Spring 2026

CropCompass™

AGRONOMIC GUIDE

Simplot
GROWER SOLUTIONS

FROM SUPPLY TO SOIL

This season, growers are taking a close look at every input cost and fertilizer is often one of the first nutrients under scrutiny. In this issue, we break down global and domestic supply factors, revisit the agronomics of phosphorus and its impact on yield potential, and highlight Simplot's long-standing commitment to providing dependable phosphate fertilizer solutions.

Global Supply, Local Impact

Fertilizer doesn't just show up at the farm gate. Global trade flows, sourcing decisions, and supply dynamics all shape what's available and when. Understanding the moving pieces helps you plan ahead, so the right product is on your farm when you need it.

Agronomics That Matter

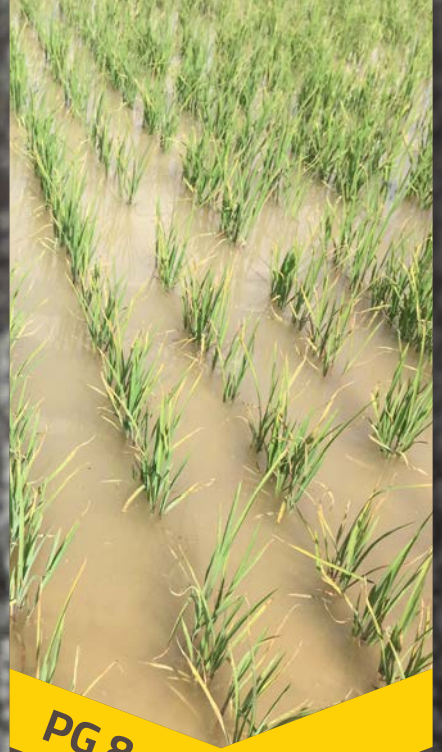
Once fertilizer hits the field, agronomy takes over. Knowing how nutrients behave in your soil gives you the power to make smarter, more efficient decisions.

Spotting Phosphorus Issues Early

Phosphorus drives early energy, root growth, and stand establishment. When it's limited, crops speak up. Recognizing these signals quickly helps you act before yield potential slips away.

Simplot's Phosphate Backbone

Phosphate isn't just another fertilizer for Simplot; it's part of our identity. With deep mining roots and decades of nutrient expertise, we're committed to manufacturing high-quality phosphate fertilizer and supporting it with the agronomy that helps growers use it wisely.

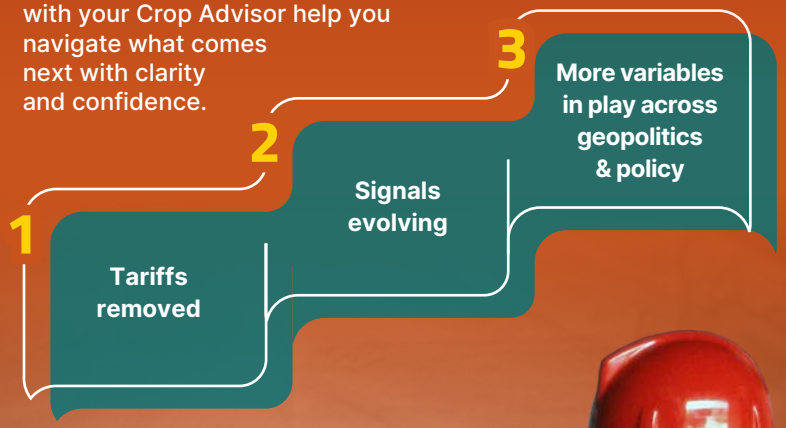


PLAN AHEAD. STAY AHEAD.

Uncertainty can return quickly. Plan ahead and push forward with confidence.

PUSH FORWARD WITH CONFIDENCE

The past several years have been anything but normal. Even when things appear to settle, new disruptions can show up fast - changing supply routes, production, and input costs. That's why planning matters: it helps you stay flexible on product, timing, and logistics. And when conditions change quickly, trusted partnerships with your Crop Advisor help you navigate what comes next with clarity and confidence.



Progress is incremental and planning helps you stay ahead at every step.

J.R. Simplot
Founder

FROM GOALS TO GROUND: MAKE IT HAPPEN

Turning plans into action is what sets successful seasons apart. And in a season shaped by global supply conditions, logistics, and timing, early planning helps you stay ahead. Whether you're managing early acres or preparing for upcoming applications, now is the time to align your goals with the steps that make them a reality.

WHY PLANNING MATTERS IN TODAY'S ENVIRONMENT

Fertilizer conditions can change fast. Global supply and import volumes, policy decisions, weather, and seasonal demand all play a role. Because nutrients come from all over the world, early planning helps ensure you have what you need when you need it and stay ready when conditions change.

Why We Buy What We Buy

Our fertilizer procurement team monitors global and domestic markets daily to source high-quality nutrients. Strategic purchasing helps support product availability, maintain a balanced nutrient mix, and reduce your exposure.

EXPERT INSIGHT

Rhett monitors global and domestic nutrient trends, trade flows, and supply dynamics that shape fertilizer availability across the industry. His work helps Simplot stay informed about the broader market environment, giving growers confidence that we understand the forces behind today's rapidly shifting conditions.

Scan here for Rhett's take on the season ahead.

"Markets move fast. Understanding them helps bring clarity to a complex landscape."

Rhett Adams
Head of NPK Products

CHECK YOUR READINESS

High risk of delay
→ Act immediately to secure supply and avoid missed windows.

Limited availability, tight timing
→ Talk to your Crop Advisor now to lock in product and timing.

Supply secured, logistics scheduled
→ Stay on track and confirm delivery dates.

HOW A STRONG CROP ADVISOR PARTNERSHIP SUPPORTS YOUR SEASON

Your plan only succeeds if it works in the real world. A strong partnership with your Crop Advisor brings clarity, flexibility, and confidence to every acre.

WHAT STRENGTHENS YOUR PLAN

People Who Know Farming

With deep agricultural roots, including our own farming operations, we understand the pressures, timing windows, and decisions growers face every day.

Expertise That Guides Decisions

Trusted agronomy and precision ag teams bring field-proven guidance and practical tools that help you make confident, in-season adjustments.

Insight Into Supply Conditions

Your Crop Advisor has access to a broad view of global and domestic nutrient trends and supply conditions – helping guide decisions when costs or availability start to change.

Review your fertilizer plan with your Crop Advisor and stay ahead of what's next.

FERTILIZER CONNECTS IT ALL

Yield goals. Soil health. Timing.
Fertilizer decisions bring them together and set the stage for smarter planning.

Fast changing conditions can create risk, and planning is what keeps you in control. Fertilizer isn't just a product. It's a strategy. The right plan aligns nutrients with crop needs, supports soil health, and keeps your season moving on schedule. This is where agronomy meets action, and where your Crop Advisor helps you make confident, well-timed decisions.

Questions to Ask Your Crop Advisor

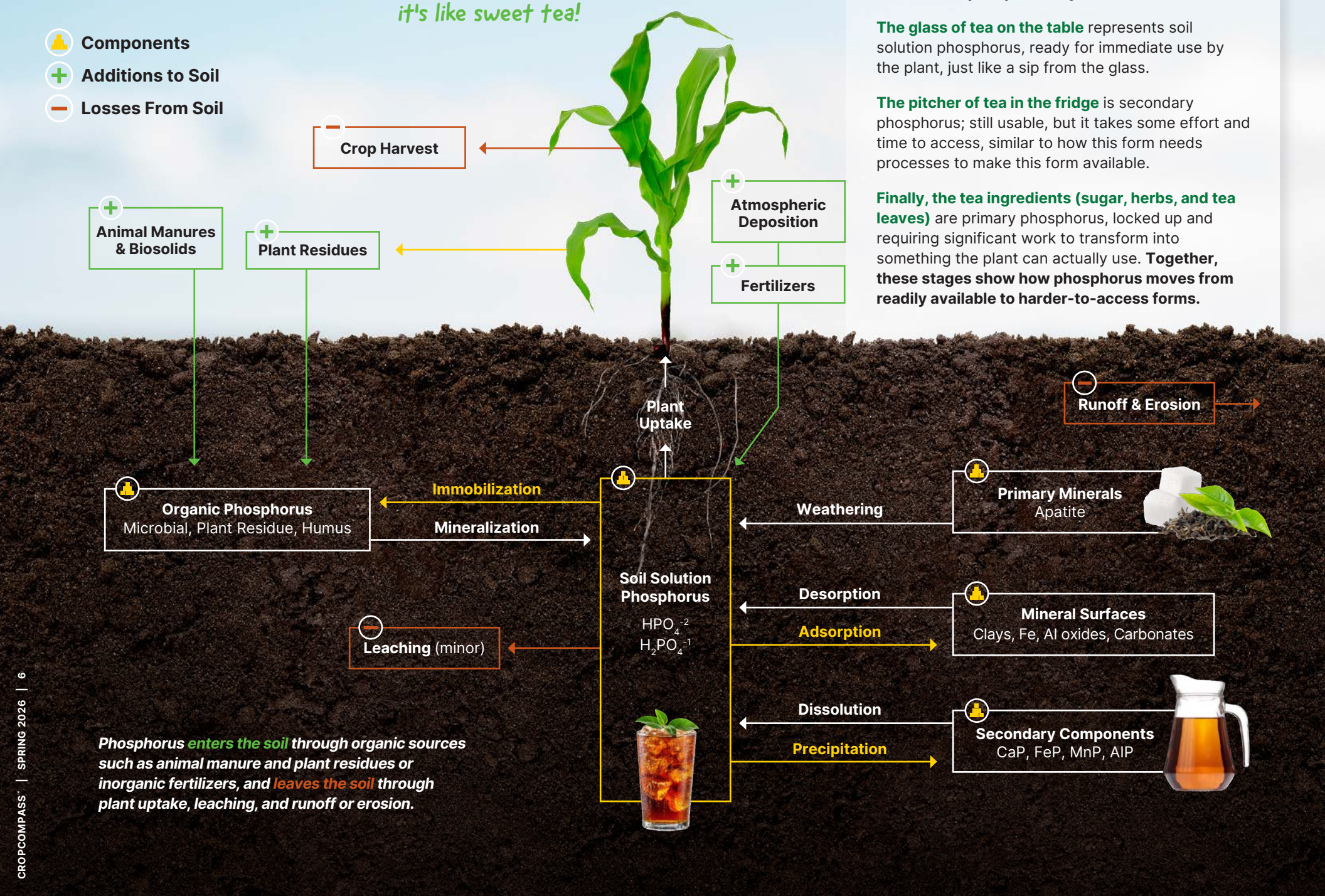
- What's my nutrient gap based on soil tests?
- Which timing works best for my crop stage?
- What alternatives do I have if supply tightens?
- How can I optimize blends for cost and performance?
- What logistics should I lock in now to avoid delays?

AGRONOMICS OF PHOSPHORUS

PHOSPHORUS CYCLE

it's like sweet tea!

- Components
- Additions to Soil
- Losses From Soil



Phosphorus enters the soil through organic sources such as animal manure and plant residues or inorganic fertilizers, and leaves the soil through plant uptake, leaching, and runoff or erosion.

Phosphorus in the Soil Environment

Think of the phosphorus cycle like sweet tea.

The glass of tea on the table represents soil solution phosphorus, ready for immediate use by the plant, just like a sip from the glass.

The pitcher of tea in the fridge is secondary phosphorus; still usable, but it takes some effort and time to access, similar to how this form needs processes to make this form available.

Finally, the tea ingredients (sugar, herbs, and tea leaves) are primary phosphorus, locked up and requiring significant work to transform into something the plant can actually use. **Together, these stages show how phosphorus moves from readily available to harder-to-access forms.**

"Understanding phosphorus cycling in soils supports more precise field-level application decisions aimed at reducing risk and improving efficiency."

Justin McCoy, PhD
Senior Agronomist

Why Is Phosphorus Important to the Plant?

Phosphorus is the plant's "energizer" or battery, driving growth and development by powering essential energy processes. It regulates the production, transfer, and storage of sugars, which are critical for strong root systems and successful seed formation.

As a vital component of nucleic acids, phosphorus supports DNA integrity, cell division, and protein synthesis, which are foundational steps for healthy, vigorous plants.

What to Know About the Phosphorus Cycle

- Plants can only absorb soil solution phosphorus.
- Inorganic fertilizers go straight into soil solution phosphorus but can be tied up by secondary minerals.
- In most soils, in-season phosphorus use efficiency ranges from 5 – 47%, with the rest at risk of fixation: P availability is controlled by Al and Fe at pH < 6.3 and Ca at pH above 7.0
- Phosphorus is a relatively immobile nutrient - **in most soils phosphorus moves 1/10 to ½ inch.**

PRO TIP

To overcome early-season phosphorus availability caused by cool, wet soil conditions, pair your fall or spring fertility program with a starter ("pop-up") fertilizer at planting.

Placing starter fertilizer in-furrow or 2x2 delivers a concentrated, readily available band of phosphorus right where young roots need it, maximizing early uptake, minimizing tie-up, and jump-starting seedling vigor.

Learn more from the Agronomists of Simplot Grower Solutions.

IDENTIFYING PHOSPHORUS DEFICIENCIES

Justin McCoy

SOIL TESTING, AN IMPERATIVE STEP

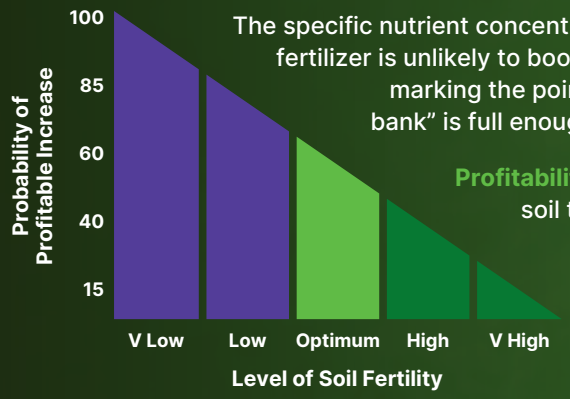
Soil testing serves as the road map for nutrient management. It helps increase efficiency and minimize risk by guiding phosphorus application decisions. Nutrient stratification in soil can lead to uneven nutrient availability. Understanding this through soil testing ensures balanced application.

PRO TIP

Sampling Depth Matters: Make sure you sample at the right depth for your cropping system. Soil test recommendations are only as reliable as the sampling technique. Work closely with your Simplot Grower Solutions Crop Advisor to ensure proper interpretation of results for accurate fertilizer recommendations.

Learn Why Soil Sampling is So Important

SOIL TEST CRITICAL (STC) LEVELS



The specific nutrient concentration where adding more fertilizer is unlikely to boost crop yield significantly, marking the point where the soil "nutrient bank" is full enough for optimal production.

Profitability Insight: The lower your soil test value, the greater the potential for profitable response to phosphorus application.

RIGHT TIMING MATTERS.

Advantages of each phosphorus fertilizer type & use pattern

Choosing the right phosphorus fertilizer isn't just about nutrient supply, **it's about optimizing crop performance, soil health, and return on investment.** Each fertilizer offers unique benefits based on its chemical form, solubility, and interaction with soil conditions.

Likewise, application patterns, whether broadcast, banded, or split, can significantly influence nutrient availability and uptake. Understanding these advantages helps growers align fertilizer strategies with crop needs, and the principles of the **4R Nutrient Management program.**

RIGHT RATE

Involves assessing plant nutrient demand and soil nutrient supply, including the availability of nutrients in manure, composts, crop residues and more.

RIGHT TIME

Includes assessing timing of plant nutrient uptake as well as the dynamics of soil nutrient supply.

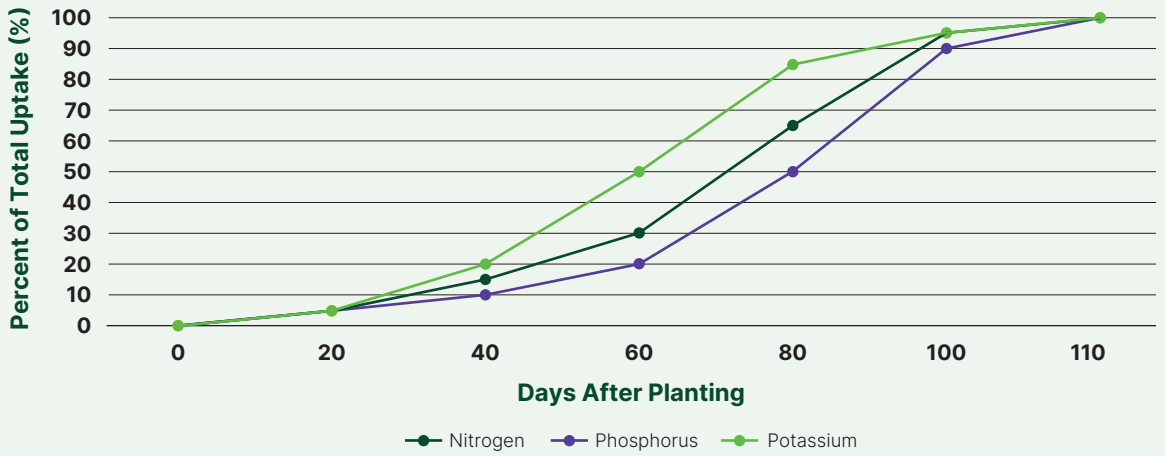
RIGHT SOURCE

Selecting the right source involves evaluating and responding to a number of factors including soil physical and chemical properties, blend compatibility and the availability of on-farm sources of nutrients.

RIGHT PLACE

Positioning needed nutrient supplies strategically, so that plants develop properly and achieve their yield potential.

CORN NUTRIENT UPTAKE TIMING



Haven't applied phosphorus yet? *Corn uptake remains relatively low until days 45 - 50, so there may still be time to make an effective in-season application.*

Data source: Simplot Grower Solutions internal studies.

Learn more about the 4Rs at The Fertilizer Institute.

How does Phosphorus Impact the Plant?

Can you recognize phosphorus deficiency? Phosphorus fuels the plant's most critical energy processes and when it's limited, the effects show up quickly and differently across crops.

CORN

Phosphorus Demand and Removal

Demand: 0.54 lb P_2O_5 $bushel^{-1}$
Removal: 0.35 lb P_2O_5 $bushel^{-1}$

Deficiency Symptoms

- Typically observed on young plants during cool, wet conditions
- Distinct reddish-purple color observed on oldest leaves
- Late-season deficiencies result in stunting of plants

Application Timing

1. Dry pre-plant applications of phosphorus fertilizer are common in the fall and early spring.
2. Applying liquid phosphorus fertilizers near the seed is helpful in managing early-season availability.

Photo Source: Bobby Golden

RICE

Phosphorus Demand and Removal

Demand: 0.38 lb P_2O_5 $bushel^{-1}$
Removal: 0.30 lb P_2O_5 $bushel^{-1}$

Deficiency Symptoms

- Symptoms appear on oldest leaves first in severe instances
- Presents as stunted plants that appear overly dark green to bluish
- Distinctively erect spindly leaves with minimal tillers
- Older leaves may become necrotic

Application Timing

1. Dry pre-plant applications of phosphorus fertilizer are common in the fall and early spring.
2. Applying dry phosphorus fertilizer prior to flood establishment is helpful in providing readily available phosphorus throughout the season.

Photo Source: Bobby Golden

ALFALFA

Phosphorus Demand and Removal

Demand: 18.75 lbs P_2O_5 ton^{-1}
Removal: 12 lbs P_2O_5 ton^{-1}

Deficiency Symptoms

- Difficult to determine visually as the most common symptom is stunted and dark green growth
- Tissue sampling is essential to determine phosphorus deficiency
- If mid-stem tissue levels are below 800 ppm (0.08%) PO4-P fertilization is necessary to reduce yield loss

Application Timing

1. Due to poor soil mobility of phosphorus, a dry application of phosphorus fertilizer pre-plant would be best, especially if it can be shallowly disked into the soil.
2. Annual applications of liquid or dry phosphorus should be made in the spring or fall to maintain an adequate supply of phosphorus.

Photo Source: extension.purdue.edu

Struggling with phosphorus deficiency? Contact a local agronomist.

PROCESSING
TOMATO

Phosphorus Demand and Removal

Demand: 1.5 lbs P_2O_5 ton^{-1}
Removal: 0.8 lbs P_2O_5 ton^{-1}

Deficiency Symptoms

- Purple coloring on the margins and underside of leaves, beginning first on the older leaves
- Slow and stunted growth, especially after transplanting
- Deficiency symptoms are most common early in the spring when soils are cool and wet
- High pH and the presence of free lime are commonly associated with phosphorus deficiency

Application Timing

1. Liquid or dry pre-plant applications of phosphorus fertilizer are common in late fall or early spring.
2. Applying liquid phosphorus fertilizer through the irrigation system is helpful in managing phosphorus deficiency after transplant.

Photo Source: yara.co.uk

SOYBEANS

Phosphorus Demand and Removal

Demand: 0.85 lb P_2O_5 $bushel^{-1}$
Removal: 0.52 lb P_2O_5 $bushel^{-1}$

Deficiency Symptoms

- Plants appear stunted and spindly, with rounded, smaller leaves
- Dark green or purple coloration of the leaves; necrotic spots on the leaves

Application Timing

1. Soybean plants have a steady, season-long uptake of P. Applications for this crop are made in the fall or pre-plant in the spring.
2. In a 2-year corn-soybean rotation, P is typically applied only prior to planting the corn crop.

Photo Source: Bobby Golden

CANOLA

Phosphorus Demand and Removal

Demand: 1.4 lb P_2O_5 $bushel^{-1}$
Removal: 0.82 lb P_2O_5 $bushel^{-1}$

Deficiency Symptoms

- Characterized by slow apical meristem growth
- Small leaves with associated purpling
- More susceptible to flea beetle hampering overall growth

Application Timing

1. Dry pre-plant applications of phosphorus fertilizer are common in the fall prior to/or at planting.
2. For in-season correction, foliar phosphorus with herbicide application have shown promising results.

Photo Source: Jeremy German

Demand information reflects industry knowledge and information amalgamated from the International Plant Nutrition Institute (IPNI), www.ipni.net.

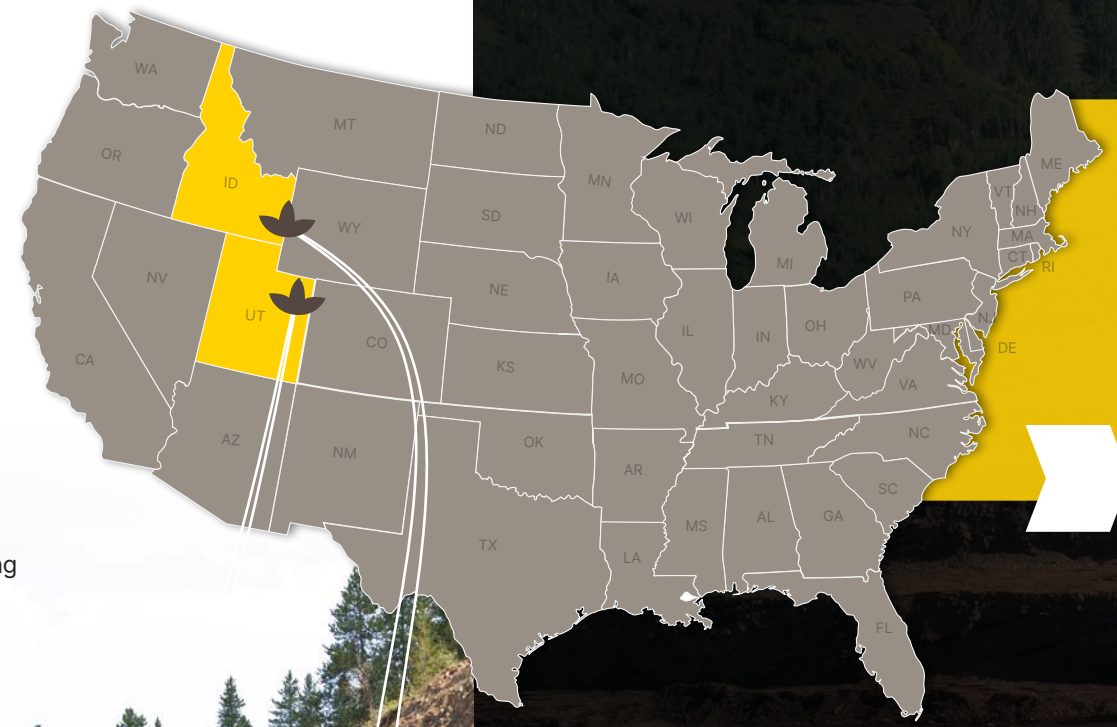
IT STARTS **UNDERGROUND**

Our Commitment Starts at the Mine

Before nutrients ever reach your field, they begin deep in the earth. **At Simplot, we mine them ourselves.** Many fertilizer suppliers rely entirely on the open market for phosphate. *We take a different approach.* By mining phosphorus ore in Idaho and Utah and manufacturing phosphate fertilizer in North America, we support consistent production of one of agriculture's most essential nutrients.

Phosphorus plays a foundational role in farming. Every crop season removes nutrients from the soil and replacing them is essential to keeping ground productive. As global demand for food increases, access to reliable phosphorus becomes even more important.

We are farmers ourselves and having our own phosphate source helps us keep nutrients moving when the season calls for it.



Where It Comes From

Smoky Canyon Mine — Southeast Idaho

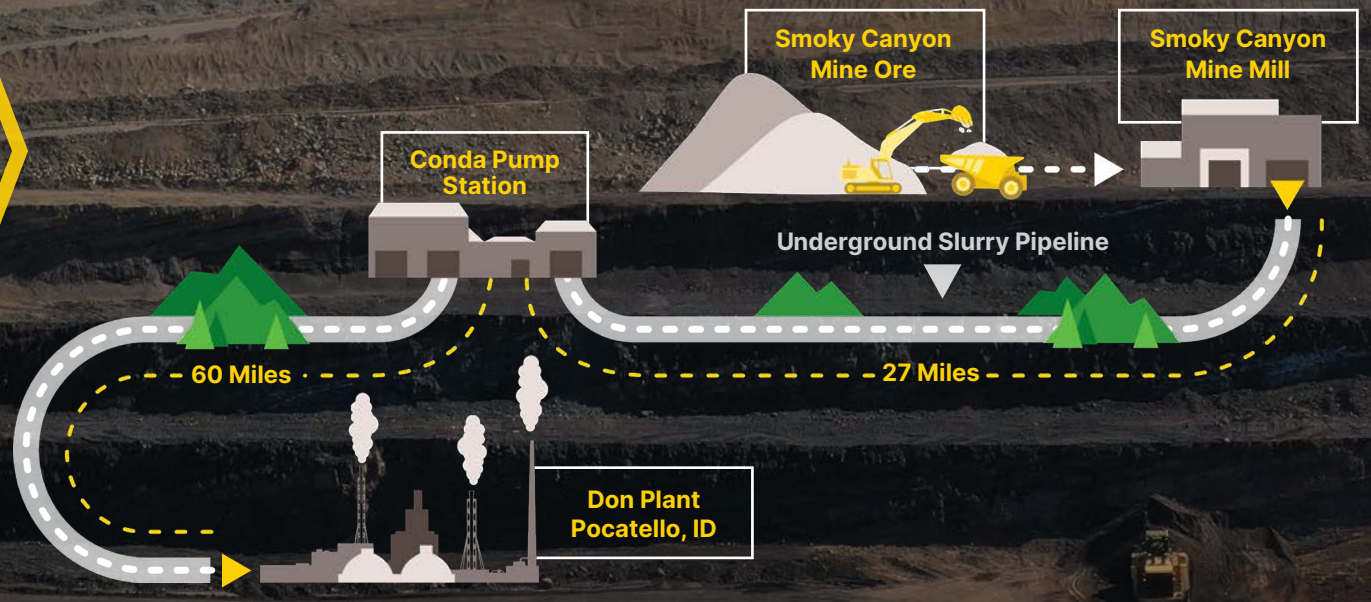
The Smoky Canyon Mine is located in the highlands outside of Afton, WY. Operations here consist primarily of mining phosphate ore.

Vernal Mine — Utah

The Vernal Mine is a phosphate ore mine found north of Vernal, UT. Ore from this facility is used at other Simplot facilities including Rock Springs.

HOW IT MOVES

After mining, the ore travels roughly 87 miles through an underground pipeline to our processing facilities in Idaho and Wyoming. It's a system designed to keep nutrients moving safely and consistently from mine to plant, supporting reliable production and distribution.



A Steady Foundation

Our phosphate story goes back more than 80 years, to when Simplot began processing phosphate in 1944 during wartime fertilizer shortages to help keep crops moving. While technology has evolved, the goal remains the same: **supporting growers with dependable nutrients produced responsibly.**

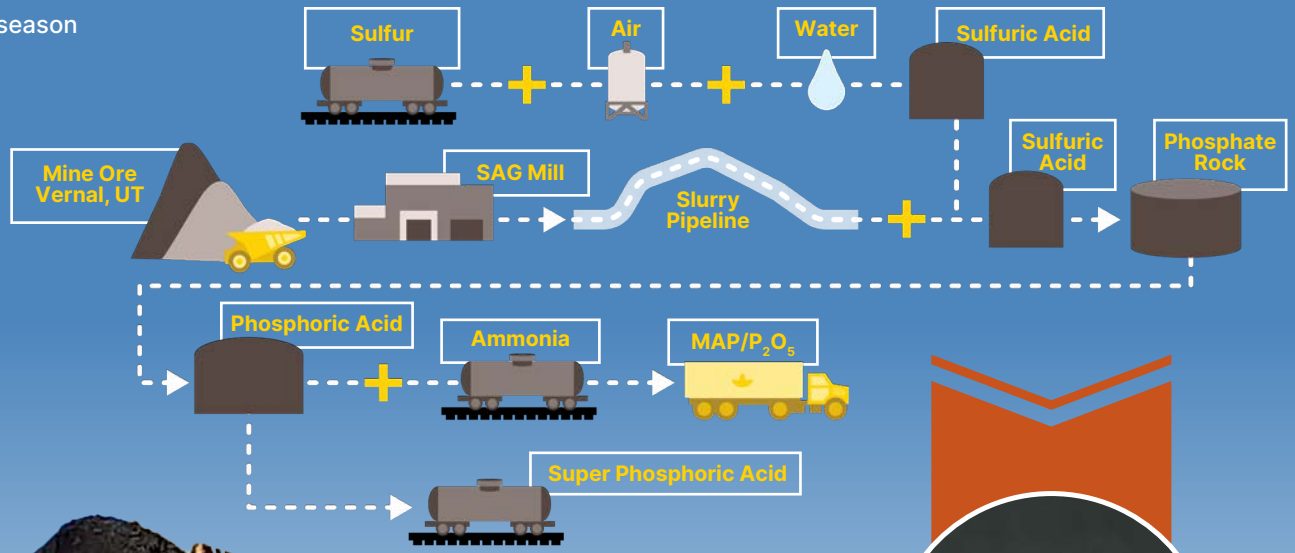
FROM ROCK TO RESULTS

How Mining Supports the Nutrients You Rely On

Once the ore reaches our facilities in Pocatello, Idaho, and Rock Springs, Wyoming, it's processed into the phosphate fertilizers that support root development, early vigor, and yield potential.

Controlling this part of the process helps support:

- Reliable, consistent nutrient products
- Phosphate fertilizer that performs the same, season to season
- Produced and distributed by a domestic supplier
- Product positioned in local markets to support timely application



Why Domestic Production Matters

Global fertilizer supply can change quickly, from weather to geopolitics to demand swings.

Because we mine and process our own phosphate in North America, we're able to keep product moving efficiently through our system - from production through local distribution. That integration helps ensure growers have access to high-quality phosphate fertilizer when they need it, season after season.

Sustainable mining and responsible production also help ensure phosphorus remains available for future generations of growers - something that matters for long-term soil health and food production.

What It Means for Your Acres

- **Supply continuity:** High-quality phosphate fertilizer produced in North America
- **Consistent quality:** dependable nutrient performance in every blend
- **Stronger blends:** phosphate sources matched to agronomy
- **Confidence through the season:** a solid foundation beneath your fertilizer decisions

Phosphorus starts in the ground, and so does the work to support your acres.

If you have questions, your Crop Advisor is always ready to help.