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**AGRICULTURE WITH A
PROBIOTIC EDGE**



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PIONEERING SUSTAINABLE AGRICULTURE WITH A PROBIOTIC EDGE

The need for sustainable agriculture solutions is paramount: farmers face higher demands for producing yields while contending with rising costs. These aspects are further confounded by the negative environmental impacts of traditional farming methods which require a specialized set of solutions without compromising on cost or accuracy. Solving these challenges all in relation to one another is what PharmGrade sets out to do each and every single day. PharmGrade is redefining sustainable agricultural practices with its innovative approach to soil health and crop yield. Rooted in the agricultural heartland of Idaho, the company draws from a rich farming heritage and leverages cutting-edge science to address modern challenges in farming. "All three of these influences –the commodity prices being low, the fertilizer price still being relatively high and then the pressure from the

Richard Tuttle,
CEO





sustainability side – creates the storm that a lot of our growers are trying to weather right now,” says Tyler Tuttle, Chief Commercial Officer of PharmGrade. At the forefront of PharmGrade’s mission is to empower farmers with the means necessary to not only resolve these challenges but revolutionize the way their crops are grown and harvested each season.

It’s no surprise that modern agriculture faces a convergence of challenges. Farmers grapple with rising input costs, fluctuating commodity prices, and increasing scrutiny over environmental impacts. The demand for sustainable practices, driven by both regulators and end consumers, is something that farmers in bulk haven’t learned to translate into an opportunity yet. For Pharmgrade, it’s all about helping the farmer or producer to create a better crop environment using sustainable products that drives a more significant crop yield each time. In these ways, PharmGrade is shifting the narrative. It is increasingly possible, with PharmGrade solutions, to enhance profitability and reduce dependency on traditional chemical inputs. “As a grower, what matters to me and how do I communicate that? It matters that I’m explaining to the end user or buyer the steps that I’m taking on the sustainability front – like replacing 30% of my synthetic nitrogen budget last year with that Nitros product that is 100% probiotic – and then explaining the profit-driven benefits of that too,” Tuttle explains.

PharmGrade offers sustainable agricultural solutions that focus on biodiversity, with a product portfolio built on a probiotic approach that revitalizes soil health and maximizes crop output—moving farmers away from the traditional farming method that saw individual diseases being treated with harmful antibiotics or

fumigation approaches. The company’s offerings fall into four key categories:

Flagship Probiotic Mixes

Blended with beneficial bacteria and fungi, these “multi-vitamins” for soil health provide a versatile solution for farmers. Products like Valley BIOS, PLC, MaxYield and Exponent integrate seamlessly with existing practices, such as liquid fertilizers, ensuring ease of adoption. These products enrich soil biodiversity, improving plant resilience and yield.

Nitros: Biofertilizer Revolution

This innovative product harnesses nitrogen-fixing bacteria to reduce dependency on synthetic fertilizers. Farmers using Nitros have reported huge reductions in synthetic nitrogen inputs, alongside yield improvements. “Replacing 30% of traditional farming units of nitrogen with Nitros has resulted in really big marketable yield differences over 100% conventional fertilizer,” explains Tuttle. By enabling growers to decrease chemical usage, Nitros addresses environmental concerns and provides significant return on investment.

Guardian: Probiotic Alternative to Fumigation

Guardian replaces traditional soil fumigants with a sustainable probiotic solution. This product improves soil health while introducing natural competition to harmful pathogens, reducing the need for harmful chemicals. Growers who adopt Guardian have seen both higher yields and healthier soil ecosystems—a win-win for sustainability and profitability, especially when driven

by buyers that need to reach sustainability goals for their own consumer base.

Slingshot: Dry Fertilizer Supercharger


Designed for applications where liquid products aren’t feasible, Slingshot enhances nutrient protection and acquisition in dry fertilizers. “Slingshot is a fertilizer supercharger, so we’re really targeting nutrient protection and nutrient acquisition,” says Tuttle. Its freeze-dried format also allows PharmGrade to expand its reach globally, tackling logistical challenges and enabling broader adoption.

One notable success involved a potato producer in Idaho facing poor soil conditions and low yield expectations. Using PharmGrade’s Guardian protocol, the grower saw yields soar from the expected 300 sacks per acre – not a big yield by any means– to 550 sacks per acre, an unprecedented turnaround. “They couldn’t fumigate and so we were able to come in with three broadcasts of Guardian. At that time, you even had the buyer communicating up the chain that it was going to be a crop failure, and they’d need to file for insurance. Suddenly, after three applications of the probiotic solution, those three fields averaged 550 sacks to the acre of the biggest, most beautiful potatoes that they had all year,” says Tuttle.

The potential of PharmGrade goes beyond profit; it delivers a use case to farmers seeking to transform their own practices to ensure long-term security and deeply rooted change. PharmGrade’s approach is grounded in education and evidence. The company works closely with growers, often starting with small-scale trials to demonstrate the efficacy of its products. By framing



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sustainability as a profitability driver rather than a constraint, PharmGrade is reshaping traditional farmer perceptions. PharmGrade is rapidly expanding its footprint, both nationally and internationally. Domestically, the company is entering markets in the Midwest and Southern U.S., targeting diverse crops such as corn, soybeans, and rice. Internationally, interest in PharmGrade’s solutions has surged, with interest or trials underway in regions as diverse as Ethiopia and China. PharmGrade will continue to stand out. Their focus on biodiversity means that all parties involved in farming– people and the planet writ large – can build better plant ecosystems. By turning sustainability into a practical and profitable strategy, PharmGrade is not just responding to industry challenges—it’s setting a new standard for what farming can achieve. 

As climate change accelerates and natural resources become scarcer, the need for innovative and sustainable farming practices has never been more urgent. Agriculture today demands solutions that not only maximize productivity but also minimize environmental impact, conserve water, and promote soil health. The call for greener practices isn't just a trend—it's a necessity for a thriving and resilient planet.

In this special edition of Agriculture Outlook Magazine, we are proud to feature the Top 10 Sustainable Agriculture Solution Providers, companies that are redefining the future of farming. These companies are

harnessing cutting-edge technology and eco-conscious strategies to address the pressing challenges of modern agriculture. From advanced precision farming techniques and water-saving irrigation systems to soil regeneration and eco-friendly crop management, these innovators are leading the charge toward a greener tomorrow. These companies are not only empowering farmers with the tools to succeed but are also inspiring the world to reimagine agriculture as a force for environmental stewardship and sustainable development. Dive into their stories and discover how they are cultivating a future where sustainability and innovation grow hand in hand.



Pharmgrade



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Description

At the forefront of PharmGrade's mission is to empower farmers with the means necessary to not only resolve these challenges but revolutionize the way their crops are grown and harvested each season. For Pharmgrade, it's all about helping the farmer or producer to create a better crop environment using sustainable products that drives a more significant crop yield each time.