were made at R3 and included both a fungicide – 4 oz. of Priaxor® – and an insecticide – 3 oz. of Fastac® EC .

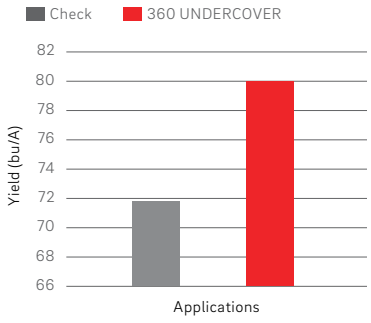


TEUTOPOLIS, ILLINOIS

360 UNDERCOVER IN SOYBEANS

This insecticide and fungicide trial compared application methods of 360 UNDERCOVER with a check strip of no application. Results showed a 8.16 bu/A for the application with 360 UNDERCOVER.



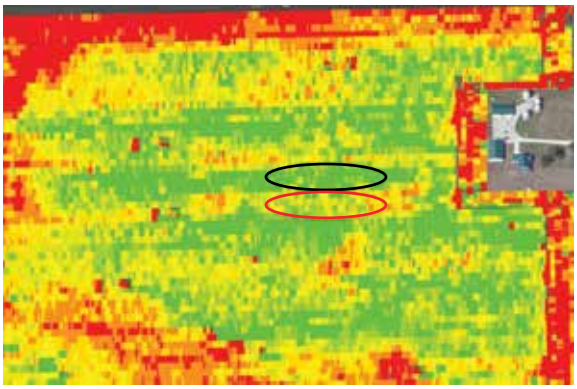


+8.16 bu/A
Advantage with 360 UNDERCOVER vs. no application

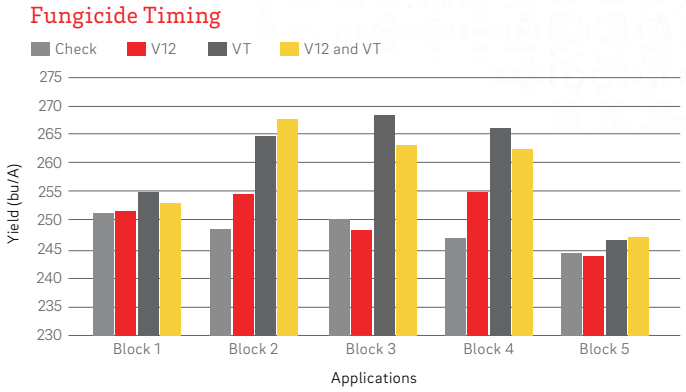
DANVILLE, ILLINOIS

360 UNDERCOVER IN CORN

This trial by Mark Shortz in Danville, Illinois, shows yield increasing as 360 UNDERCOVER was used in multiple applications to address grey leaf spot. The grower says he was most impressed that, even with all those passes and a wet spring, 360 UNDERCOVER still did the job with little plant damage. They were able to cover all their acres in an economical manner. The yield response to the fungicide application was amazing compared to what they were used to with the airplane.



⊕ In the yield map you can see the 10-bushel variability in each block where the VT applications were made (circled in black) and where they weren't (circled in red).



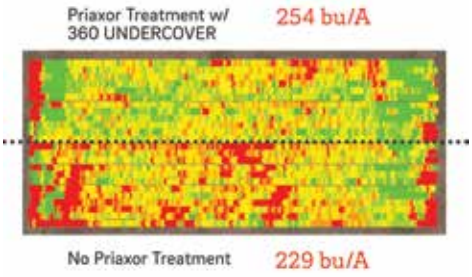
⊕ Here is a brief summary of the return on investment with these applications. Although there was a positive yield response to all of the applications, in this particular trial, a single VT application was the most economical. One thing to note is Block 1 and Block 5 were two areas of low elevation where nitrogen loss may have been the limiting factor rather than plant health. Hence the yield response there.

MOWEAQUA, ILLINOIS

360 UNDERCOVER IN CORN

This fungicide side-by-side trial was conducted in Moweaqua, Illinois, on the farm of Aaron and Duane Downs.

The trial compares Priaxor fungicide application made with 360 UNDERCOVER at V12 with an untreated check. Weighed checks showed a 25 bu/A advantage for Priaxor applied with 360 UNDERCOVER (254 bu/A for 360 UNDERCOVER application of Priaxor versus 229 bu/A for untreated check).



+25 bu/A
Advantage with Priaxor via 360 UNDERCOVER

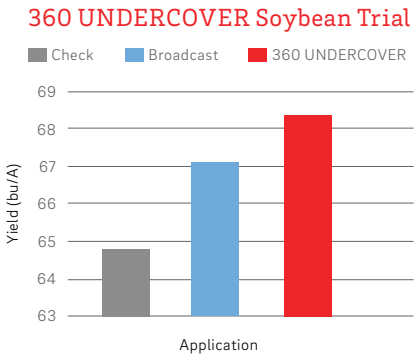
DEKALB, ILLINOIS

360 UNDERCOVER IN SOYBEANS

This fungicide trial in DeKalb, Illinois, was conducted on the farm of Matt Foes, regional agronomy manager for 360 Yield Center. The trial aimed to compare fungicide application on soybeans using two different application methods – broadcast and 360 UNDERCOVER – and a check.

FORTIX® fungicide was applied at R2 at 12 gal. per acre on July 15.

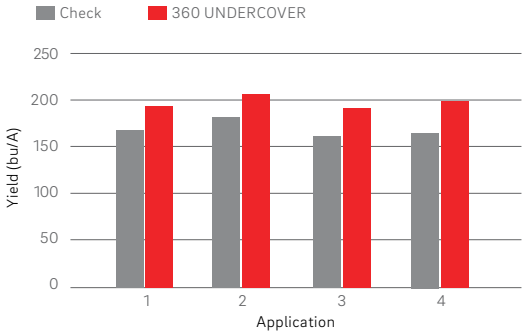
You can see the average yield across the field in the chart. Utilizing 360 UNDERCOVER resulted in an average of 1.3 bu/A over broadcast application and 3.6 bu/A over no fungicide application.



WHITEFORD, OHIO
360 UNDERCOVER IN CORN

This trial was conducted on the farm of Travis Harrison in Whiteford, Ohio, and compared fungicide treatment with 360 UNDERCOVER to a check. On average the strips treated using 360 UNDERCOVER beat untreated strips 197.94 bu/A to 169 bu/A – a gain of 28.94 bu/A.

Fungicide Treatment in Corn

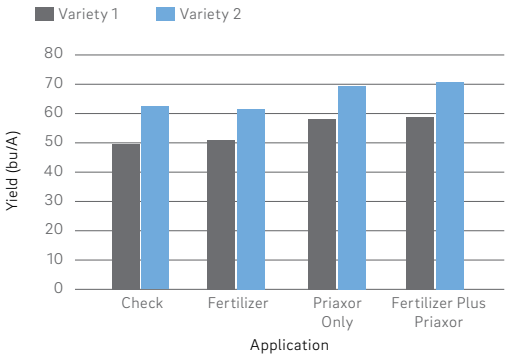


+28.9 bu/A
Advantage with 360 UNDERCOVER vs. no application

ONTARIO, CANADA
360 UNDERCOVER IN SOYBEANS

This trial was done by Greg Millard of Panmure Farms. In this area of Canada, white mold can be a big problem, so growers often are forced to spray multiple times to suppress such outbreaks. With its superior canopy penetration, 360 UNDERCOVER offered a better alternative. Greg did it in one pass. "We treated it all with 360 UNDERCOVER," he says. "Up here, we usually have to spray twice. This was only sprayed once at a higher rate. I was after great coverage, and was super impressed with the results. I'm going to do more 30-inch beans next year."

360 UNDERCOVER Soybean Trial



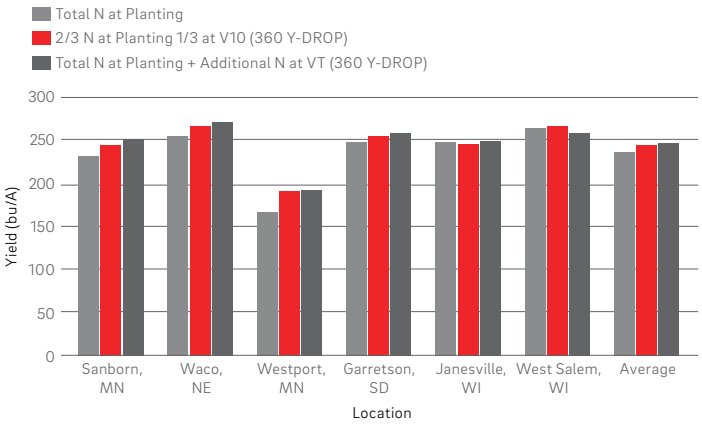
"I was after great coverage, and was super impressed with the results. I'm going to do more 30-inch beans next year"

– Greg Millard, Panmure Farms

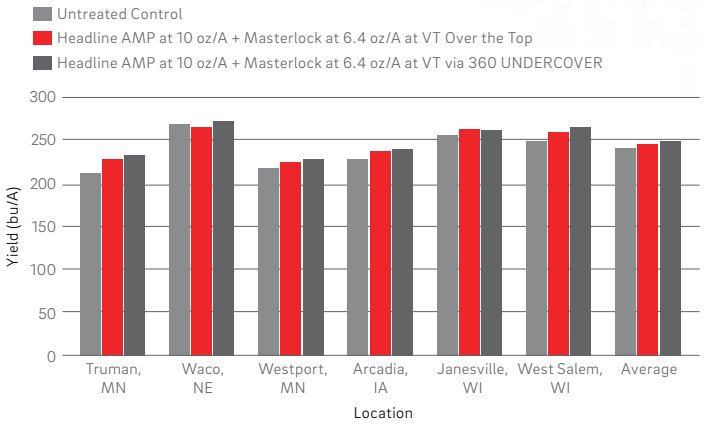
INDUSTRY DATA

WINFIELD ANSWER PLOT® TRIALS

Nitrogen Application Methods



Fungicide Application Methods



Nitrogen Application Methods

Overall, there was a benefit to splitting nitrogen applications, in both yield and ROI. 9.4 bu/A advantage of split N with 360 Y-DROP vs. all up front (same total #'s of N, approximately 250#, varied slightly by location).

- There were only two of six locations where going in at tassel and applying an additional 40 units paid off. Measuring would help us make the decision if another application was warranted (if the N tank in the soil had enough to finish the crop).
- Split applications with 360 Y-DROP had an 83% win rate in the Answer Plot locations.
- We believe that N wasn't the limiting factor at the Janesville, Wisconsin location. Assuming we had some loss from the preplant application, we likely could have reduced our total N with split application to feed the crop when it needed N and subject it to less time in the environment for loss.
- We believe the biggest take-home from these plots is how important it is to measure in season to understand what you have to maximize nitrogen utilization efficiency and ROI. 360 SOILSCAN can be the tool to help you accomplish that.

Fungicide Application Trials

Across six locations when using 360 UNDERCOVER at VT (Headline AMP® Fungicide at 10 oz/A + MasterLock® at 6.4 oz/A) we added roughly 11 bushel over non-treated check.

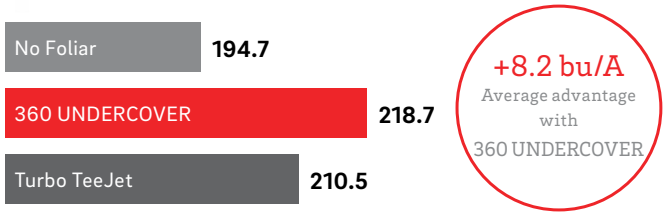
- When comparing that same 360 UNDERCOVER application with the conventional over the top application we were able to add over 3 bushel to the VT application.
- Where we saw advantages to these plant health products (either due to environment or hybrid response), we conclude that getting coverage with 360 UNDERCOVER, where the plant needs it, increased both yield and ROI.

RESEARCH DATA

AGROLIQUID® RESEARCH

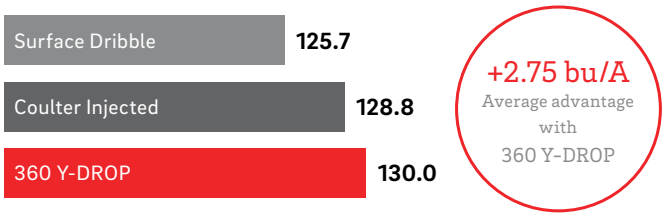
All research conducted at the North Central Research Station.

Foliar Methods of Application on Corn



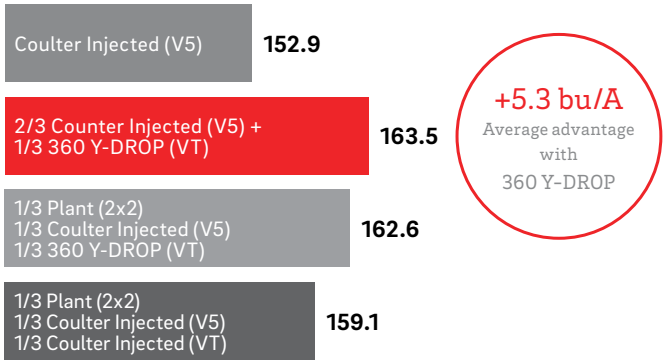
Foliar methods of application on corn included: 2 gal. FertiRain™ and 12 oz. Headline AMP applied at VT. The total spray volume was 10 gpa. All treatments received 4 gal. Pro-Germinator® + 6 gal. Sure-K® + 2 qt. Micro 500™ (IF); 52 gal. High NRG-N™ + 4 gal. Kalibrate™ (SD).

Split Nitrogen Methods of Application Comparison in Corn



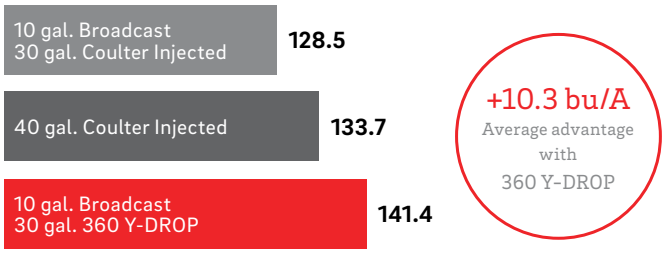
All treatments received 5 gal. Pro-Germ. + 4 gal. Sure-K + 2 qt. Micro 500 + 2 qt. eNhance™ (IF Tube).

Nitrogen Source and Method of Application Comparison



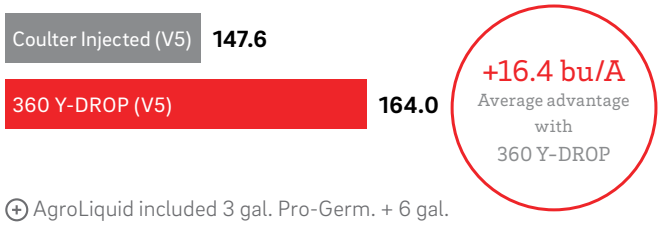
All applications included 39 gal. High NRG-N.
CEC: 10.7 pH: 6.5 OM: 2.3%

Split Nitrogen Methods of Application Comparison in Corn



All treatments received 5 gal. Pro-Germ. + 4 gal. Sure-K + 2 qt. Micro 500 + 2 qt. eNhance (IF Tube); N sources High NRG-N.
CEC: 8.6 pH: 7.2 OM: 1.6%

Comparison of Nitrogen Methods of Application



AgroLiquid included 3 gal. Pro-Germ. + 6 gal. Sure-K + 2 qt. Micro 500 (IF Tube)
20 gal. High NRG-N (2x2); 19 gal. High NRG-N (V5).
CEC: 6.2 OM: 1.5%

ADDITIONAL TRIALS BY TRIAL TYPE

360 Y-DROP VS. ONE-AND-DONE

CONGER, MINNESOTA		
360 Y-DROP vs. One-And- Done	150# NH3 in spring, 7 gal. 10-34-0 in spring	200.60
	90# NH3 in spring, 7 gal. 10-34-0 in spring, 360 Y-DROP 60# of 28% UAN on 7/2/15	199.86
	150# NH3 in spring, 7 gal. 10-34-0 in spring	197.53
CONGER, MINNESOTA		
360 Y-DROP vs. One-And- Done	150# NH3 in spring, 7 gal. 10-34-0 in spring	201.85
	90# NH3 in spring, 7 gal. 10-34-0 in spring, 360 Y-DROP 60# of 28% UAN on 7/2/15	205.20
	150# NH3 in spring, 7 gal. 10-34-0 in spring	202.85
CLEMENTS, MINNESOTA		
360 Y-DROP vs. One-And- Done	360 Y-DROP liquid UAN (VT) 50#	230.00
	Check	233.00
CLEMENTS, MINNESOTA		
360 Y-DROP vs. One-And- Done	360 Y-DROP liquid UAN (VT) 50#	198.00
	Check	200.00
CLEMENTS, MINNESOTA		
360 Y-DROP vs. One-And- Done	360 Y-DROP liquid UAN (VT) 50#	215.34
	Check	209.84
	360 Y-DROP liquid UAN (VT) 50#	208.34
	Check	206.44
MOWEAQUA, ILLINOIS		
360 Y-DROP vs. One-And- Done	36# Nitrogen with DAP on 9/30/14, 165# NH3 with N-Serve on 10/28/14, 360 Y-DROP 30# of 32% on 6/15/15 at V14	203.79
	36# Nitrogen with DAP on 9/30/14, 165# NH3 with N-Serve on 10/28/14	200.00
MOWEAQUA, ILLINOIS		
360 Y-DROP vs. One-And- Done	360 Y-DROP 25# liquid UAN at V14	237.23
	360 Y-DROP 25# liquid UAN at V14	232.28
	No 360 Y-DROP	222.37
	360 Y-DROP 25# liquid UAN at V14	233.41
	360 Y-DROP 60# liquid UAN at V14	239.11
	360 Y-DROP 25# liquid UAN at V14	234.80
PRIMGHAR, IOWA		
360 Y-DROP vs. One-And- Done	Check 150# Preplant N	263.8
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	266.1
	Check 150# Preplant N	262.6
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	267.2
	Check 150# Preplant N	270.8
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	267.5
	Check 150# Preplant N	261
	Check 150# Preplant N	232.7
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	243.6
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	251.3
	Check 150# Preplant N	236.3
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	247.6
	Check 150# Preplant N	233.7
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	276.8
	Check 150# Preplant N	242.8
	Check 150# Preplant N	245.3
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	263.5

PRIMGHAR, IOWA (continued)		
360 Y-DROP vs. One-And- Done	Check 150# Preplant N	254.4
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	273.9
	Check 150# Preplant N	241.6
	360 Y-DROP 150# Preplant N + 85# N with 360 Y-DROP (V12)	252.7
MANNING, IOWA		
360 Y-DROP vs. One-And- Done	180# Preplant N Spring Applied with Stabilizers	198.45
	180# Preplant N Spring Applied with Stabilizers, 360 Y-DROP 50# liquid UAN at V10	213.33
TRIVOLI, ILLINOIS		
360 Y-DROP vs. One-And- Done	360 Y-DROP 55# liquid UAN	186.78
	Check	175.00
	360 Y-DROP 85# liquid UAN	200.12
	360 Y-DROP 55# liquid UAN	198.35
	360 Y-DROP 60# liquid UAN	197.58
	360 Y-DROP 45# liquid UAN	176.77
	Check	166.58
	360 Y-DROP 75# liquid UAN	198.31
	360 Y-DROP 50# liquid UAN	206.01
	Check	170.89
	360 Y-DROP 45# liquid UAN	204.70
	360 Y-DROP 45# liquid UAN, no fungicide	211.33
	360 Y-DROP 45# liquid UAN	196.54
	360 Y-DROP 45# liquid UAN, no fungicide	197.60
TRIVOLI, ILLINOIS		
360 Y-DROP vs. One-And- Done	360 Y-DROP 70# liquid UAN	212.55
	360 Y-DROP 10 gal. liquid UAN	196.63
	Check	173.22
	360 Y-DROP 70# liquid UAN	197.98
	360 Y-DROP 70# liquid UAN	191.96
	360 Y-DROP 70# liquid UAN	201.44
	360 Y-DROP 70# liquid UAN	190.20
	360 Y-DROP 70# liquid UAN	186.38
	360 Y-DROP 70# liquid UAN	199.41
	360 Y-DROP 70# liquid UAN	188.98
	360 Y-DROP 70# liquid UAN	190.67
	360 Y-DROP 70# liquid UAN	203.83
TRIVOLI, ILLINOIS		
360 Y-DROP vs. One-And- Done	360 Y-DROP 70# liquid UAN	219.95
	Check	180.10
	360 Y-DROP 70# liquid UAN	222.50
	Check	165.20
ROCKFORD, ILLINOIS		
360 Y-DROP vs. One-And- Done	Check	161.61
	360 Y-DROP 55# UAN at V10	218.11
YORK, ONTARIO, CANADA		
360 Y-DROP vs. One-And- Done	Preplant 170 #	213.6
	Preplant 170#, 360 Y-DROP VT 50# UAN	221
	Preplant 170#, 360 Y-DROP VT 50# UAN	219.9
	Preplant 170 #	216.4
GIBSONBURG, OHIO		
360 Y-DROP vs. One-And- Done	360 Y-DROP	217.5
	Check	209.6

360 Y-DROP VS. COULTER

CLEMENTS, MINNESOTA		
360 Y-DROP vs. Coulter	Coulter liquid UAN	230
	360 Y-DROP liquid UAN	233
TIPPERCANOE COUNTY, INDIANA		
360 Y-DROP vs. Coulter	60# of N at planting, Coulter bar 60# liquid UAN, 360 Y-DROP 60# liquid UAN at VT	223
	60# of N at planting, Coulter bar 120# liquid UAN	210
MELVIN, ILLINOIS		
360 Y-DROP vs. Coulter – Same Timing	Coulter liquid UAN	222.13
	360 Y-DROP liquid UAN	217.35
	Coulter liquid UAN	215.71
	Coulter liquid UAN	222.83
	360 Y-DROP liquid UAN	224.39
	Coulter liquid UAN	236.03
MELVIN, ILLINOIS		
360 Y-DROP vs. Coulter – Same Timing	Coulter liquid UAN	239.68
	360 Y-DROP liquid UAN	243.09
	Coulter liquid UAN	250.88
MELVIN, ILLINOIS		
360 Y-DROP vs. Coulter – Same Timing	Coulter liquid UAN	250.7
	360 Y-DROP liquid UAN	254.99
	Coulter liquid UAN	252.03
BUTLER, INDIANA		
Coulter vs. Coulter and 360 Y-DROP	60# Preplant N + Coulter @ V5 (120#), 360 Y-DROP @ V8 (60#)	140
	60# Preplant N + Coulter @ V5 (120#)	113
	60# Preplant N + Coulter @ V5 (120#), 360 Y-DROP @ V8 (60#)	134
CALEDONIA, ONTARIO, CANADA		
360 Y-DROP vs. Coulter	50# Preplant + 90# Coulter (V5)	150.84
	50# Preplant + 90# 360 Y-DROP (V8)	153.53
	50# Preplant + 90# 360 Y-DROP (V8)	153.87
	50# Preplant + 90# Coulter (V5)	151.2
	50# Preplant + 90# Coulter (V5) + 30# 360 Y-DROP (V8)	170.41
ITHACA, MICHIGAN		
Sidedress NH3 + 360 Y-DROP	60# Preplant N + 120# Sidedress NH3 (V5) + 45# 360 Y-DROP UAN (V8)	197.9
	60# Preplant N + 120# Sidedress NH3 (V5) + 45# 360 Y-DROP UAN (V8)	182.5
SHELDON, INDIANA		
360 Y-DROP vs. Coulter	180# Preplant + 360 Y-DROP 30# (V12)	165.77
	180# Preplant + Coulter 30# (V4)	181.83
	180# Preplant + 360 Y-DROP 30# (V12)	153.53
	180# Preplant + Coulter 30# (V4)	142.44

360 UNDERCOVER IN CORN

PRIMGHAR, IOWA		
360 UNDERCOVER – Corn	Check	243.42
	360 UNDERCOVER -Fungicide and Insecticide (VT)	273.8
	360 UNDERCOVER -Priaxor + Foliar V16 and Fungicide Just Headline AMP VT (No Insecticide)	242.25
	360 UNDERCOVER -Foliar V16 + Fungicide and Insecticide (VT)	280.09
	360 UNDERCOVER -Fungicide and Insecticide	266.7
CALEDONIA, ONTARIO, CANADA		
360 UNDERCOVER – Corn	360 UNDERCOVER -Fungicide VT	180.78
	Untreated	156.56

NITROGEN APPLICATION

GRIDLEY, ILLINOIS		
Nitrogen Timing and Rate	Coulter liquid UAN	230
	360 Y-DROP 20 gal. liquid UAN on 6/6/15, 360 Y-DROP 20 gal. liquid UAN on 7/6/15	235.02
	360 Y-DROP 33 gal. liquid UAN on 6/6/15	239.79
	360 Y-DROP 20 gal. liquid UAN on 6/6/15, 360 Y-DROP 20 gal. liquid UAN on 7/6/15	243.29
GRIDLEY, ILLINOIS		
Nitrogen Timing and Rate	360 Y-DROP 20 gal. liquid UAN on 6/21/15	240.3
	360 Y-DROP 35 gal. liquid UAN on 6/6/15	230.6
GRIDLEY, ILLINOIS		
Nitrogen Timing and Rate	360 Y-DROP 17 gal. liquid UAN on 6/6/15, 360 Y-DROP 24 gal liquid UAN on 7/6/15	201.5
	360 Y-DROP 24 gal. liquid UAN on 6/6/15	158.1
	360 Y-DROP 24 gal. liquid UAN on 6/6/15, 360 Y-DROP 11 gal. liquid UAN on 7/6/15	202.3
	360 Y-DROP gal. liquid UAN on 6/6/15, 360 Y-DROP 24 gal. liquid UAN on 7/6/15	218.7
SADORUS, ILLINOIS		
Nitrogen System	360 System 190# of N	257.90
	Climate 155# of N	242.80
	UP 180# of N	242.20
SUTHERLAND, IOWA		
Nitrogen System	60# N Chicken Litter, 110# UAN Weed-and-Feed, Comm rec of 53# of N 32% UAN applied at V14	263.94
	60# N Chicken Litter, 110# UAN Weed-and-Feed, +25% of Comm rec so 66# of N 32% UAN applied at V14	259.42
	60# N Chicken Litter, 110# UAN Weed-and-Feed, -25% of Comm rec so 40# of N 32% UAN applied at V14	258.22
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Fixed rate of 75# of N 32% UAN applied at V14	257.42
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Comm rec of 53# of N 32% UAN applied at V14	258.35
	60# N Chicken Litter, 110# UAN Weed-and-Feed, +25% of Comm rec so 66# of N 32% UAN applied at V14	253.34
	60# N Chicken Litter, 110# UAN Weed-and-Feed, -25% of Comm rec so 40# of N 32% UAN applied at V14	257.40
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Fixed rate of 75# of N 32% UAN applied at V14	257.66
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Comm rec of 53# of N 32% UAN applied at V14	262.42
	60# N Chicken Litter, 110# UAN Weed-and-Feed, +25% of Comm rec so 66# of N 32% UAN applied at V14	260.91
	60# N Chicken Litter, 110# UAN Weed-and-Feed, -25% of Comm rec so 40# of N 32% UAN applied at V14	262.07
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Fixed rate of 75# of N 32% UAN applied at V14	264.07
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Comm rec of 53# of N 32% UAN applied at V14	265.16
	60# N Chicken Litter, 110# UAN Weed-and-Feed, +25% of Comm rec so 66# of N 32% UAN applied at V14	260.08
	60# N Chicken Litter, 110# UAN Weed-and-Feed, -25% of Comm rec so 40# of N 32% UAN applied at V14	259.31
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Fixed rate of 75# of N 32% UAN applied at V14	262.37
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Comm rec of 53# of N 32% UAN applied at V14	261.19

SUTHERLAND, IOWA (continued)		
Nitrogen System	60# N Chicken Litter, 110# UAN Weed-and-Feed, +25% of Comm rec so 66# of N 32% UAN applied at V14	259.00
	60# N Chicken Litter, 110# UAN Weed-and-Feed, -25% of Comm rec so 40# of N 32% UAN applied at V14	264.83
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Fixed rate of 75# of N 32% UAN applied at V14	262.58
	60# N Chicken Litter, 110# UAN Weed-and-Feed, Comm rec of 53# of N 32% UAN applied at V14	251.56
ANAMOSA, IOWA		
Nitrogen System	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Fixed Rate of 69# of N 28% UAN applied at V10	232.85
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Comm rec 114# of N 28% UAN applied at V10	238.92
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, +25% of Comm rec so 139# of N 28% UAN applied at V10	248.11
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, -25% of Comm rec so 92# of N 28% UAN applied at V10	237.21
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, -25% of Comm rec so 92# of N 28% UAN applied at V10	231.43
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, +25% of Comm rec so 139# of N 28% UAN applied at V10	235.84
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Comm rec 114# of N 28% UAN applied at V10	233.67
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Fixed Rate of 69# of N 28% UAN applied at V10	236.62
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, -25% of Comm rec so 92# of N 28% UAN applied at V10	245.03
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, +25% of Comm rec so 139# of N 28% UAN applied at V10	255.60
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Comm rec 114# of N 28% UAN applied at V10	253.40
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Fixed Rate of 69# of N 28% UAN applied at V10	233.47
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, -25% of Comm rec so 92# of N 28% UAN applied at V10	232.89
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, +25% of Comm rec so 139# of N 28% UAN applied at V10	225.65
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Comm rec 114# of N 28% UAN applied at V10	229.04
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Fixed Rate of 69# of N 28% UAN applied at V10	218.88
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, -25% of Comm rec so 92# of N 28% UAN applied at V10	229.25
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, +25% of Comm rec so 139# of N 28% UAN applied at V10	234.89
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Comm rec 114# of N 28% UAN applied at V10	232.33

NITROGEN APPLICATION (CONTINUED)

ANAMOSA, IOWA (continued)		
Nitrogen System	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Fixed Rate of 69# of N 28% UAN applied at V10	229.00
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, -25% of Comm rec so 92# of N 28% UAN applied at V10	226.07
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, +25% of Comm rec so 139# of N 28% UAN applied at V10	227.43
	51# of N in Weed-and-Feed on 4/22/15, 64# of N through 2x2 on planter on 5/1/15, Comm rec 114# of N 28% UAN applied at V10	230.84
OSAGE, IOWA		
Nitrogen System	150# NH3 w/ N-Serve on 11/12/14, Comm rec 67# of N 32% UAN applied on 6/28/15	191.83
	150# NH3 w/ N-Serve on 11/12/14, +25% of Comm rec so 84# of N 32% UAN applied on 6/28/15	202.94
	150# NH3 w/ N-Serve on 11/12/14, -25% of Comm rec so 51# of N 32% UAN applied on 6/28/15	205.54
	150# NH3 w/ N-Serve on 11/12/14, Fixed rate of 78# of N 32% UAN applied on 6/28/15	216.39
	150# NH3 w/ N-Serve on 11/12/14, Comm rec 67# of N 32% UAN applied on 6/28/15	213.49
	150# NH3 w/ N-Serve on 11/12/14, +25% of Comm rec so 84# of N 32% UAN applied on 6/28/15	214.01
	150# NH3 w/ N-Serve on 11/12/14, -25% of Comm rec so 51# of N 32% UAN applied on 6/28/15	216.85
	150# NH3 w/ N-Serve on 11/12/14, Fixed rate of 78# of N 32% UAN applied on 6/28/15	214.24
	150# NH3 w/ N-Serve on 11/12/14, Comm rec 67# of N 32% UAN applied on 6/28/15	215.33
	150# NH3 w/ N-Serve on 11/12/14, +25% of Comm rec so 84# of N 32% UAN applied on 6/28/15	218.85
	150# NH3 w/ N-Serve on 11/12/14, -25% of Comm rec so 51# of N 32% UAN applied on 6/28/15	215.74
	150# NH3 w/ N-Serve on 11/12/14, Fixed rate of 78# of N 32% UAN applied on 6/28/15	213.40
	150# NH3 w/ N-Serve on 11/12/14, Comm rec 67# of N 32% UAN applied on 6/28/15	215.90
	150# NH3 w/ N-Serve on 11/12/14, +25% of Comm rec so 84# of N 32% UAN applied on 6/28/15	218.88
	150# NH3 w/ N-Serve on 11/12/14, -25% of Comm rec so 51# of N 32% UAN applied on 6/28/15	215.95
	150# NH3 w/ N-Serve on 11/12/14, Fixed rate of 78# of N 32% UAN applied on 6/28/15	212.95
	150# NH3 w/ N-Serve on 11/12/14, Comm rec 67# of N 32% UAN applied on 6/28/15	215.74
	150# NH3 w/ N-Serve on 11/12/14, +25% of Comm rec so 84# of N 32% UAN applied on 6/28/15	211.87
	150# NH3 w/ N-Serve on 11/12/14, -25% of Comm rec so 51# of N 32% UAN applied on 6/28/15	214.36
	150# NH3 w/ N-Serve on 11/12/14, Fixed rate of 78# of N 32% UAN applied on 6/28/15	214.91
	150# NH3 w/ N-Serve on 11/12/14, Comm rec 67# of N 32% UAN applied on 6/28/15	215.97
	150# NH3 w/ N-Serve on 11/12/14, +25% of Comm rec so 84# of N 32% UAN applied on 6/28/15	218.77
	150# NH3 w/ N-Serve on 11/12/14, -25% of Comm rec so 51# of N 32% UAN applied on 6/28/15	220.30
	150# NH3 w/ N-Serve on 11/12/14, Fixed rate of 78# of N 32% UAN applied on 6/28/15	217.30
	150# NH3 w/ N-Serve on 11/12/14, Comm rec 67# of N 32% UAN applied on 6/28/15	205.70

OSAGE, IOWA (continued)		
Nitrogen System	150# NH3 w/ N-Serve on 11/12/14, +25% of Comm rec so 84# of N 32% UAN applied on 6/28/15	206.96
	150# NH3 w/ N-Serve on 11/12/14, -25% of Comm rec so 51# of N 32% UAN applied on 6/28/15	205.68
	150# NH3 w/ N-Serve on 11/12/14, Fixed rate of 78# of N 32% UAN applied on 6/28/15	210.37
	150# NH3 w/ N-Serve on 11/12/14, Comm rec 67# of N 32% UAN applied on 6/28/15	206.31
	150# NH3 w/ N-Serve on 11/12/14, +25% of Comm rec so 84# of N 32% UAN applied on 6/28/15	204.71
MANLEY, IOWA		
Nitrogen System	140# Spring Applied NH3, Comm rec 64# of N 32% UAN	231.48
	140# Spring Applied NH3, Fixed rate of 43# of N 32% UAN	229.27
	140# Spring Applied NH3, -25% of Comm rec so 46# of N 32% UAN	202.09
	140# Spring Applied NH3, +25% of Comm rec so 80# of N 32% UAN	213.46
	140# Spring Applied NH3, Comm rec 64# of N 32% UAN	235.46
	140# Spring Applied NH3, Fixed rate of 43# of N 32% UAN	230.25
	140# Spring Applied NH3, -25% of Comm rec so 46# of N 32% UAN	228.63
	140# Spring Applied NH3, +25% of Comm rec so 80# of N 32% UAN	228.68
	140# Spring Applied NH3, Comm rec 64# of N 32% UAN	239.42
	140# Spring Applied NH3, Fixed rate of 43# of N 32% UAN	240.11
	140# Spring Applied NH3, -25% of Comm rec so 46# of N 32% UAN	237.26
	140# Spring Applied NH3, +25% of Comm rec so 80# of N 32% UAN	239.53
	140# Spring Applied NH3, Comm rec 64# of N 32% UAN	240.41
	140# Spring Applied NH3, Fixed rate of 43# of N 32% UAN	238.80
	140# Spring Applied NH3, -25% of Comm rec so 46# of N 32% UAN	239.52
	140# Spring Applied NH3, +25% of Comm rec so 80# of N 32% UAN	238.22
	140# Spring Applied NH3, Comm rec 64# of N 32% UAN	236.47
	140# Spring Applied NH3, Fixed rate of 43# of N 32% UAN	237.15
	140# Spring Applied NH3, -25% of Comm rec so 46# of N 32% UAN	237.58
	140# Spring Applied NH3, +25% of Comm rec so 80# of N 32% UAN	241.40
ITHACA, MICHIGAN		
Rescue Treament	60# Preplant N + 80# 360 Y-DROP (V8) + 30# 360 Y-DROP (VT)	229.8
	60# Preplant N + 80# 360 Y-DROP (V8)	223.7
	60# Preplant N + 80# 360 Y-DROP (V8) + 30# 360 Y-DROP (VT)	212.5
	60# Preplant N + 80# 360 Y-DROP (V8)	198.7
HANCOCK, MINNESOTA		
Rate Trial	Preplant N + 360 Y-DROP V10 (30#)	207.4
	Preplant N + 360 Y-DROP V10 (45#)	211.3
HANCOCK, MINNESOTA		
Rate Trial	Preplant N + 360 Y-DROP V10 (45#)	229.5
	Preplant N, No 360 Y-DROP	220.6

360 Y-DROP VS. PIVOT

HANCOCK, MINNESOTA		
Pivot vs. 360 Y-DROP	120# Preplant N + 30# W/ Pivot (VT)	214.92
	120# Preplant N + 36# 360 Y-DROP (V8) + 33# 360 Y-DROP (V12)	213.79
TREMONT, ILLINOIS		
Pivot Irrigation vs. 360 Y-DROP vs. Drip Irrigation	Dry 30" @ 36000	286.5
	Dry 30" @ 38000	287.5
	Pivot 30" @ 36,000	285.8
	Pivot 30" @ 38000	294.6
	Drip 30" @ 36,000	306.6
	Drip 30"" @ 38,000	298.5
	Dry 20" @ 38000	278
	Dry 20" @ 40000	274.8
	Pivot 20" @ 38000	297.7
	Pivot 20" @ 40,000	302.6
Pivot Irrigation vs. 360 Y-DROP vs. Drip Irrigation	Drip 20" @ 38000	309.1
	Drip 20" @ 40,000	294.3
	Dry Twin @ 40000	297.7
	Dry Twin @ 42000	298.3
	Pivot Twin @ 40000	292.3
	Pivot Twin @ 42000	297.1
	Drip Twin @ 40000	281.1
	Drip Twin @ 42000	288.9

360 YIELD CENTER SYSTEM

DANVILLE, ILLINOIS		
360 Yield Center System	130# N up front, 360 Y-DROP average of 85# liquid UAN (Variable Rate) @ V12, Fungicide @ V12 Priaxor 360 UNDERCOVER, Fungicide @ VT Headline AMP 360 UNDERCOVER	241.08
	130# N up front, Coulter Bar 85# fixed rate liquid UAN @ VT, Fungicide @ VT Headline AMP 360 UNDERCOVER	236.03

360 Y-DROP IN SOYBEANS

POPLAR GROVE, ILLINOIS		
360 Y-DROP Soybeans	Check	72
	360 Y-DROP 36# 32% UAN with 15 gal. of water	86
GRANT COUNTY, INDIANA		
360 Y-DROP Soybeans	None	52.9
	45#/A of N, 12.5#/A of K, 8.5#/A of S	53.3
	None	58.4
	45#/A of N, 12.5#/A of K, 8.5#/A of S	61.3
	None	55.6
	45#/A of N, 12.5#/A of K, 8.5#/A of S	54.8
	None	52.9
	45#/A of N, 12.5#/A of K, 8.5#/A of S	52.3

360 UNDERCOVER IN SOYBEANS

DANVILLE, ILLINOIS		
Soybean Fungicide	360 UNDERCOVER -Fungicide	85.16
	Check	83.69
	Over Top -Fungicide	83
	360 UNDERCOVER -Fungicide	84.77
	Check	82.87
	Over Top -Fungicide	83.08
EFFINGHAM, ILLINOIS		
Soybean Insecticide and Fungicide	Check	71.87
	Undercover -Fungicide and Insecticide	80.03
DELEVAN, ILLINOIS		
Priaxor Soybean Fungicide Trial (R2)	Broadcast 20"	71.51
	360 UNDERCOVER 30"	71.01
	Check 30"	71.01
	Broadcast 20"	74.82
	360 UNDERCOVER 20"	71.63
	Check 20"	70.75
	Broadcast 30"	73.43
	360 UNDERCOVER 30"	76.67
	Check 30"	67.38
	Broadcast 20"	73.10
	360 UNDERCOVER 20"	73.10
	Check 20"	67.38
	Broadcast 30"	70.24
	360 UNDERCOVER 30"	72.14
	Check 30"	72.81
	Broadcast 20"	75.76
	360 UNDERCOVER 20"	75.40
	Check 20"	73.55

SPECIALTY NUTRIENTS

HANCOCK, MINNESOTA		
Pivot vs. 360 Y-DROP	120# Preplant N + 30# W/ Pivot (VT)	214.92
	120# Preplant N + 36# 360 Y-DROP (V8) + 33# 360 Y-DROP (V12)	213.79
TREMONT, ILLINOIS		
Pivot Irrigation vs. 360 Y-DROP vs. Drip Irrigation	Dry 30" @ 36000	286.5
	Dry 30" @ 38000	287.5
	Pivot 30" @ 36,000	285.8
	Pivot 30" @ 38000	294.6
	Drip 30" @ 36,000	306.6
	Drip 30"" @ 38,000	298.5
	Dry 20" @ 38000	278
	Dry 20" @ 40000	274.8
	Pivot 20" @ 38000	297.7
	Pivot 20" @ 40,000	302.6
Pivot Irrigation vs. 360 Y-DROP vs. Drip Irrigation	Drip 20" @ 38000	309.1
	Drip 20" @ 40,000	294.3
	Dry Twin @ 40000	297.7
	Dry Twin @ 42000	298.3
	Pivot Twin @ 40000	292.3
	Pivot Twin @ 42000	297.1
	Drip Twin @ 40000	281.1
	Drip Twin @ 42000	288.9
PRIMGHAR, IOWA		
QLF through 360 Y-DROP Corn	Check	263.8
	85# of Nirogen in QLF through 360 Y-DROP	266.1
	Check	262.6
	85# of Nirogen in QLF through 360 Y-DROP	267.2
	Check	270.8
	85# of Nirogen in QLF through 360 Y-DROP	267.5
	Check	261.0
TREMONT, ILLINOIS		
Nutrient Trial	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Headline AMP 360 UNDERCOVER (VT)	249.2
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Headline AMP 360 UNDERCOVER (VT)	255.1
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + Headline AMP 360 UNDERCOVER (VT)	259.2
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + Headline AMP 360 UNDERCOVER (VT)	256.1
	100# Preplant N + 150# 360 Y-DROP (V12) N + Headline AMP 360 UNDERCOVER (VT)	272.2
	100# Preplant N + 150# 360 Y-DROP (V12) N + Headline AMP 360 UNDERCOVER (VT)	260.9
	100# Preplant N + 150# 360 Y-DROP (V12)	266.4
	100# Preplant N + 150# 360 Y-DROP (V12)	260.8
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Headline AMP & Mn (VT)	263.2
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Headline AMP & Mn (VT)	267.2
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Mn (VT)	270.6
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Mn (VT)	270.4
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + B, Moly & Headline AMP 360 UNDERCOVER (VT)	280.7
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + B, Moly & Headline AMP 360 UNDERCOVER (VT)	270.7
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + B, Moly & 360 UNDERCOVER (VT)	275.8

TREMONT, ILLINOIS (continued)		
Nutrient Trial	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + B, Moly & 360 UNDERCOVER (VT)	277.5
	100# Preplant N + 150# 360 Y-DROP (V12); Mn & Headline AMP 360 UNDERCOVER (VT)	278.6
	100# Preplant N + 150# 360 Y-DROP (V12); Mn & Headline AMP 360 UNDERCOVER (VT)	269.6
	100# Preplant N + 150# 360 Y-DROP (V12); Mn 360 UNDERCOVER (VT)	272.0
	100# Preplant N + 150# 360 Y-DROP (V12); Mn 360 UNDERCOVER (VT)	265.8
	100# Preplant N + 150# 360 Y-DROP (V12); B, Moly + Headline AMP (VT)	267.3
	100# Preplant N + 150# 360 Y-DROP (V12); B, Moly + Headline AMP (VT)	257.9
	100# Preplant N + 150# 360 Y-DROP (V12); B, Moly (VT)	260.3
	100# Preplant N + 150# 360 Y-DROP (V12); B, Moly (VT)	268.2
TREMONT, ILLINOIS		
Nutrient Trial	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Headline AMP 360 UNDERCOVER (VT)	77.5
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Headline AMP 360 UNDERCOVER (VT)	79.5
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + Headline AMP 360 UNDERCOVER (VT)	78.9
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + Headline AMP 360 UNDERCOVER (VT)	78.1
	100# Preplant N + 150# 360 Y-DROP (V12) N + Headline AMP 360 UNDERCOVER (VT)	83.4
	100# Preplant N + 150# 360 Y-DROP (V12) N + Headline AMP 360 UNDERCOVER (VT)	80.9
	100# Preplant N + 150# 360 Y-DROP (V12)	78.7
	100# Preplant N + 150# 360 Y-DROP (V12)	73.2
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Headline AMP & Mn (VT)	75.6
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Headline AMP & Mn (VT)	72.4
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Mn (VT)	78.5
	100# Preplant N + 150# 360 Y-DROP (V12); QLF Boost 360 Y-DROP + Mn (VT)	74.6
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + B, Moly & Headline AMP 360 UNDERCOVER (VT)	75.4
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + B, Moly & Headline AMP 360 UNDERCOVER (VT)	72.5
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + B, Moly & 360 UNDERCOVER (VT)	76.9
	100# Preplant N + 150# 360 Y-DROP (V12); K 360 Y-DROP + B, Moly & 360 UNDERCOVER (VT)	82.2
	100# Preplant N + 150# 360 Y-DROP (V12); Mn & Headline AMP 360 UNDERCOVER (VT)	82.9
	100# Preplant N + 150# 360 Y-DROP (V12); Mn & Headline AMP 360 UNDERCOVER (VT)	82.0
TREMONT, ILLINOIS		
Nutrient Trial	100# Preplant N + 150# 360 Y-DROP (V12); Mn 360 UNDERCOVER (VT)	83.5
	100# Preplant N + 150# 360 Y-DROP (V12); Mn 360 UNDERCOVER (VT)	81.8
	100# Preplant N + 150# 360 Y-DROP (V12); B, Moly + Headline AMP (VT)	83.1
	100# Preplant N + 150# 360 Y-DROP (V12); B, Moly + Headline AMP (VT)	81.3
	100# Preplant N + 150# 360 Y-DROP (V12); B, Moly (VT)	78.6
	100# Preplant N + 150# 360 Y-DROP (V12); B, Moly (VT)	80.0

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