

AGNYTE

Microbial Nitrogen Solution

Product Data Sheet

FORMULATION

Foliar Microbial

USE

Pair with synthetic N

Product Overview

Agnyte is a foliar-applied microbial product from Agnetic Bio designed to be used alongside a synthetic fertilizer program. It supplies biologically-fixed nitrogen and improves crop nutrient use efficiency, helping growers reduce synthetic nitrogen rates without sacrificing yield.

Product	AGNYTE (Agnetic Bio)
Type	Liquid microbial inoculant – consortium of nitrogen-fixing bacteria
Application	Foliar spray (bypasses soil variability; includes UV protection)
Primary purpose	Supplement synthetic N program; improve nutrient use efficiency (NUE); lower input costs
Typical N reduction	~30 kg N/ha (~27 lb N/acre) without yield loss in commercial programs
Distribution (USA)	Planet Earth Agronomy

Mode of Action

Agnyte contains a consortium of bacteria delivering three reinforcing benefits:

Mode of Action	Function
Nitrogen fixation	Converts atmospheric N ₂ into plant-available ammonium, supplying biological nitrogen alongside the synthetic program.
Nutrient use efficiency (NUE)	Improves uptake of applied N, P, and other nutrients; reduces leaching and lock-up in the soil.
Phytohormone production	Bacteria produce cytokinins, auxins, gibberellic acid, and siderophores—driving root development and shoot growth.

Because Agnyte is applied to the leaf rather than the soil, it avoids the variability of temperature, pH, moisture, and microbial competition that limits soil-applied biologicals. The formulation includes UV protection to maintain organism survival after foliar application.

Registration & Distribution

Region	Registration
European Union	Registered in 26 countries under EU Regulation 2019/1009 (Nutrient Use Efficiency, Quality Traits)
USA – registered	California (new), Illinois, Indiana, Kentucky, Michigan, Minnesota, Missouri, Nebraska, Ohio, Oregon, South Dakota
USA – pending	Colorado, Maryland
Other markets	Commercial use reported in Canada and Brazil

Always confirm current registration in your state or country before ordering. State registration lists are updated regularly; check with the distributor.

Application Guide — Field Crops

Field crops have the strongest field-trial dataset for Agnyte. Typical use case: reduce in-season synthetic nitrogen by approximately 30 kg N/ha (≈27 lb N/acre).

Crop	Application Stage	Typical N Reduction	Trial Coverage
Corn (Maize)	V4–V8 vegetative growth	~30 kg N/ha	USA + EU
Soybean	V3–V5 vegetative growth	Supplemental N support	USA
Canola	4–6 leaf stage	~30 kg N/ha	EU, AU
Sunflower	4–8 leaf stage	~30 kg N/ha	EU
Wheat / Small grains	Tillering to early stem extension	~30 kg N/ha (program dep.)	EU (general)

Application Guide — Specialty Vegetables

EU field trials cover the following high-value vegetable crops. Application stages align with peak nitrogen demand.

Crop	Application Stage	Benefit	Trial Coverage
Bell pepper	Post-transplant + bloom	Yield + quality	EU
Cucumber	Vegetative + fruit set	Yield + N efficiency	EU
Lettuce	Mid-vegetative	Yield + uniformity	EU

Application Guide — Tree & Permanent Crops

Tree and permanent crops are a logical fit for Agnyte given the biological mechanism, and the product is registered in California—the principal US avocado-producing state. The application windows below align with established foliar-feeding timing for these crops.

Crop	Suggested Application Windows	Biological Rationale
Avocado	Spring flush • Post-bloom / fruit set • Summer flush	Supports nitrogen supply during peak vegetative and reproductive demand; phytohormones support root and shoot balance relevant to alternate-bearing.
Citrus (orange, lemon, mandarin)	Spring flush • Post-bloom • Summer flush	Foliar microbial N supplements fertigated N during fruit fill.
Tree nuts (almonds, pistachios, walnuts)	Bud break • Post-bloom • Kernel fill	Pairs with split synthetic N applications to improve season-long NUE.
Wine & table grape	Pre-bloom • Berry set • Veraison	Root system support and improved N uptake during canopy development.

Avocado note — confirm rates with distributor

Avocados are not currently in Agnetic Bio's published field-trial list, which covers soybean, corn, canola, sunflower, bell pepper, cucumber, lettuce, and maize. The biological mechanism is well-suited to avocados, and California registration is in place, but specific application rates and product-stewardship guidance for avocado should be confirmed in writing with Agnetic Bio or Planet Earth Agronomy before commercial use. A small pilot block is the recommended starting point.

Pairing with Synthetic Fertilizer

Agnyte is a complement to a synthetic nitrogen program, not a replacement. The recommended workflow:

Step	Action
1. Baseline	Maintain soil, leaf, and water testing to establish nutrient status.
2. Plan the trim	Reduce synthetic N by ~20–30 kg/ha for annual crops, or a proportional share of in-season N for tree crops. Hold the base unchanged.
3. Apply Agnyte	Foliar spray at the crop-specific stage(s) listed above. Confirm rate per label / distributor recommendation.
4. Validate	Use tissue analysis and yield/quality data to confirm performance before scaling.

Expected savings: At recent US urea pricing (~\$1,070/ton), a 30 kg N/ha reduction is worth roughly \$70/ha (~\$28/acre) in fertilizer cost—before accounting for any yield or quality upside.

Handling, Storage & Documentation

Storage	Cool, dry, out of direct sunlight. Keep container sealed. Refer to label for shelf life.
Tank mix	Conduct a jar test before mixing with adjuvants, foliar nutrients, or crop-protection products. Avoid mixing with high-rate copper or chlorinated water that may damage live organisms.
Water quality	Use clean water, pH 6.0–7.5 where possible. Apply within the window indicated on the label after mixing.
Safety	Refer to manufacturer SDS for full handling, PPE, and disposal guidance.
Official documents	Manufacturer TDS (Agnyte N2 v1.3, Feb 2025), label, MSDS, and registration certificates available from Agnetic Bio / Planet Earth Agronomy.

Disclaimer

This data sheet is a grower-facing reference compiled from publicly available Agnetic Bio materials and industry sources. It does not replace the official manufacturer Technical Data Sheet, label, or Safety Data Sheet. Application rates, registered crops, and stewardship requirements may vary by jurisdiction and over time. Always follow the current product label, confirm registration status in your state or country, and consult Agnetic Bio or its authorized distributor (Planet Earth Agronomy in the USA) for current technical guidance, especially for crops outside the manufacturer's published field-trial list.

Sources: agneticbio.com (Agnyte N2 and Agnyte USA product pages, Feb 2025 TDS), Farm Weekly / North Queensland Register coverage, USDA ERS and AMS fertilizer pricing data.