

MNG High Efficiency Farming System

An integrated agricultural system for soil, water and plant performance.

Less input. Higher efficiency. Better yield. Higher profit.

REDUCE INPUT • RESTORE SOIL • SAVE WATER • INCREASE PROFIT

A system, not a product.

MNG is an agricultural efficiency system. It brings mineral-based soil solutions, root-zone water management and advanced foliar nutrition into one practical programme for modern farms.

It is built on more than two decades of applied agronomic work and is produced in Jordan. Since 2004 the work behind MNG has followed one idea: **make mineral inputs more efficient by changing particle physics, not by adding more chemistry.**

It is designed for arid, semi-arid, temperate, continental and tropical agriculture — for farmers facing rising input costs, water scarcity and soil degradation.

PRINCIPLE

"Make every kilogram of input work harder."

2004

Origins of the work

15+

Countries of activity

Two decades of agronomic evolution

From Natural Green Germany to a global agricultural efficiency platform.

01

Origins & validation

2004 – 2015

2004

Foundation

Natural Green Germany founded by Viktor Sukau, inspired by Hensel's *Bread from Stones*.

2004–2008

First products

Formulation, testing and field validation; Natural Green Classic becomes the flagship.

2008–2010

International proof

Use expands beyond Europe to the Philippines – plant, soil and water gains confirmed.

2010–2015

Crops & climates

Validated across crops, soils and climates: nutrient efficiency and stress tolerance.

02

The system takes shape

2015 – 2022

2015–2018

JAM & Europe

JAM developed; documented yield gains of 15–35%. Expansion across nine countries.

2018–2020

Foliar portfolio

Classic Plus, Mg12, Boron, Fe20 – a structured crop-nutrition system.

2020–2022

Soil & water

AquaSave developed for root-zone water; the system extends into soil structure.

Early 2022

Integrated platform

Foliar, soil conditioning and water-saving combine into one system.

03

MNG & global platform

2022 – Today

Sept. 2022

MNG established

Joint venture of Viktor Sukau and the Manaseer Group – manufacturing meets agronomy.

2025

FAO recognition · Rome

FAO Technical Recognition for resilient agriculture and sustainable agrifood systems.

Today

Global efficiency platform

A scalable system to cut chemical dependency, restore soil, save water and lift farmer profit.

MISSION & VISION

Produce more, with less — and protect what feeds the world.

OUR MISSION

To help farmers grow stronger crops, restore soil vitality, reduce chemical dependency and use water with maximum efficiency — without compromising yield, quality or profitability.

**Agriculture doesn't need more chemicals.
It needs smarter systems.**

OUR VISION

To become one of the world's leading forces in sustainable, high-efficiency agriculture — where farmers no longer choose between productivity and sustainability, and healthy soil becomes the foundation of food security.

A future where water is protected and plants are naturally stronger.

*Nature is not replaced — it is **activated**. Science does not fight the soil — it **unlocks its potential**.*

OUR PHILOSOPHY

Prevent, don't react.

MNG rests on one principle: **restore balance, and the system grows stronger by itself.** Healthy crops begin with healthy soil — minerals, structure, biology and water in harmony.

We replenish what intensive farming removes and activate the natural strength of the whole system: soil, soil microflora and mesofauna, seeds, roots and plants.

We don't fight nature harder — we understand it better: strengthening the plant before stress appears, not rescuing it after. Proactive agronomy, not rescue treatment.

Agriculture is under pressure from three directions.



Input cost & volatility

Fertiliser prices follow energy and gas markets. Budgets are hard to plan.



Water scarcity

In many regions water — not land — is becoming the limiting factor.



Soil degradation

Degraded soil holds and exchanges fewer nutrients, so applied fertiliser is wasted.

The question is no longer how much fertiliser is applied. It is how much of it actually reaches the plant.

POSITIONING

MNG does not replace agriculture. It makes agriculture more efficient.

MNG works alongside conventional fertiliser programmes. It helps urea, NPK, MAP, DAP, SOP and other standard inputs work harder in the field. It does not replace nitrogen or potassium — it improves the efficiency of the programme already in use.

DISTRIBUTOR MESSAGE

MNG protects the fertiliser business. It does not replace the basket — it makes the existing basket more efficient and adds a new specialty family alongside it.

Conventional
programme

+

MNG efficiency
layer

=

More reaches the plant

A complement, not a competitor.

Three pillars. One agronomic logic.

01



Soil

Mineral-based soil products rebuild structure, improve the calcium-magnesium-sulphur balance, support microbial life and increase nutrient availability.

02



Water

AquaSave improves root-zone water retention, reduces irrigation demand, reduces leaching and supports resilience under drought stress.

03



Plant

Foliar products deliver micronised, uptake-focused nutrition exactly when the crop needs it.

Soil restores capacity. Water amplifies efficiency. Plant delivers performance.

Soil: rebuild the foundation.



Soil degradation limits fertiliser efficiency. A weak soil cannot hold or exchange nutrients, so inputs are lost. MNG soil products restore the calcium–magnesium–sulphur base, improve structure and cation exchange, and support phosphorus availability — the conditions that make every following input more efficient.

AGRONOMIC ACCURACY

BioRock-P and PhosActiv work on acidic and slightly acidic soils, where phosphorus is fixed by iron and aluminium. They are not positioned for alkaline or calcareous soils. Product selection always follows the soil test.

Product	Role in the soil
PRILL CaMgS	Ca–Mg–S base; structure & cation balance
PRILL CaS	Calcium + sulphur, no added nitrogen
PRILL CaPS	Ca–P–S for root strength & quality
BioRock-P	Long-term phosphorus (acidic soils)
PhosActiv	Mobilises fixed phosphorus (acidic soils)

Science → **field** → **money**: better structure → stronger roots → less fertiliser wasted → lower cost per tonne produced.

AquaSave: water managed at the root zone.



AquaSave is a composite of micronised minerals, humic acid and a chemical-free, biodegradable superabsorber. It is incorporated into the soil, where it holds water and dissolved nutrients in the root zone and releases them back to the plant as the soil dries. **It is placed in the soil – not delivered through drip lines.**

- ◆ **Up to 60% irrigation saving** — depending on soil, crop and irrigation system
- ◆ Improved root-zone moisture and less leaching
- ◆ Higher resilience under water stress

SODIC SOILS

Used as a leaching-efficiency multiplier paired with PRILL CaS — not as a standalone reclamation agent.

60%

Irrigation saving, up to*

65×

Water absorbed, up to

Setting	Rate
Open field	80–200 kg/ha
Greenhouse	3–5 g / seedling
Fruit trees	250 g / tree (lance, 20–40 cm)

*depending on soil, crop and irrigation system

Plant: foliar nutrition engineered for uptake.



Micronised for a fast plant response at the stages that decide yield — chlorophyll and photosynthesis, flowering and fruit set, stress recovery, micronutrient correction and crop quality. Applied by BBCH stage and crop, as part of the system.

Product	What it does
Classic Plus	Balanced foliar base; vigour & uptake
Mg12	Magnesium — chlorophyll & photosynthesis
Boron	Flowering, pollination & fruit set
Fe20	Iron correction; chlorosis recovery
CaPS Foliar	Ca-P-S for quality & cell strength
AminoTreat	Amino-acid use-efficiency & stress support

COMPATIBILITY

CaPS Foliar needs ≥ 24 h separation from Fe20 and high-P/S products. AminoTreat is a use-efficiency enhancer, not a base nitrogen source. Jar-test mixes; add AminoTreat last. Quantities in kg or g — never litres.

The science is in the particle.



Others mix raw materials. MNG engineers particle behaviour.

MNG technology is mechanical, not chemical. The **JAM process** (Jet-stream Activation and Micronisation) accelerates and collides mineral and organic particles at high velocity. This micronises them to around **3 μm** , disrupts the crystal lattice and increases reactive surface area — without a chemical reaction.

- ◆ Smaller particle → far more surface area → faster reactivity
- ◆ Better suspension and contact on soil and leaf surfaces
- ◆ Near-zero process emissions; natural ingredients preserved

STRATEGIC

Because the process is mineral and mechanical, MNG is less exposed to the natural-gas price cycle that drives urea and NPK costs.

From raw mineral to ready nutrient.

Micronisation (~3 µm)

Reducing particle size to about three microns multiplies reactive surface area. Combined with water, cell sap or natural acids, nutrient ions release rapidly and become readily available for uptake. **Smaller particles → faster uptake → less input needed.**

Zeta potential

By controlling particle charge, the minerals stay evenly dispersed and stable in suspension instead of clumping. Even distribution means even contact on soil and leaf — and more consistent performance in the field.

Humic & fulvic

Humic acid works in the soil — structure, cation exchange, microbial life. **Fulvic acid** works inside the plant — chelation and transport for fast uptake. Soil products lean on both; foliar products are fulvic-led.

WHY IT MATTERS

The transformation is physical, not chemical: a low-availability raw mineral becomes a high-reactivity particle the plant can actually use — which is how input volume falls while performance holds.

EVIDENCE

Field results across climate zones.



Zone	Crop · year	Result	Tester
Arid — Kuwait	Potato · 2015/16	+37.7%	Public Authority of Agriculture Affairs & Fish Resources (Soil & Water Research), Amghara
Continental — China	Wheat · 2023	+31.8%	Agriculture & Rural Bureau of Sui County
Tropical — Philippines	Corn · 2020	+43.4% (+3,080 kg/ha)	Jika corn farm, Lala, Lanao del Norte
Temperate — Netherlands	Tomato · greenhouse	+31%	Gebr. Duijvestijn, Pijnacker

DISCLAIMER

Documented results from individual field demonstrations, one per climate zone — not replicated, multi-site RCBD trials. Results depend on crop, soil, water, climate, management and protocol compliance. Full reports and raw data available on request.

Documented yield response across crops.

Crop	Range	Crop	Range
Winter wheat	12–48%	Potato	25–85%
Spring wheat	20–39%	Sugar beet	10–39%
Corn	28–32%	Rapeseed	31–44%
Sunflower	49–86%	Cucumber	17–22%
Rice	16–42%	Tomato	up to 26%
Grape	up to 78%	Pepper	up to 15%
Apple	50–166%	Cotton	up to 78%

Across more than a decade of trials, MNG products have shown yield response in every major crop group – alongside gains in quality: higher sugar, oil and protein, better storage and a higher Brix value.

READ THIS CAREFULLY

These are **documented ranges** from MNG's internal trial database, not guarantees. Response varies widely with crop, soil, climate, baseline programme and protocol. Independent, replicated trial reports are available on request.

PROOF

From promise to proof: the MNG Field Trial Programme.

MNG does not ask partners to believe claims blindly. We provide structured protocols so the system can be tested under the partner's own crop, soil, water and climate — evaluating yield, input reduction, water use, soil restoration and economic return on the partner's own farm.



Farm Baseline

Soil, water, crop history and the current programme — the starting point.



Trial Protocol

Treatment design, control, plot layout, calendar and responsibilities.



Monitoring Log

BBCH stages, observations, inputs and water through the season.



Harvest & Report

Yield, quality, economics and post-trial soil comparison.

METHOD

One field. One control. One defensible result.

- ◆ Soil and water analysis before the trial
- ◆ Control plot follows the farmer's standard practice
- ◆ MNG plot follows the MNG protocol
- ◆ Monitoring through BBCH stages
- ◆ Harvest data and ROI analysis
- ◆ Post-trial soil comparison

DESIGN DISCIPLINE

For credible input-reduction claims, MNG trials are designed as **reduction tests** — conventional NPK cut by a set percentage with MNG closing the gap — not as add-on tests. An add-on design cannot prove that input was saved.

The protocol defines treatment design, the MNG application plan, the conventional control, plot layout, calibration, soil sampling, responsibilities and the trial calendar.

Why distributors win with MNG.

- ◆ Protects existing fertiliser sales
- ◆ Expands basket value with a new specialty family
- ◆ Opens higher-margin specialty products
- ◆ Creates technical differentiation
- ◆ Builds farmer loyalty through measurable results
- ◆ A science-backed efficiency system to sell

*"MNG does not cannibalise the fertiliser basket.
It upgrades it."*

POSITIONING

A complement to urea, NPK, MAP, DAP and SOP — a new product family that sits alongside the existing line, not against it.

Why farmers adopt MNG.

- ◆ Less input waste
- ◆ Better use of applied fertiliser
- ◆ Improved water productivity
- ◆ Better stress tolerance
- ◆ Better root development
- ◆ Better crop quality
- ◆ Better return per hectare
- ◆ Healthier soil, year on year

Profit improves when every kilogram of input works harder.

Built for sustainable agricultural transformation.



For governments, development agencies and institutional partners, MNG offers practical field implementation, not theory:

- ◆ Reduced pressure on water resources
- ◆ Lower fertiliser dependency
- ◆ Soil restoration and climate resilience
- ◆ Better productivity in arid and semi-arid regions

RECOGNITION

FAO Technical Recognition · 2025

Recognised by the FAO Land and Water Division for contribution to resilient agriculture and sustainable agrifood systems.

Technical recognition – not approval, certification or product endorsement.

INDEPENDENT VALIDATION

Recognised, assessed, and field-proven.



FAO Technical Recognition

2025 · FAO Land and Water Division — resilient agriculture and sustainable agrifood systems.



EU certified

MNG products hold EU-type examination certificates under the EU Fertilising Products Regulation (EU) 2019/1009 — valid to 2030.



OMRI Listed

MNG Classic Plus is OMRI Listed for use in certified organic production.



Field record

Since 2004 · 1,100+ documented field results · 15+ countries · four climate zones.

Recognition and conformity statements describe specific assessments — they are not blanket approvals. MNG uses each term precisely and provides the underlying documents on request.

PORTFOLIO

One system. Two ranges.

SOIL & WATER RANGE · 1 T BIG-BAGS

Product	Function	Applied	Best use
PRILL CaMgS	Ca-Mg-S base	Soil, pre-plant	Low Mg/S soils
PRILL CaS	Ca + S, no N	Soil, pre-plant	Alkaline/sodic + AquaSave
PRILL CaPS	Ca-P-S	Soil, pre-plant	Root strength, quality
BioRock-P	Long-term P	Soil	Acidic soils
PhosActiv	Mobilise fixed P	Soil	Acidic soils
AquaSave	Water + nutrient hold	Soil incorporation	Water-limited fields

FOLIAR RANGE · 10 KG BAGS

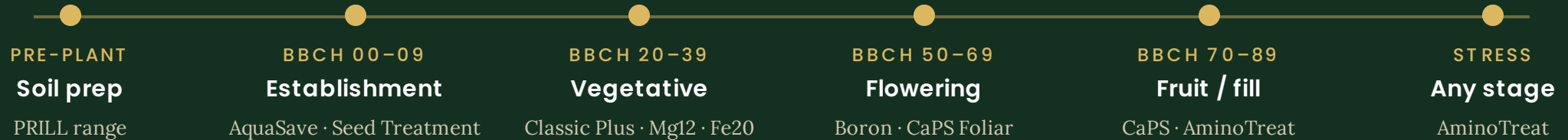
Product	Function	Applied	Best use
Classic Plus	Balanced base	Foliar, BBCH	Broad use
Mg12	Magnesium	Foliar	Chlorophyll
Boron	Boron	Foliar	Flowering/fruit set
Fe20	Iron	Foliar	Chlorosis
CaPS Foliar	Ca-P-S	Foliar	Fruit quality
AminoTreat	Amino acids	Foliar/seed	Stress periods

Plus **Seed Treatment** — a universal pre-sowing product for seeds, tubers and seedlings. Prices excluded from this brochure.

APPLICATION LOGIC

Applied by crop stage, not by guesswork.

MNG programmes are built around BBCH growth stages — soil products before planting, AquaSave in the root zone at establishment, and foliar products at the vegetative, flowering, fruiting and stress stages that decide the result.



Crop-specific timing is documented for cereals, rice, rape, sunflower, beet, faba bean and more.

DELIVERY

From diagnosis to programme.

MNG is a service, not just a product. Our experts analyse the farm's soil, crops, climate and machinery, then tailor the most effective application scheme – and stay with the client through every stage until results are achieved.



MNG stays with the client at every stage – from analysis to harvest – until the results are achieved.

ECONOMICS

Efficiency is the new yield strategy.

MNG does not chase maximum yield at any cost. It improves the relationship between cost, input efficiency, water use, crop quality and net margin.

- ◆ Lower conventional input demand — target 30–50%, validated stepwise
- ◆ Better uptake efficiency from existing fertiliser
- ◆ Reduced water cost where irrigation limits yield — up to 60% with AquaSave
- ◆ Improved marketable yield and quality
- ◆ Stronger ROI per hectare

30–50%

Fertiliser input, target reduction*

↑ 60%

Water saving, up to*

HONEST FRAMING

Reduction is validated stepwise — typically 20–30% in year one, 30–50% after on-farm validation. All figures must be confirmed against the farmer's own baseline and local prices before they are quoted.

*conditional on field conditions.

PARTNERSHIP

A service-based company.

- ◆ Deep, reliable expertise in upgrading existing farm technology — making it both greener and more profitable
- ◆ Continuous collaboration between MNG experts and field specialists
- ◆ An all-encompassing agricultural strategy across the full product system
- ◆ The outcome: economic return, safe high-quality produce, and soil fertility that improves year after year

SUPPORT MODEL

MNG stands by its clients through every stage of product use — from analysis and plan to harvest and review — until the intended results are achieved.

IN CLOSING

The future of agriculture is not more input. It is better efficiency.

MNG brings soil, water and plant nutrition into one system — helping farmers produce more reliably, use resources more intelligently, restore the productive base of the soil and protect profitability under increasingly difficult conditions.

Partner with MNG. Test it on your field. Measure it with your data. Scale what works.

REDUCE INPUT · RESTORE SOIL · SAVE WATER · INCREASE PROFIT



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