



Backgrounder

Agrinos – Leading the Biological Revolution for Agricultural Production

To improve the productivity and sustainability of the 21st-century farmer, Agrinos is helping shape the future of modern agriculture. The world needs innovative and sustainable solutions to increase agricultural output while reducing inputs in order to meet the needs of our growing global population.

Agrinos' global research, development and agronomy team is putting our innovative products at the forefront of microbial and biological crop input innovation. We are in the midst of an incredible revolution in human, animal and plant biology that has rapidly emerged due to advances in DNA sequencing and bioinformatics—and our team is passionate about translating this revolution into innovative, sustainable biological crop solutions.

Agrinos' proprietary products developed through our High Yield Technology (HYT[®]) platform have pioneered the quickly growing crop biologicals sector of our industry and have been proven to drive yield and quality improvements across diverse crops and environments across the globe. Agrinos focuses on two platforms of products—microbials and biostimulants. Agrinos microbials enhance crop nutrition by improving the soil microbiome to support plant health and yield. Agrinos biostimulants deliver complex nutrient solutions which support and promote healthy plant function across a variety of crops and growing conditions.

The Agrinos global team of scientists and agronomists is conducting cutting edge research to harness the power of our highly diversified microbial collections to deliver innovative products to improve the health of the soil microbiome. Healthy soil is the critical foundation required for crops to reach their full potential and, ultimately, to bring prosperity to the grower.

Agrinos Overview

Agrinos is a biological crop input provider committed to improving the productivity and sustainability of modern agriculture worldwide. The Agrinos portfolio of HYT products helps farmers to practice profitable agriculture by providing increased crop productivity, improved quality, enhanced efficiency of conventional fertilizer and a reduced environmental footprint. Extensive research and field trials have proven Agrinos' HYT products drive yield and quality improvements across a broad range of specialty and commodity crops in a wide variety of environments and growing conditions. Products featuring Agrinos' HYT platform are registered for commercial agricultural sales in over 20 countries and are currently sold in the U.S., Brazil, India, China, Indonesia, Malaysia, Mexico and Spain.

Facilities and Locations

Headquartered in Oslo, Norway, Agrinos currently has corporate hubs in North America, South America, Europe and India to serve key regional agricultural centers interested in capturing the value of Agrinos' solutions for growers. Agrinos recently transitioned several corporate functions to U.S.-based operations in California, Oregon and Texas. In 2014 Agrinos opened its Global Biological Innovation Center, a state-of-the-art research and development facility in Davis, California. Locating this facility in Davis closely aligns Agrinos with industry-leading talent and key centers of biological innovation. In 2015 Agrinos added a second production facility in Clackamas, Oregon, which is dedicated exclusively to microbial production. Strategically located relative to the research and development facility in Davis and Agrinos' original production facility in Sonora, Mexico, the Oregon facility was added to supply both domestic and international markets and meet growing demand from distribution partners and growers for existing and innovative new products.

Science & Technology – Harnessing the Power of Microbes and Nutrient Complexes for Healthier Plants

Ground-breaking innovation that enriches the soil microbiome is helping to shape the potential of modern agriculture—and Agrinos is a leader in delivering on that potential. Our research team is dedicated to creating opportunities for improved plant health. We're rapidly uncovering new insights about how to leverage the oldest and most abundant form of life known to scientists: soil microbial communities.

The health benefits found from having a beneficial and vigorous microbiome are now very well established in humans. This same revolution is happening in agriculture. Agrinos has been a pioneer in the field of soil microbiome work and has created and commercialized diverse biological crop inputs which are powered by a consortium of microbes, both aerobic and anaerobic. Just as human gut microbial composition affects human health, Agrinos' uniquely robust microbial consortium harnesses the full potential of soil microbiome to support plant productivity.

New levels of plant health and productivity will require new ways to support strong plant development and enhance critical metabolic and photosynthetic pathways in the crop during key growth stages. Agrinos all-natural specialty nutrient products maximize the bioavailability of macro- and micronutrients via a unique formulation process which avoids harsh chemical extraction. The nutrients found in these products—including carbon, nitrogen, true protein, free amino acids and other micronutrients—are essential to plant development and deliver quick results during the growing season.

Plants respond with greater productivity, maximizing their potential in typical growing conditions as well as during times of heat, drought and other environmental stress.

Agrinos biological crop inputs—microbials and biostimulants—contain naturally derived bio-compounds and microorganisms or microbes to help support crop health and productivity. These products leverage the natural biological function of soil microbes and their close relationships with plants to deliver benefits to the crop, the soil and growers.

Cutting-Edge Research and Continuous Innovation

Through its scientific formulation and proprietary co-fermentation process, Agrinos has created a platform of products with a robust consortium of microbes and/or complex blends of critical nutrients. When applied, this formulation of commensal and beneficial microbes creates an environment favorable for plant growth in both ideal and harsh conditions. Agrinos scientists working at our Global Biological Innovation Center in Davis, California—a global hub for crop biological product innovation—focus their work on improving plant productivity with groundbreaking products that support the plant from the soil up, as well as all-natural products that foster success during critical plant growth stages.

Agrinos Products

Agrinos microbial and biostimulant crop input products feature proprietary High Yield Technology (HYT) and provide benefits by strengthening the soil microbiome and delivering critical, highly bioavailable nutrients to help plants prosper. Once integrated into a grower's practices, Agrinos products are proven to perform consistently across a broad range of crops, soils and environments. Agrinos products are compliant with organic production standards, are OMRI listed in the United States and recognized by several regional certification organizations. They are also highly compatible with common application methods.

Microbial Product Platform

The microbial product platform, which includes HYT A and VAMAX products, are produced by a fermentation process utilizing either a consortium of microbes or fungi that help promote a highly productive microbial system in the soil.

HYT A products are soil-applied proprietary liquid solutions that promote a highly productive microbial system in the soil to support plant health, quality and yield. HYT A products improve fertilizer efficiency and create an enhanced crop nutritional environment. HYT A products interact with the plant root system to increase the productive capacity of both the soil and the plant by freeing up nutrients bound to soil particles and crop residue, stimulating root growth for enhanced nutrient uptake and fostering the growth of a healthy soil microbiome.

Following is a list of Agrinos' HYT A product brands and the countries in which they are sold.

- **iNvigate**[®] – U.S.A.
- **VitaComplex**[®] – Brazil
- **N-Gage**[®] – U.S.A., marketed by Security Seeds
- **HYT**[®] **A** – Southeast Asia, Spain and U.S.A.
- **Amplus**[®] – India, marketed by Rallis India Ltd.
- **Arito**[®] – India, marketed by DCM Shriram, Ltd.
- **Sukuna**[®] – India, marketed by DCM Shriram, Ltd.
- **WoYiDuo-1** – China

Biostimulant Platform

The biostimulant product platform, which includes HYT B and HYT C product lines, delivers complex nutrient solutions which support and promote healthy plant function across a variety of crops and growing conditions.

HYT B products are unique nutrient solutions that increase the activity of multiple critical metabolic and photosynthetic pathways in the crop. The nutrients found in HYT B—including carbon, nitrogen, true protein, free amino acids and other micronutrients—are essential to plant development and are known to boost plant metabolism, stimulate root growth, and support plant health and plant vigor during critical growth stages. HYT B products also provide a source of nitrogen that is highly bioavailable and complements inorganic nitrogen. Use of HYT B improves a plant's capacity to resist stressful growing conditions, such as drought and excessive heat or cold, to support improved yields.

Following is a list of Agrinos' HYT B nutrient solution product brands and the countries in which they are sold.

- **B Sure**[®] – U.S.A.
- **AminoVita**[®] – Brazil
- **HYT[®] B** – Southeast Asia and U.S.A.
- **HYT B** – Spain
- **Amplus Active**[®] – India, marketed by Rallis India, Ltd.
- **Chemfree**[®] – India, marketed by Zuari Agri Sciences, Ltd.
- **Sampsa**[®] – India, marketed by DCM Shriram, Ltd.
- **Red Zone** – U.S.A., marketed by Security Seeds.

HYT C product solutions are nutrient powder derived from organic, biologically extracted chitin, which supports crop productivity and soil health. When applied to the soil, HYT C promotes a more robust soil microbial environment and interacts with the plant to increase crop productivity through faster field establishment and higher nutrient uptake. Use of HYT C has been shown to improve root structure, strengthen plant abiotic stress-response functions and enhance soil health.

Following is a list of Agrinos' HYT C nutrient solution product brands and the countries in which they are sold.

- **Agrinos 5-0-0** – U.S.A.
- **MaisRaiz**[®] – Brazil
- **HYT[®] C** – Southeast Asia and U.S.A.
- **Cronos**[®] – India, marketed by DCM Shriram, Ltd.
- **NIPiT**[®] – India, marketed by Nagarjuna Agrichem, Ltd.

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