



**AGNYTE TECHNICAL DATA SHEET**

Agnyte is a microbial product applied to crops to enhance growth, improve resistance to abiotic stress and promote soil health. Agnyte has been proven to increase crop yields, improve sustainability and reduce input costs, resulting in increased profitability to growers.

### COMPOSITION

The consortium of living microbes in Agnyte have been carefully selected to increase delivery of nitrogen to the crop and enhance the bioavailability of potassium and phosphorus.

There are 300,000,000 microbes found in every gram of Agnyte.

Azospirillum brasilense	1x10 <sup>8</sup> cfu/g	Fixes atmospheric nitrogen and produces plant growth stimulants (phytohormones)
Azotobacter chroococcum	1x10 <sup>8</sup> cfu/g	Fixes atmospheric nitrogen and improve plants resistance to plant salt stress
Bacillus megaterium	1x10 <sup>8</sup> cfu/g	Fixes atmospheric nitrogen and enhances bioavailability of phosphorus and potassium.
Total Concentration	3x10 <sup>8</sup> cfu/g	Increases yields, grain quality and resistance to abiotic stress in addition to improving soil health and overall plant vigour.

\*Agnyte bacteria are neither mutants nor genetically modified organisms.

### N3-FOLIAR

N3 Foliar proprietary technology is a key component of the Agnyte product. The production and formulation are responsible for 3 critical product features;

- Survival and optimally functionality of microbes
- Ambient shelf life
- Compatibility with selected crop inputs



N3 Foliar Technology (N3-FT) is specifically formulated to protect the Agnyte bacteria whilst in pack and once released onto the crop. N3-FT ensures Agnyte bacteria are found at very high in-pack concentrations and continue to survive and replicate once sprayed onto the crop.

The delivery of a high concentration of living and stimulated bacteria is critical to a products performance and is a leading factor is Agnyte's superior efficacy and performance in a broad range of crops in diverse environmental conditions and climates around the world.





## BENEFITS

### NITROGEN

The beneficial bacteria found in Agnyte extract nitrogen from the atmosphere and transform it into ammonium, a usable form of nitrogen for plants. This extra supply of nitrogen is particularly beneficial during the peak nitrogen demand periods of plant growth.

### PHOSPHOROUS AND POTASSIUM

Agnyte bacteria enhance the bioavailability of phosphorus and potassium allowing plants to absorb these nutrients more easily and efficiently, leading to improved nutrient uptake and utilization of these essential macronutrients resulting in improved plant growth, development, and yield.

### ENVIRONMENTAL BENEFITS

Agnyte can also be used as a tool for growers to enhance the sustainability of their farming operation. The application of Agnyte often leads to improved soil health and quality by promoting the growth of beneficial bacteria and fungi, improving soil structure, nutrient availability, and water-holding capacity.

Agnyte also enables growers to reduce their levels of fertilizer which can be harmful to the environment due to their high energy requirements, emissions, and potential for leaching into waterways. The reduction of fertilizers can help to reduce greenhouse gas emissions associated with the production and transportation of these fertilizers. Overall, Agnyte has the potential to improve soil health, reduce fertilizer application and the overall cost of crop nutrition.



## USES AND DOSAGES

Agnyte can be used on a broad varieties of plant species including, but not limited to, cereal and legume crops, rice, cotton, sugar beets, potatoes, tobacco, cereal fodder and lucerne.

Foliar application dose and time: 20g/acre (36oz pack = 50 acres) diluted into 15-40 gallons / acre of non chlorinated water (pH range 6-8).

### Application Timing

Agnyte can be applied up to three times per season. Speak with your Planet Earth Representative or crop advisor for application recommendations and timing.

Agnyte maybe used in two distinct ways, depending on the motivation of the grower.

#### Option 1. Add Agnyte into standard fertilizer program

Maintain fertilizer levels and add Agnyte approximately 5-7 days before fertilizer application.

This application is intending to deliver nitrogen for a period of 45-60 days post application. This selected option is intended to drive crop yield.





### Option 2. Add Agnyte and reduce fertilizer application

Add Agnyte and reduce fertilizer application by up to 20 kg N / acre. Apply Agnyte one week prior to peak nitrogen demand and either reduce fertilizer across split applications or early in the crop cycle.

The intention of this option is focused on reducing environmental impact including green house gas emissions and potential nitrogen leaching, in addition to improving soil health and maintaining or slightly increasing yield.

#### Number of Applications

If applying one application only, apply around V5-V6 stage of the crop.

If applying a second or third application (focused on grain protein or oil content, apply 5-7 days prior to peak nitrogen demand during grain filling.

Examples of the recommended application timing for Agnyte.

MAIZE CANOLA	Application	Application Timing	N Fertilizer	Benefit	Outcome
	First	V5-V6	Eliminate pass or reduce quantity	Reduced input cost Lower carbon footprint Reduce N runoff	Improved sustainability
	First	V5-V6	Standard	Increase nitrogen fixation and enhance P & K bioavailability	Increased yield
	Second	R1	Standard	Increase nitrogen fixation	Increased grain protein or oil content

SOYABEAN	Application	Application Timing	N Fertilizer	Benefit	Outcome
	First	R1	Eliminate pass or reduce quantity	Reduced input cost Lower carbon footprint Reduce N runoff	Improved on farm sustainability
	First	R1	Standard	Increase nitrogen fixation and enhance P & K bioavailability	Increased yield
	Second	R4	Standard	Increase nitrogen fixation	Increased grain protein or oil content

#### Warnings:

- ⌚ Do not use chlorinated water (or use recommended de chlorination agent)
- ⌚ Do not use water with pH outside 6-8
- ⌚ Do not mix with agricultural chemicals (check compatibility table)
- ⌚ Do not spray systemic chemicals within 2 days of the Agnyte application.





## APPLICATION DETAILS

### Mixing Order

Make sure Agnyte is added at the final stage into the spray tank after the dilution of any other bio stimulants being added. Ensure Agnyte is agitated well after being added to the spray tank.

### Water Testing and Treatment

- pH – water should be tested for pH range and buffered with neutralising agents if outside the range of pH 6-8.
- Chlorine – if using town or treated water, test for detection of chlorine and use a de chlorination agent as required.

### Products to Avoid

Avoid products containing chlorine, copper and manganese. Product with a pH below 6 and above 8 should be avoided. Avoid adding products that contain bactericides.

## COMPATIBILITY

It is not recommended to combine Agnyte with agricultural chemicals. Agnyte maybe used together with other bio stimulant products with a pH between 6.0 – 8.0. Check the Planet Earth Agronomy website for further information.

## STORAGE and HANDLING

Store product in a cool environment. Do not exceed 65°F. Product can be stored at or under 65°F for 12 months. For longer storage periods, store under refrigerated conditions for a maximum of 24 months. Open product when ready to use.

## CONDITIONS OF SALE AND WARRANTY:

The company offers this product under the following agreed conditions of sale and warranty. The Directions for Use of this product have been developed following rigorous testing and trials. However, it is impossible to take into account all variables and eliminate all risks associated with its use. Injury or damage may result due to conditions beyond the control of the company. The company warrants only that this product conforms to its chemical description on the label and is believed to be reasonably fit for the purposes referred to in the Directions for Use when used as directed under normal conditions. The company makes no other express or implied warranty of fitness or merchantability or any other express or implied warranty. In no case shall the company be liable for consequential, special or indirect damages resulting from the use or handling of this product. Any deviation or exception from this warranty must be in writing and signed by an authorized representative.

