

Solving Agronomic Challenges with Innovative Technology Platforms

Custom Solutions for Agribusiness Partners

Agricen helps agribusinesses address complex agronomic challenges by offering access to a critical mass of technologies, novel ingredients and responsive product development competencies. Working closely with our partners, we successfully bring integrated solutions to market.

Innovative Technology Platforms

Agricen's innovative technology platforms enable us to flexibly and dynamically build targeted, customized and scalable solutions for our partners. Platforms can be used alone or in combination to address partner needs and desired functionalities.

Our cutting-edge platforms:

- Yield highly active microbial metabolites and other biochemicals
- Convert *any* organic feedstock into bioactive chemistry
- Allow us to sustainably produce and harness different suites of bioactive chemistry with targeted functionalities, including nutrient efficiency, abiotic and biotic stress, and crop and food quality
- Yield end products that are aqueous, contain few to no solids and are typically near-neutral in pH, enabling wide flexibility in use, including standalone and tank mix applications as well as direct manufacturing with fertilizers and other chemistries



Nutrient Release TECHNOLOGY

Nutrient release technology (NRT) is our cornerstone biological technology platform designed to improve the availability and uptake of a broad range of nutrients, including macronutrients and micronutrients. When used with fertilizers, sprayed on plant residues, or applied directly to the soil, products formulated with NRT technology help to increase nutrient use efficiency, enhance root growth and development, and improve plant performance.

Key Features & Benefits:

- Improves nutrient availability, uptake and utilization
- Enhances nutrient use efficiency
- Promotes better root growth & development
- Improves plant performance
- Optimizes yield potential



Carbon-Based TECHNOLOGY

Carbon-based technology (CBT) is a breakthrough technology platform that uses a patented bioconversion process to convert leonardite into a suite of highly bioactive metabolites and biochemicals – accelerating the benefits of a traditional leonardite product in the plant/soil system. Full biological conversion ensures a highly homogeneous and soluble end product for superior handling and compatibility.

Key Features & Benefits:

- Improved ability to chelate nutrients for plant uptake
- Plant growth-promoting microorganism benefits
- Improved root growth and development
- Highly stable and compatible, enabling a variety of fertilizer formulations, including calcium and high-load blends



Marine-Based TECHNOLOGY

Marine-based technology (MBT) is a breakthrough technology platform using biological conversion of kelp to deliver superior abiotic stress tolerance and improved plant growth, quality and productivity. The MBT end product is OMRI listed and is highly homogeneous and soluble for superior handling and compatibility.

Key Features & Benefits:

- Increased abiotic stress tolerance, including mitigation of salt and drought stress
- Improved seed germination, early plant establishment and vigor
- Enhanced vegetative and root development
- Improved plant growth, quality and productivity



Phosphorus-based technology (PBT) is a breakthrough technology platform designed to improve phosphate utilization for increased phosphate use efficiency, plant growth and plant development. PBT utilizes a specialized biological community rich in phosphate solubilizers and delivers a diverse group of functional secondary metabolites that provide enhanced phosphorus uptake and utilization while also promoting plant growth.

Key Features & Benefits:

- Improves phosphorus availability, uptake and utilization
- Enhances phosphorus use efficiency
- Provides phosphorus stress relief
- Promotes plant growth



Micronutrient efficiency technology (MET) is a biological technology enriched for increased availability, uptake and utilization of micronutrients from soil and applied insoluble sources.

Key Features & Benefits:

- Improves micronutrient availability, uptake and utilization
- Enhances nutrient use efficiency
- Improves plant performance



Nitrogen efficiency technology (NET) is a biological technology platform with a triple mode of action designed to increase nitrogen (N) use efficiency by providing proprietary N-fixing bacteria, recruitment of soil N fixers to associate with plant roots and increased mineralization and utilization of organic N pools.

Key Features & Benefits:

- Improves nitrogen availability, uptake and utilization
- Enhances nitrogen use efficiency
- Reduces nitrogen loss potential
- Optimizes yield potential

Commercialization & Development Opportunities

Using our diverse platforms and integrated R&D infrastructure, we are able to:

- Customize solutions to address major grower challenges:
 - Nutrient efficiency
 - Abiotic & biotic stress
 - Crop & food quality
 - Sustainability
- Develop solutions as individual technologies or integrate them into:
 - Seed treatments
 - Plant nutrition/health products
 - Crop protection
- Develop solutions for crop-specific targets

Use Case Examples

Dry Fertilizer Enhancement

Agricen is an established leader in dry fertilizer enhancement with commercialized technology deployed on three continents and proven results across N, P and K fertilizers. In the autumn of 2023, we will treat over 600,000 tons of dry P and K fertilizers through retail channels in the United States alone. Our application rates are highly concentrated. The technology has been tested at manufacturing temperatures well above 100°C and in a broad range of incorporation or application timings. We have successfully applied our technology at multiple points during production, with post-production coatings and dust control agents as well as with downstream pre-application equipment just prior to the farm gate.

Abiotic Stress Mitigation with a Standalone Product or Combined Formulation

Our technologies can be used to create standalone offerings or they can be combined into custom formulations. A commercialized standalone product based on our marine-based technology (MBT) is sold as a competitor to other seaweed extract products marketed for abiotic stress mitigation, with differentiators that include superior handling and compatibility due to the high solubility of the end product. Two additional commercialized products utilize MBT as part of a combined formulation. One combines MBT with our nutrient release technology for application with in-furrow liquid fertilizers to increase nutrient uptake while reducing the impact of abiotic stress conditions at planting. The second combines it with our carbon-based technology to reduce the impact of abiotic stress in row crops while also enhancing nutrient uptake.