Mosaic BIOSCIENCES™

THE BIOLOGICAL CHOICE

Inside ROFI: Volume 1

THE GROWER'S GUIDE TO ROFI

RETURN ON FERTILIZER INVESTMENT

How do you get more out of what you're already putting in with Mosaic Biosciences™?

ROFI is the answer.

ROI ON YOUR MIND? MAKE THE SHIFT TO ROFI

FIND OUT HOW BIOLOGICALS PAY BACK

ROFI is all about getting more out of what you put in. See how BioPath® and PowerCoat™ fit into your program to improve your Return on Fertilizer Investment (ROFI). We'll show you real, measurable value from every acre. It's a smarter approach that takes a big-picture perspective into consideration, understanding how crop nutrition and biologicals work together. ROFI shifts the conversation from cost per ton to return per acre. From input price to output performance.

See how biologicals like BioPath and PowerCoat turn vital nutrients into valuable returns. →

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ROFI: MAKING CROP NUTRITION MORE EFFICIENT

Farming has never been easy. And today, it feels harder than ever. Weather. Margins. Costs. Complexity. You're under pressure to optimize every single acre of land and make every dollar produce a return. Crop nutrition is one of the biggest investments you make each year, and for good reason—up to 60%* of yield is dependent on soil fertility. So, how do you get the most out of what you are already investing?

That's where ROFI comes in.

UNLOCK THE FULL POTENTIAL OF YOUR FIELDS

ROFI provides a strategic approach to optimizing fertilizer use. By focusing on precision application, nutrient management and sustainable practices, ROFI empowers you to achieve greater yields with less waste, transforming a significant expense into a powerful driver of success.

It's about more than just applying nutrients; it's about applying them intelligently, strategically and with techniques or enhancements that will result in a clear focus on maximizing the return on every dollar invested in the soil.

** Source: Sterward, et al. (2005)*

HOW ROFI WORKS

WHAT RETURN ON FERTILIZER INVESTMENT REALLY MEANS

We're speaking your language when it comes to return on investment, but how does Mosaic actually deliver ROFI?

Improved Nutrient Availability

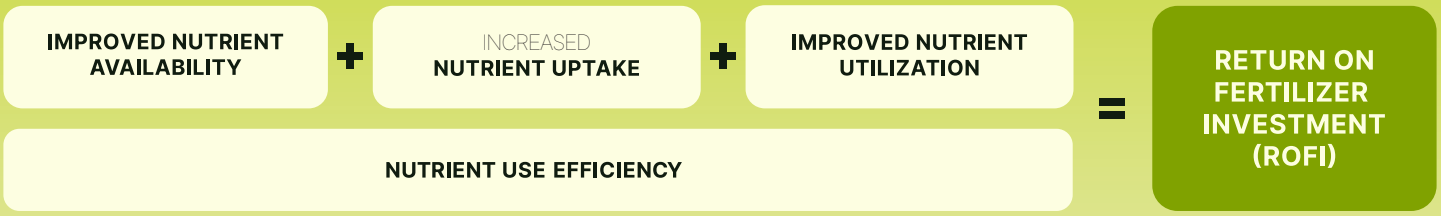
Enable the soil and natural or applied soil biology to make nutrients available for crops when they need them.

Increased Nutrient Uptake

Help plants access and absorb nutrients more effectively with more balanced uptake across populations.

Improved Nutrient Utilization

Ensure nutrients are used efficiently to drive yield in year one and the nutrients held back work better for you in the long run.



THAT'S HOW WE WRITE THE NEXT CHAPTER IN CROP NUTRITION.

More impact from every input—this year and beyond.
That's your return. That's ROFI.

HOW MOSAIC PRODUCTS WORK TO DELIVER ROFI

MicroEssentials® Aspire®

BioPath® PowerCoat™

THE STRONG FOUNDATION

Fertilizer doesn't just feed the crop—it builds the foundation. It's a process that goes far beyond simple nutrition to promote soil health, microbial ecosystems and nutrient cycling.

MicroEssentials® delivers uniform nutrient distribution, increased nutrient uptake and season-long sulfur availability. With MicroEssentials, you get stronger early growth, yield building nutrition later in the season and a better ROI from every granule.

Aspire® delivers potassium and two forms of boron in every granule, ensuring season-long, uniform nutrition to boost efficiency and profitability—helping you maximize every acre and every fertilizer dollar. This is where ROFI starts.

THE PERFECT COMPLEMENTS

Biologicals don't replace fertilizer—they make more of the nutrients in your soil available throughout the year and release other valuable nutrients from the soil that would normally be trapped. Both of these modes of action help ensure the maximum yield for that crop year is realized.

BioPath® is a water-based formulation designed for co-application with most liquid products. It is compatible with herbicides, liquid fertilizers and fungicides during spring applications. Ideal application times range from pre-plant or at-planting herbicide application, through planting with starter fertilizer, to side-dress and early post-emergence herbicide applications.

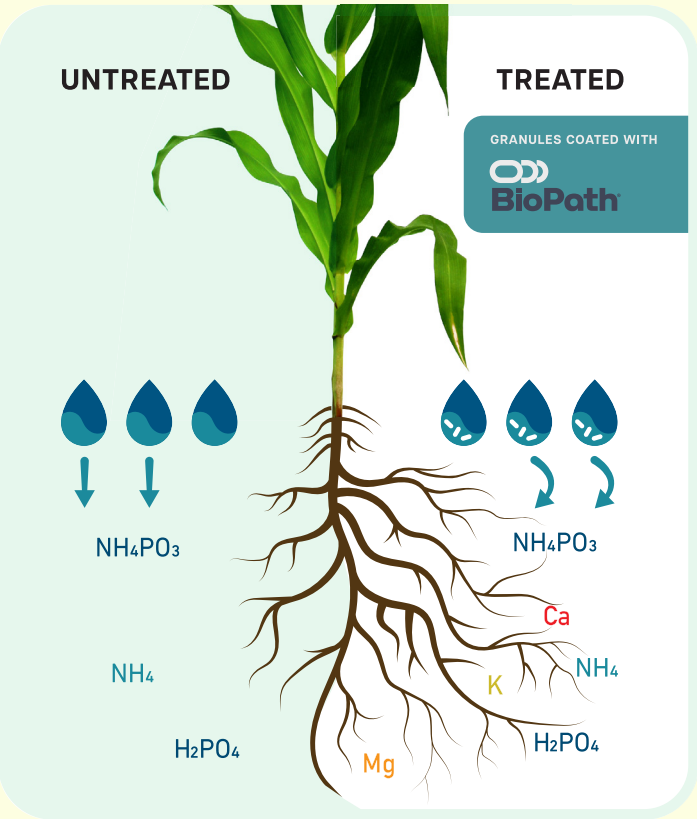
PowerCoat™ is an oil-based formulation impregnated on dry fertilizer in fall/spring, increases nutrient use efficiency, and activates when weather conditions favor crop emergence and early growth. It is effective on a wide range of raw nutrients, biosolids and dry fertilizer blends, reducing the need for special applications and contributing to ROFI.

HOW BIOLOGICALS AND FERTILIZERS WORK TOGETHER

When applying a biological fertilizer complement to a fertilizer application, you can amplify fertilizer efficiencies. Organic acids and enzymes in biologicals improve the solubilization of fertilizers into plant-available forms. This improves nutrient use efficiency and promotes healthy plant growth and overall crop productivity.

This beneficial bacteria is the ideal partner for your fertilizer program, cycling nutrients as they grow and colonize. More nutrients means a more robust root system, which in turn leads to improved uptake, plant growth and vigor. That also means, you get:

- **Strong Root Systems**
- **Stronger Plants**
- **Improved Stress Management**
- **Optimized Yields**



THAT'S ROFI IN ACTION.

IT'S A NUMBERS GAME.

GET A CLOSER LOOK AT THE DATA BEHIND ROFI

First, let's set the stage.

Soil health is the cornerstone of balanced crop nutrition. Up to 60% of yield is dependent on soil fertility. Setting the foundation for healthy soils provides greater crop productivity and sustains the land for generations to come.

With the right balance of season-long nutrition and naturally occurring support for soil health, you can grow more—this year and for generations to come.

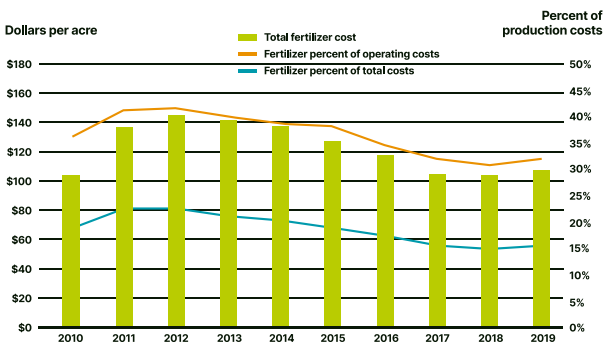
UP TO 60%

of yield is dependent on crop nutrition.

Source: Sterward, et al. (2005)

Fertilizer costs as a portion of corn production costs, 2010-19

USDA Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE



Source: USDA, Economic Research Service, Commodity Costs and Returns.

"From 2010 to 2019, fertilizer was a major expense in U.S. corn production, accounting for 33 to 44 percent of operating costs—a category that includes other variable expenses like seed, chemicals, fuel and repairs. Fertilizer also comprised 16 to 24 percent of the average corn producer's total costs"

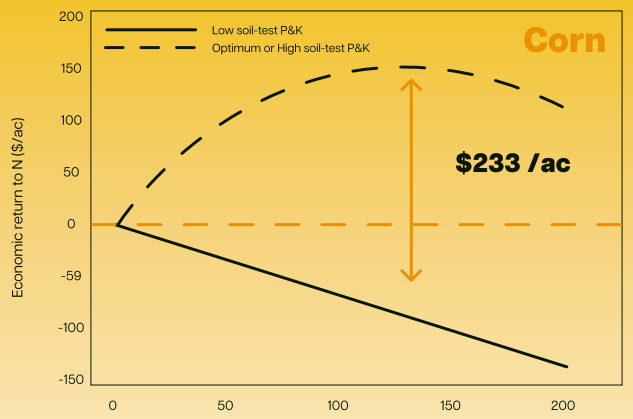
-USDA Economic Research Service

If you don't feed it, it won't grow. That's why it's important to maintain adequate phosphorus (P), potassium (K) and sulfur (S) levels to maximize yield potential. Crops today absorb more nutrients from the soil, so it's essential to replace those nutrients to maintain healthy soil.

Supporting this, recent agronomic research from the University of Wisconsin found that when P and K levels were deficient, increasing nitrogen (N) rates alone did not lead to higher yields or positive economic returns. However, with optimal P, K and S levels, increasing N rates did result in higher yields.

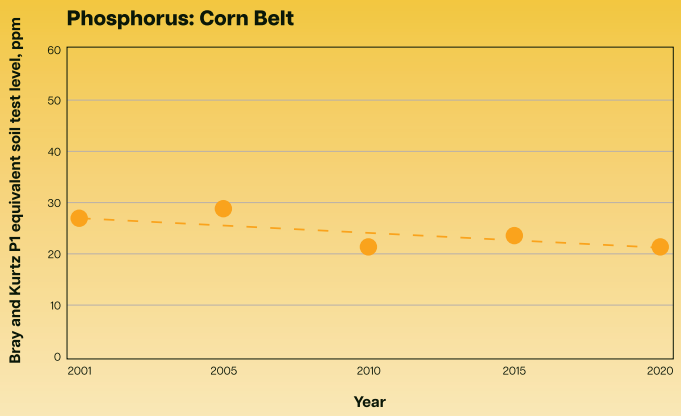
Mosaic's MicroEssentials®, delivers balanced nutrition by combining N, P, S and zinc (Zn)*, to ensure optimal nutrient uptake and yield potential.

∗Zinc only available in MicroEssentials® SZ®



Economic return to N on corn under low vs. optimum/high P & K soil tests. (Jones et al., 2022)

MEDIANS OVER TIME



Source: The Fertilizer Institute

According to the Fertilizer Institute, P levels have declined across the Corn Belt by about 19 percent between 2000 and 2020. During that same time, K levels have declined more than 3 percent.

NOW, WHAT CAN WE DO TO TIP THE SCALES IN YOUR FAVOR?

MICROESSENTIALS® INCREASES PHOSPHORUS UPTAKE

In a greenhouse trial conducted at Sabanci University, corn treated with MicroEssentials SZ® showed a 39% increase in phosphorus uptake compared to DAP and DAP plus Ammonium Sulfate and Zinc Sulfate ($ZnSO_4$) blends, demonstrating enhanced phosphorus efficiency. This improved performance is attributed to MicroEssentials' patented Fusion® technology, which delivers a nutritionally balanced granule of N, P, S and Zn.

39%

Increase in P Uptake Over DAP+AS+$ZnSO_4$

+7.2

BUSHELS OF CORN PER ACRE*

*MicroEssentials SZ® vs. MAP

4.2	2.6	2.5	2.7
BU/AC AVERAGE YIELD INCREASE*	BU/AC INCREASED YIELD*	BU/AC INCREASED YIELD*	BU/AC INCREASED YIELD*
*with MicroEssentials® S15 over MAP	*with MicroEssentials® S15 over MAP	*with MicroEssentials® S10 over MAP	*with MicroEssentials® S15 over MAP
WINTER WHEAT	SPRING WHEAT	SOYBEAN	CANOLA

MAXIMIZING RETURNS WITH BIOPATH®

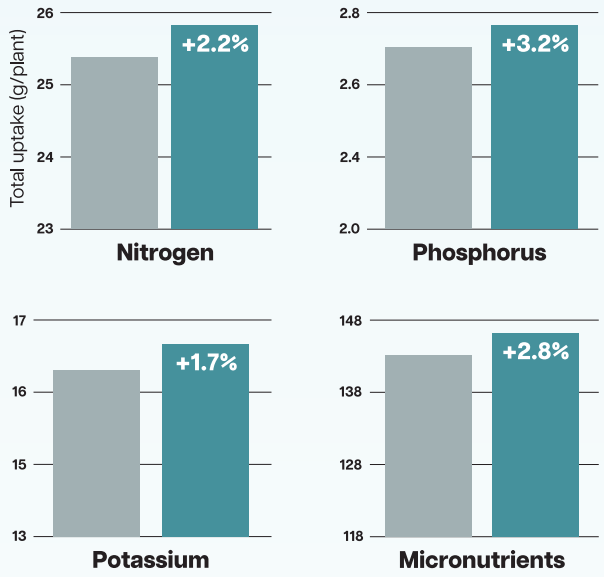
In field trials, BioPath demonstrated clear benefits, including yield improvements and increased nutrient efficiency. According to the TruResponse® Biological Field Testing, BioPath increases the uptake of key macro and micronutrients by up to 2.2 percent for nitrogen, 1.7 percent for potassium and 3.2 percent for phosphorus.

This enhanced nutrient use efficiency leads directly to yield increases—an average of 3.69 bu/ac across 163 field studies on corn.

These increases translate into significant ROFI gains, **with growers seeing returns as high as 3.3 to 1 for sidedress and 2.8 to 1 for in-furrow applications.** Even under less-than-ideal growing conditions, this improved efficiency supports crop health, helping plants better withstand adversity and finish their life cycle more robustly.

Additionally, by driving more nutrients into the plant, BioPath helps growers capture an additional $5.71 per acre from N, P and K alone, not including advantages of micronutrients, from fertilizer investment, enhancing the bottom line even before harvest.

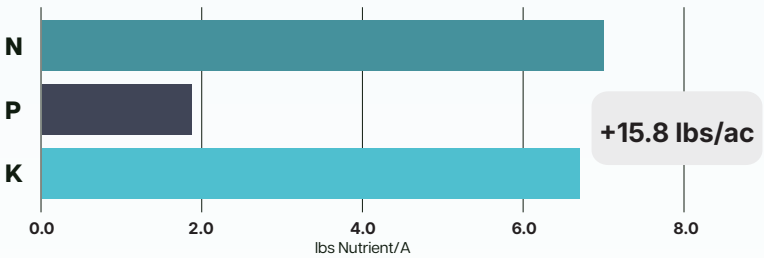
BIOPATH INCREASES TOTAL NUTRIENT UPTAKE



All treatments received grower standard production inputs to include side-dress nitrogen. Data reflects the average difference of 325 corn plants across 12 locations. Total nutrient uptake + biomass x nutrient concentration. Biomass and nutrient concentration at approximately V12 to VT.

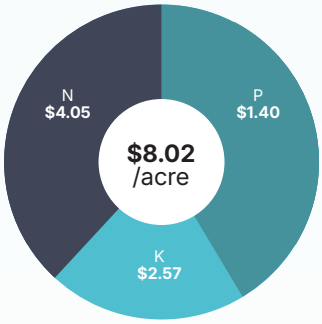
RETURN ON FERTILIZER INVESTMENT

ADDITIONAL NUTRIENTS UTILIZED



Additional nutrient utilized calculated using typical corn fertilizer rates in the USA (180 N, 90 P, 160 K) multiplied by the treatment effect increases in total nutrient uptake. BioPath applied 16 fl oz/A with sidedress nitrogen.

ADDITIONAL INVESTMENT ULTILIZED



Additional investment utilized by multiplying the increase in nutrient utilized times the cost of nutrients today. Nitrogen $ utilized calculated using UAN32 $513/ton, Phosphorus $ utilized calculated using MAP $810/ton, Potassium $ utilized calculated using Potash $644/ton. NPK = $6.13/acre + an additional 2.8% uptake and value from micronutrients.

All treatments received grower standard production inputs to include side-dress nitrogen. Data reflects the average difference of 325 corn plants across 12 locations. Total nutrient uptake + biomass x nutrient concentration. Biomass and nutrient concentration at approximately V12 to VT.

BIOLOGICAL STRAINS FOR ECONOMICAL GAINS

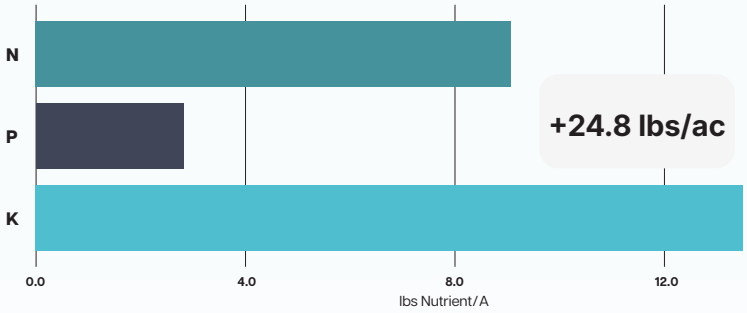
PowerCoat™ is a biological coating and a perfect complement to granular fertilizer application because it enhances nutrient utilization for superior plant growth and vigor. It contains proven strains of Plant Growth Promoting Rhizobacteria (PGPR) that have been rigorously field-tested in diverse environmental conditions, PowerCoat consistently delivers strong performance.

PowerCoat boosts Return on Fertilizer Investment (ROFI) by adding **+24.8 lbs/ac more** nutrients utilized in corn.

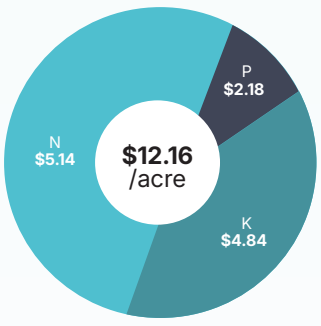
+24.8 LBS/AC

More nutrients utilized in corn

ADDITIONAL NUTRIENTS UTILIZED



ADDITIONAL INVESTMENT ULTILIZED



Additional Investment Utilized by multiplying the increase in nutrient utilized times the cost of nutrients today. Nitrogen $ utilized calculated using Urea $548/ton, Phosphorus $ utilized calculated using MAP $810/ton, Potassium $ utilized calculated using Potash $447/ton. Fertilizer Prices.

Nutrient uptake data reflects the average difference of 120 plots across 8 locations. Total nutrient uptake = biomass x nutrient concentration. Additional nutrient utilized calculated using 34,000 plant per acre multiplied by the treatment effect increases in total nutrient uptake. PowerCoat impregnated on pre-plant broadcast fertilizer applied at an equivalent of 5 fl oz/ac.

ROFI AIMS TO EASE WHAT'S ON YOUR MIND.

ROFI IS HERE BECAUSE IT'S WHAT YOU CARE ABOUT.

We've heard a lot from growers over the years about how important ROI is to running a successful farm operation. That's why we're committed to delivering more ROFI to every acre of every operation. Hear it straight from the real growers who've tested Mosaic products on their fields.

"Every dollar that I spent on BioPath, I got five or six dollars back. That meets all the criteria in my book to keep using and expand Biopath on my farm for next year."

- Granvil Travis, Travis Brothers Farms

"From this trial alone... a 4.5-bushel advantage... about a $20 an acre increase in revenue. That's a good, positive ROI."

- Dave Schrock, Schrock Farms

If a product doesn't have a return on investment, especially the way things are right now, I can't use it on my farm. Two years ago I saw an average 5.9 bushel yield advantage with BioPath compared to the control. When I see a product consistently generating income, I know it needs to be a permanent part of my program."

- Andrew Focht, Paylly Farms

We are ROI-focused. You can chase bushels and high yield and that's great, but did it make you money? Where the nice thing is, with BioPath, for the price range, the ROI, it's a pretty easy decision to make."

- Brooks Reid, Reid Farms

We're always looking for advantages to do more with what we have and make things more efficient—because our cost per acre is so high where we live. So we have to find different ways to make that dollar do more."

- Jake Drozd, Drozd Family Grain

The biggest benefit of using MicroEssentials is yield. It has raised corn yield about 10 bushels per acre."

- Mick Kruse, General Manager of Sales from Chem Gro Inc.

ROFI ISN'T JUST A METRIC. IT'S A MINDSET SHIFT.

Why does ROFI matter? Because growers have been telling us it matters. We're listening.

In today's market, every input is under a microscope. You're sharpening the pencil to see what really pays. That's where ROFI makes the difference.

More yield per dollar.

Maximize the return on what is already being applied.

Proof in performance.

Confidence backed by data, not just hope.

Better decisions.

Use ROFI to evaluate what's working and what's not.

Stay competitive.

Maximize profit potential even in a low-price environment.

YOUR FERTILIZER IS MORE THAN A COST. IT'S A SMART, STRATEGIC INVESTMENT.

So let us help you get more from what you're already budgeting.

AGRONOMY ANSWERS WITH DR. SIBLE

FEATURING DR. CONNOR SIBLE

Research Assistant Professor, University of Illinois

Dr. Connor Sible has devoted his career to understanding how agronomic practices influence plant-biome interactions that drive nutrient cycling and crop productivity. He has a strong understanding of how fertility and biology can work to improve yields, reduce risks and ensure long-term success. So, we asked him for some independent and educated answers to common questions we hear when growers are considering returns on their management decisions.

Q: What is the main focus of your agronomic research efforts?

A: The research program that I work on very closely with Dr. Fred Below is high yield corn and soybean production. When we think about corn and soybean production, it is largely the interactions of inputs or products with the practices that growers use, whether that's tillage or different placements, genetics and row spacings. Ultimately, if we do our jobs well, we get the positive interactions that provide a higher yield return to those investments. That is our research approach to productions systems and yield.

Q: What can growers do to ensure they're gaining a proper return on their fertilizer investments?

A: There are a lot of different variables at play, but when growers look at that fertilizer input compared to the overall picture, the key performance indicator they should look at are check strips. If you can put some strips out where you skip a fertilizer pass (or compare a commodity fertilizer to MicroEssentials®) and then you can find that on the yield monitor, that's the easiest way to reassure yourself what that investment is giving. It can limit you a little bit to the single season inference, so I also encourage growers to look at the seasonal trends year over year.

Q: What data should growers be looking at to best understand their returns on overall fertilizer investment?

A: The quick one is yield. The other data to measure for the longer-term, they can look at their soil tests. Are their soil tests going up or at least staying flat? Because we know that if you have really high yields, you have a lot of nutrient removals. Every time that grain truck leaves the field, you're sending nutrients away. If we don't resupply the soil, eventually you mine that system. Now, it depends on where you're at. Illinois is a very good example, as where I am located our soils are full of nutrient supply. You could probably get a lot of years of production with no P and K fertilizer, but eventually you can hit that cliff. Southern Illinois soils can have half as much nutrient supply as central, and you can hit that cliff a lot faster. So, beyond yield, soil tests can help understand returns on overall fertilizer investment.

Q: What's one of the new or different management practices growers seem most open to trying on their farms and how are they measuring returns?

A: Biologicals are a big one because those are relatively inexpensive inputs compared to fertilizer, seed and pesticide. For example, if you're comparing three biologicals to see which may be of value on your farm the evaluation comes down to yield. Then using today's market price you can quickly calculate those extra bushels' dollar value to assess your return on investment. We often look at single-season returns, but I also recommend looking at yield comparisons year over year, where a three or four-year trend can give you confidence a product or practice is improving yield and return.

PRACTICE MAKES PERFORMANCE.

If you feel ready to make some changes to your crop nutrition or biological programs, Connor suggests taking on these changes to your management practices in stages, "Also keep in mind that if you're going to try something new or different, focus on one change at a time."

WHAT TO DO NEXT

HOW DO YOU TAKE YOUR ROFI TO THE NEXT LEVEL?

By Keith Byerly, Commercial Sustainability Lead, Mosaic

THINK ROFI.

When we look at farming we tend to just look at the end results. Often growers focus solely on year-end profitability (net expenditures vs. yield), which is crucial. However, a deeper analysis reveals we don't equally prioritize or apply decision-making to the individual components contributing to that profitability, despite their proportional impact. With ROFI we're shifting the strategy, to focus on what inputs drive the bottom line.

For example, a grower spends 50 percent of their time on seed selection which is about 25 percent of their expenditures, but only 10 percent of time is spent on crop nutrition, which could be around 30 percent of expenditures. This leads to last-minute nutrition decisions and replicating previous years. ROFI encourages a more granular approach—taking a closer look at crop nutrition and making those decisions with the same strategic mindset as other major inputs. It's about aligning your time and attention with the impact each input has on your profitability.

GET DOWN TO BUSINESS.

If we look at crop nutrition on a per acre basis, optimizing return on fertilizer investment (ROFI) means balancing yield and profitability. It's not just about total pounds of product, but the net gain from fertilizer investment and yield combined. Commodity fertilizer blends that offer a similar total nutrient analysis as performance products may be slightly cheaper but lack the synergistic yield advantages of higher-quality options, thus yielding a lower ROFI. A pound of phosphorus isn't always equal, but an additional bushel of yield always increases returns.

TOOLS OF THE ROFI TRADE.

If you want to dig into ROFI on your own, head over to cropnutrition.com. You'll find several powerful calculators that help compare Mosaic performance products to commodity fertilizers or blends. These tools don't just show cost comparisons—they're backed by over 20 years of small-plot, replicated trial research. With thousands of trials across North America, we've built a deep dataset of local yield results that help quantify the value of performance products.

When you factor in yield advantages, input costs and crop prices, you start to see the real return on fertilizer investment. Even a modest gain—$10, $15, or $20 per acre—can add up to a major impact when scaled across your entire operation.

THE NEXT STEP IS CLOSER THAN YOU THINK.

If you're ready to leverage Mosaic's tools to improve your returns, start with your trusted advisor. Bring them your ideas. Share the ROFI concept, the calculators and the thinking behind advanced crop nutrition and its interaction with biologicals. If they're not already using these tools, introduce them—and challenge the conversation around how to get more from your crop nutrition strategy.

IT'S TIME TO THINK ROFI

ROFI isn't just a concept—it's a mindset. It's about aligning your decisions with the true drivers of profitability. With the right tools, the right data and the right conversations, you can make every fertilizer dollar work harder—for this season and the seasons ahead.

CROPNUTRITION.COM/BIOSCIENCES

Mosaic BIOSCIENCES™

MIND YOUR ROFI

Got ROI on your mind? It's time to think ROFI: Return on Fertilizer Investment to drive better returns from every acre of your farm.

CROPNUTRITION.COM/BIOSCIENCES