

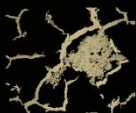
## organic humic acid based production system



with **ORGANIC** and **BEE-FRIENDLY** rated pure humic acid concentrate  
INNOVATIVE, SIMPLE, designed for large hectares:

**2 components, min. +20% yield increase, stress and drought tolerant fields**

MINIMUM  
**+20%**  
YIELD

LESS WATER  
  
SUFFICIENT

PREMIUM  
  
HARVEST

SOIL  
  
RESTORATION

GRAPES



FRUITS HORTICULTURE ARABLE FIELD ORGANIC / NOT TILL



ORGANIC / NOT TILL



GREENHOUSE

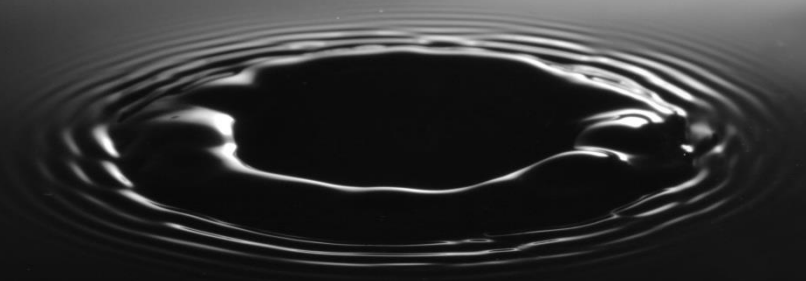


Let's TERRAFORM the future together!

[huminaqua.hu](http://huminaqua.hu)

[terraform.hu](http://terraform.hu)





# HUNGARIAN INNOVATION



**Prof. GÖMÖRY Pál, head of the Chemistry Department at Eötvös Loránd University (Budapest),** the world's leading scientist on humic substances. The humic acids manufactured in Hungary are of premium quality, ranking among the best in the world. All Hungarian scientists rely on what they learned from professor GÖMÖRY.

**The unique know-how underlying the manufacture of GENUINE WATER-SOLUBLE HUMIC ACID is associated solely with the HUMIN AQUA® products, manufactured on the basis of the proprietary GÖMÖRY PROCESS.** A STARTUP team of professionals from Hungary and the northern region referred to as Upper Hungary produces this clean water-soluble organic humic acid concentrate in a gentle manner based on his tireless efforts in research and development over thirty years.

**The patented water-solubility of the HUMIN AQUA® products is unmatched in the industry – no other product comes in anything like its concentration: as stated in our European and NÉBIH authorisation the concentrate contains 60% pure organic humic substance.**

The team of researchers and owners of the HUMIN AQUA system, the professional and manufacturing staff, is a community of friends and family members. You are reading a publication released directly by the research and manufacturing companies; we own the know-how together with the exclusive rights of manufacturing and distribution. **Our mission is to deliver this unparalleled Hungarian innovation to Hungarian farmers, providing Hungary's agriculture with a major competitive edge and a chemical-free future in new and profoundly changed agricultural and environmental circumstances.**

The aim of our COOPERATION WITH INTERNATIONAL PARTNERS is to introduce the system to other continents as well. Our vision for the 2030s is having Hungarian humic acid travelling towards MARS to be used in terraforming for a New World!

**But in the meantime welcome to the community of Terraformers! Let us create a NEW SUSTAINABLE CHEMICAL-FREE AGRICULTURE here on Earth!**



HUMIN AQUA®

terraform.hu

**LET'S TERRAFORM THE FUTURE TOGETHER!**





# +20% YIELD WITHOUT CHEMICALS



## HUMIN AQUA® SYSTEM



Based on the results of a more than 30-year international research and development project, with our patented process we manufacture a fully water-soluble, organic, bee-friendly concentrate of an AT LEAST 60% humic acid content, that can revitalise soil by restoring soil life.

Applied exclusively in the soil, as a biostimulant, in conventional farming it enables the use of smaller amounts of organic and chemical fertilizers, boosts yields and improves the nutrient content of the produce. The two-component system generates a major increase in yields and dramatically improved stress-tolerance (an at least 20% improvement). Used in combination with the BIOMIT® foliage conditioners, our products enables completely chemical-free organic farming.

Record yield of sugar beet with no chemicals used (2018) 5.8 kg | STRUBE/Brian  
105 t / ha produce, with over 15 average digestion (documented)  
(control: 45 t/ha, with 14 average digestion)  
with the HUMIN AQUA® + BIOMIT® 2-component system

## The three key effects of the system

The HUMIN AQUA® system is used in 2021 by Terraformer farmers, farmers using conventional farming techniques, organic or no-till methods, on thousands of hectares in large and medium-sized farms.

### 1. DROUGHT-TOLERANT FIELDS

The giant humic acid molecules combine to form an infinite carbon-oxygen chain in the soil, creating a **water retaining layer** preventing rain from flushing down into the deeper soil layers.

This layer boosts root growth and renders plants increasingly drought tolerant. The more vigorous root system leaves an increased amount of organic matter in the soil after harvest, reducing the required amount of organic or chemical fertilisers by up to 50-70%.

### 2. RESTORED SOIL LIFE

Pure humic acid acts as a catalyst on soil-borne bacteria. **The concentrate itself contains no live organisms – this is not a bacterium product! It is resistant to sunlight and easy to use.**

In the presence of the soil improving product HUMIN AQUA® bacterial cell division time reduces from 4 hours to 15 minutes, causing the soil ecosystem to regenerate itself, quickly, without the use of any chemical.

### 3. YIELD INCREASE +20%

Humic acid molecules, the most potent chelators, transform chemical bonds in the soil that render nutrients inaccessible for plants. In this way, as if forming a bridge, they make substances that have been added to the soil over decades with the organic and chemical fertilisers applied by farmers suitable for utilisation by crops. The humic bridge makes these nutrients suitable for absorption, resulting in extremely vigorous and productive vegetation in a completely natural way.

# HUMIC ACID concentrate

**Our answer to future challenges is a mineral soil improving concentrate:**

The giant humic acid molecules were formed thousands of years ago and we extract them from peat and lignite through a **gentle process**. They play a key role in activating the soil's fertility, restoring soil life and causing plants to make full use of their genetic potential and in optimising the soil's water retaining capacity. It is quick and simple to use, results appear after the very first treatment.-

## What makes HUMIN AQUA® different?

**A wide range of products referred to as humic acid is available in the market and humic acid is one of the world's most intensively researched substances. Why should you choose this one then?**



**REAL PURE HUMIC ACID** - not all that is black is humic acid! Lots of 'humic products' contain nothing but simple, inexpensive undigested carbon and since it takes expensive laboratory tests – or yield increases that have failed to materialise – to prove that what they contain is not really humic acid, many a farmer has been deceived by cheap Asian products or products that are sold in Hungary without authorisation. **The HUMIN AQUA® system is guaranteed to contain an at least 60% humic acid concentrate, which is assured by monthly checks by accredited laboratory tests (EUROFINS) and the Hungarian authorisation issued by NÉBIH, which is well known to be one of Europe's most rigorous supervisory bodies.**



**FULL WATER-SOLUBILITY, GUARANTEED EFFECT** - the essence of our innovation lies in the gentle extraction know-how, the patented Gömör process. It took years of research for Professor Gömör to develop the method to render the initially insoluble humic acids fully water-soluble, which is crucially important because in this way they can have their effect work in the presence of rainwater. Products of nearly 100 manufacturers of humic products from all over the world were tested – only some have been found to be actually water-soluble, but other products have humic acid contents as low as 5-15%.



**IT IS ORGANIC, HARMLESS TO LIVE ORGANISMS** – our product is certified organic and bee-friendly, and is not dangerous to human health. **The gentle natural technique used to extract humic acids produces this entirely safe, precious and natural substance which we are very proud to represent all over the world and to integrate into agricultural, human health or sports related systems.**





# OBJECTIVES INVOLVING LARGE HECTARES

A 2-component organic bee-friendly product system that answers some of the most urgent challenges:

1. YIELD INCREASE

2. A SOLUTION FOR POOR EMERGENCE

3. COMPLETELY CHEMICAL-FREE CROPPING



## 1-COMPONENT SYSTEM

The HUMIN AQUA<sup>®</sup> humic acid concentrate can be used in conventional farming, as a yield increasing agent, a biostimulant.

**It immediately triggers increased draught tolerance and restores soil life; just one treatment will significantly reduce soil acidity and cut the required amount of chemical or organic fertiliser.**



## 2-COMPONENT SYSTEM

Use **half the normal dose** of the combination of HUMIN AQUA<sup>®</sup> soil improving product + BIOMIT<sup>®</sup> plant conditioner to save poorly emerged crops.

**This keeps costs low and makes a repeated seeding unnecessary – the results, however, speak for**



## 2-COMPONENT SYSTEM

The combination of HUMIN AQUA<sup>®</sup> soil improving product + BIOMIT<sup>®</sup> plant conditioner enables organic farming to produce crops of outstanding nutrient content, with an at least 20% yield increase, without the use of chemicals.

**With proven results in field cropping and in horticulture, in grape and fruit production, as well as sowing seed production.**

# SIMPLE TO USE



**EVEN WITHOUT PRECISION TOOLS:** HUMIN AQUA<sup>®</sup> can be simply sprayed on the soil after tilling, once a year. It needs no precision system whatsoever, but it can be delivered in such systems as well, in the appropriate doses.

**WITH THE USUAL MACHINERY:** The solution of the concentrate passes through filters with holes of or over 50 microns, and it can be delivered with any type of machine, including agricultural aircraft.

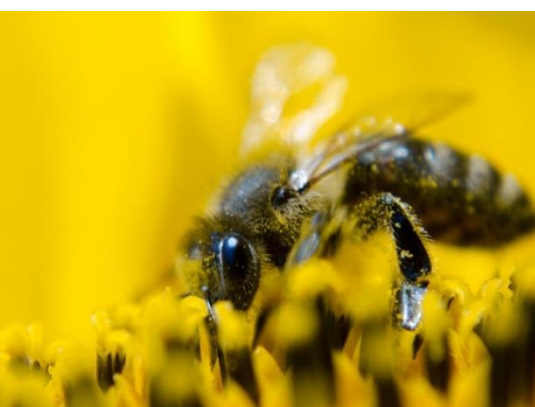
**IN ONE PHASE:** There is no need for taking additional rounds; the delivery of the product fits into your regular production system. Our partners are provided with simple, but detailed instructions for use in the production of all types of crops.

**IT CAN BE MIXED:** Both components can, after a test, be freely mixed with chemicals, components and other products, as required.

**IT CONTAINS NO BACTERIA:** humic acid acts like a catalyst, it helps bacteria proliferate in the soil, but it contains no living organisms. The product is not sensitive to sunlight or temperature, therefore its application is not affected by weather conditions at all.

**FOR USE ON FIELDS UNDER ORGANIC FARMING OR ON AEM FIELDS:** A product system with international certificates that can be used on fields under organic farming, 'bio-vegan farming' or fields under the 'Agro-Environmental Management' (AEM) scheme. Harmless to pollinators and human health, these products of natural components can even be used during the period of florescence.

# 1. component



## HUMIN AQUA concentrate®

It is an organic, bee-friendly pure humic acid concentrate (60%), a soil improving product

HUMIN AQUA® was introduced to the market in 2018 as a result of a more than 30-year research, development and innovation project. The concentrate is extracted from young coals, using a gentle patented technology. Humic acid molecules are thousands of years old; they act as a natural catalyst in the soil, playing a key role in mobilising the soil fertility and boosting plant growth. No matter how all of the necessary micro and meso elements are present in a given soil; as long as they are not suitably bonded – without humic acids – they are of no use for plants. Humic acids make nutrients, that are present in the soil naturally, or integrated by adding farmyard manure or chemical fertilisers, suitable for being taken up by plants. Humic acid prevents nutrients from being bleached out of the top soil layers by creating a water retaining layer in the root zone.

### Double effect: input and soil optimising

The giant humic acid molecules transport nutrients with the help of chelate bonds into root tissues. Forming a bridge between root and nutrient, they neutralise any heavy metal or other toxic contamination. With their free valence these atoms (Al, Pb, Hg, As, etc.) bond with the humic acid molecules so they become inaccessible for plants, and then remain in the soil in this inactive form.

### Effects:

- **100% organic, bee-friendly, soil improving humic acid, harmless to human health**
- it renders the macro, meso and micro elements of the soil absorbable
- it speeds up bacterial proliferation and boosts bacterial vitality
- it encourages root growth, increases root mass
- **HUMIN AQUA® concentrate with a min. 60% humic acid content, causing a substantial increase in yield and nutrient content without any other additional product**
- not only will its quantity increase, but the crop will also grow and mature more quickly, for **earlier harvesting**
- **it improves the water retaining capacity of soil, less rainwater/irrigation will be sufficient**
- it also makes less fertile sandy / desert soils suitable for cropping
- **recommended annual dose 40 – 100 l/ha (depending on soil and crop)**
- it regenerates the soil by binding toxic and **heavy metal contamination in inactive compounds** so that they can no longer affect live organisms. The contaminants will not be removed from the soil, but they are rendered harmless in an unabsorbable “wrapped-up” form. This is proven by official tests carried out in an accredited laboratory. Accordingly, heavy metal contaminated land can again be brought under cropping after treatment with sufficient amounts of humic acid.

**Packaging presentation:** 5, 10, 20 litre buckets and 1,000 litre tank

### APPLICATION:

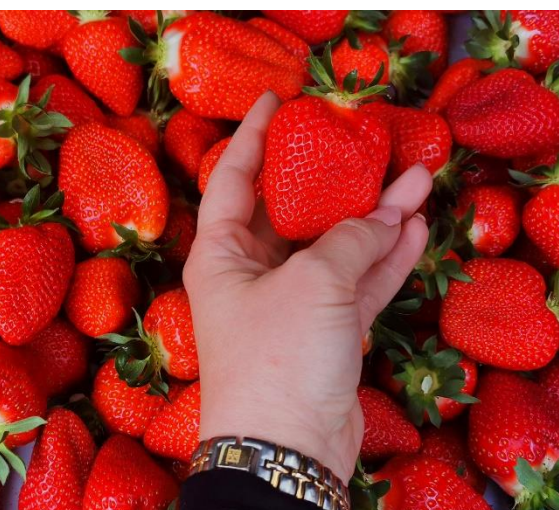
Deliver the 40-100 l/ha recommended quantity in a 20x dilution with the help of a spraying machine or through an irrigation system into the top 10 cm layer of the soil once or twice a year in the spring and/or autumn (depending on soil type and condition, and the crop to be grown).



## 2. components



↓ TREATED - CONVENTIONAL ↓



### HUMIN AQUA concentrate<sup>®</sup>

### + BIOMIT<sup>®</sup> plant conditioner

BIOMIT<sup>®</sup> is a fertiliser for top dressing, certified by Biokontroll Hungaria. It contains ground dolomite of <20 $\mu$  particles and special organic active ingredients. It is a formula with no comparable rival in the global market, yet we continue to refine and improve it. In addition to its high meso, micro and trace element content, the product contains extracts from more than 70 different medicinal herbs. Its unparalleled qualities are a result of more than 15 years of tireless research and development.

#### Advantages and special properties:

- HUMIN AQUA<sup>®</sup>, a soil improving product placed into the soil just once
- BIOMIT<sup>®</sup>, a plant conditioner, dispensed 4 times, containing a suspension of micronised dolomite powder, plant extracts and volatile oils
- with an instant protective and nutritious effect
- **recommended dose for a full year 30-60 l/ha (depending on crop)**
- **re-entry period: 0 day (certified organic), may be used during efflorescence**
- it enables plants to produce the maximum yield genetically possible
- it stimulates the plant's own defence mechanism, also making it more drought and frost tolerant
- **it forms a thin film coating on the leaves, thereby ensuring continuous nutrient supply combined with mechanical-chemical and UV protection**
- the coating is not dissolved by water from irrigation or rain
- it makes the produce more suitable for transport and storage
- **experiments have proven that the combination of the two products enables an at least 20% increase in the expected yield, in comparison with the conventional cropping methods**
- **the system has proven to be suitable for use under desert conditions as well**
- it prevents and eliminates deficiency and storage related diseases

Commercial food production is inconceivable today without chemical crop protection, at the same time, there is a growing demand for the production of high quality agricultural produce (such as the output from cropping with reduced or no chemical use, etc.) so demand must be met by supply if farming is to remain competitive. Our dual HUMIN AQUA<sup>®</sup> + BIOMIT<sup>®</sup> product system offers a simple solution to this challenge, for use in gardens, orchards, arable fields, hayfields and greenhouses alike. **Packaging presentation:** 10 litre bucket and 1,000 litre container

#### APPLICATION

Spray the solution, diluted in water, on (the surface of) leaves four times distributed over the growing season **When dry, the spray forms a whitish film like coating on the leaves which is not removed by rain or irrigation. Its repellent content keeps off harmful insects. Through the complex action of its component, it reduces and blocks the development of diseases caused by any of the known fungal or bacterial infections.** Regular treatment with the product makes plants more resistant to disease, frost and drought, thus significantly reducing the risk of such damage.

## The system increases:



- 20-30% yield increase
- high quality early harvest
- improved nutritional values and quality (oil, flavour)
- increased frost and drought tolerance
- improved shelf life and transportability
- 0 day (organic)



## The system reduces:



- machine time, fuel
- NPP and other fertilisers
- fungicides, pesticides and herbicides
- frost and drought damage
- irrigation









## NO TILL MAIZE |

### saving poorly emerging crop

I produced 7.5 t/ha maize on my no-till land after no plants emerged on 70% of the field by 3 June when the 'rescue treatment' was applied HUMIN AQUA® concentrate was applied, at little cost, by way of ex-post treatment.

It saved the crop for a fraction of the price of discing the field and seeding it again.

**ÁRPI B.**

farmer, NO TILL farming, Arad region



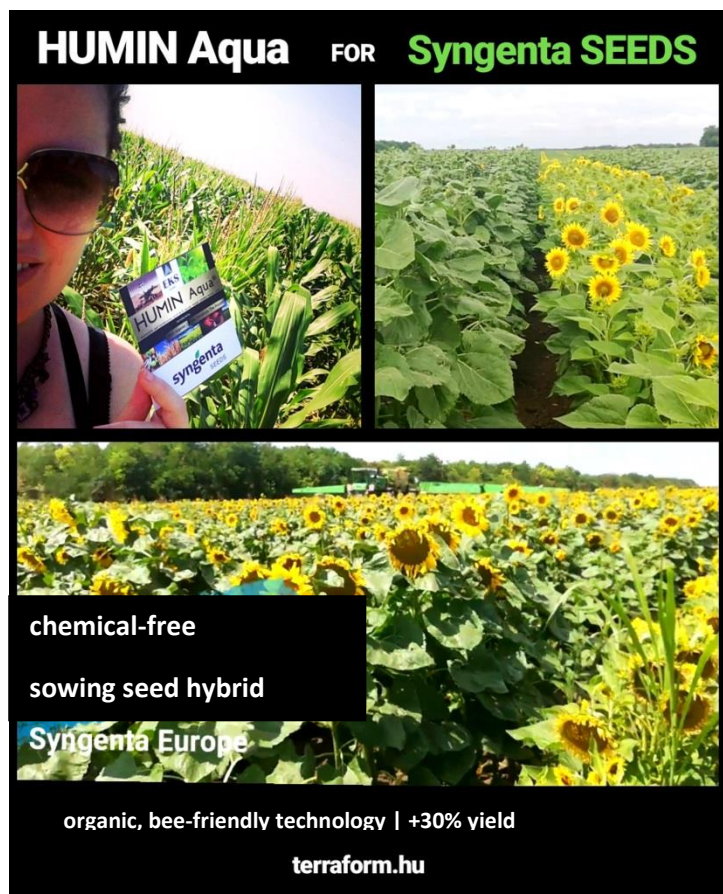


**WE THANK** the trust of the sowing seed division of **SYNGENTA** they had in us. With the two-component HUMIN AQUA® soil improving product + BIOMIT® plant conditioner we achieved a 32% yield increase on their fields in comparison with the conventional technologies including chemical treatments.

Extensive tests of the system have proven that the HUMIN AQUA® cropping technology ensures complete nutrient supply and plant protection at lower costs, without the use of chemicals, in a bee-friendly way, even for sensitive products such as hybrid sunflower sowing seed.

**Our technology is being used in large-scale commercial sowing seed production in as many as 5 countries in 2020.**

**SYNGENTA EUROPE - Syngenta Seeds**  
*BoD, Budapest*



**HUMIN Aqua** FOR **Syngenta SEEDS**

chemical-free  
sowing seed hybrid  
Syngenta Europe

organic, bee-friendly technology | +30% yield  
terraform.hu

National record sugar beet harvest, autumn, 2018, with the **HUMIN AQUA® + BIOMIT®** two-component product system, 105 t/ha harvest, at a cost cca EUR 550 per hectare (2018) and with over 15 % digestion.

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HUMIN AQUA® system



**Let's TERRAFORM the future together!**

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## Organic Humic Acid Research and Development Project (1986 – 2022.)

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