



VERDESIAN

THE NUTRIENT USE EFFICIENCY PEOPLE®

THE ENVIRONMENT

The next generation of fertiliser stabilisers

VERDESIAN LIFE SCIENCES EUROPE LTD

TO SOLVE OUR CLIMATE CRISIS AND PROTECT NATURE, WE MUST TRANSFORM AND ACCELERATE INNOVATION IN AGRICULTURE.

As one of the largest greenhouse gas emitting sectors of our global economy, efforts to reach the Paris Climate Agreement must put the transformation of global food systems at the heart of change.

To reach our goals we must close the innovation gap in agriculture, with new technologies and methods of producing food which protect nature.

SOURCE: UKCOP26



ENVIRONMENTAL ISSUES AMMONIA | Clean Air

- Ammonia pollution (NH_3) from agriculture is now the **next environmental focus** after carbon dioxide
- **18%** of **ammonia pollution** from agriculture comes from the use of **inorganic granular** and **liquid fertilisers**
- Intensive agricultural regions have **x100** more ammonia in the air than remote areas
- This is **major issue** as rising levels of ammonia in the air we breathe, seriously effects **human** and **animal** health, **plants** and **aquatic life**



ENVIRONMENTAL ISSUES NITRATE | Clean Water

- Nitrate is **naturally occurring**, found in soil and plants
- **Nitrate pollution** in drinking water mainly comes from **agricultural land** and seen by governments as a **major polluter**
- **High nitrate levels** are cause of the fatal **Blue Baby Syndrome** and now links to cancer
- Thames Water – City and Greater London, **15%** of ground water sources are already **above the limit** and problem increasing
- **83%** increase in UK ground water levels between 1980 (60 mg/l) and 2015 (110 mg/l)
- UK Water Companies state that a possible **20%** reduction in nitrate pollution from the land would be **significant**

SAFE LEVEL

0.02 PPM

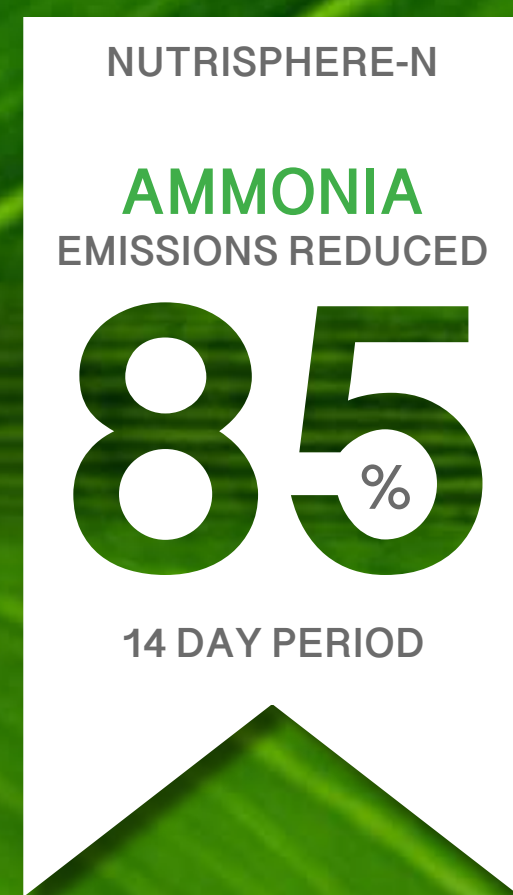
PHOSPHATE IN WATER

ENVIRONMENTAL ISSUES PHOSPHATE | Clean Water

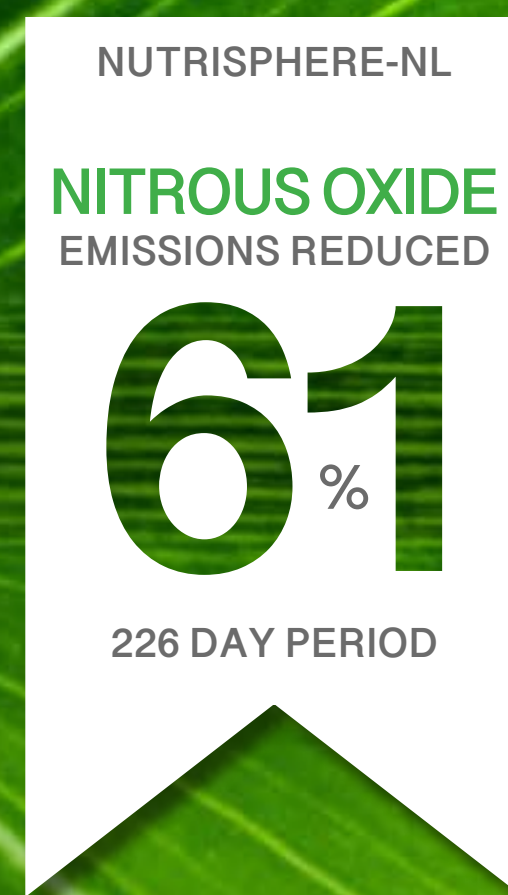
- **x3** that **level** (0.02ppm) will create algae bloom and then **increased bacterial** levels which use up oxygen in water **killing all life** and **contaminate** the **water source**
- **Serious clean up** costs to remove **algae** and **bacteria** from river and surface water sources for **drinking water**
- **Excessive** use of phosphate in agriculture remains **main source** of the **problem**

All plants need phosphate to Grow

WHAT WE HAVE DONE | The Results



NutriSphere-N treated **granular** urea showed an **85% reduction** in total volatilised ammonia compared to the untreated urea



NutriSphere-NL with UAN reduced the total N_2O emissions by up to **61%**



UAN+NutriSphere-NL treatment compared to standard UAN application **reduced** the detectable **nitrate levels** in the outflow from the field tile drains by **21%**

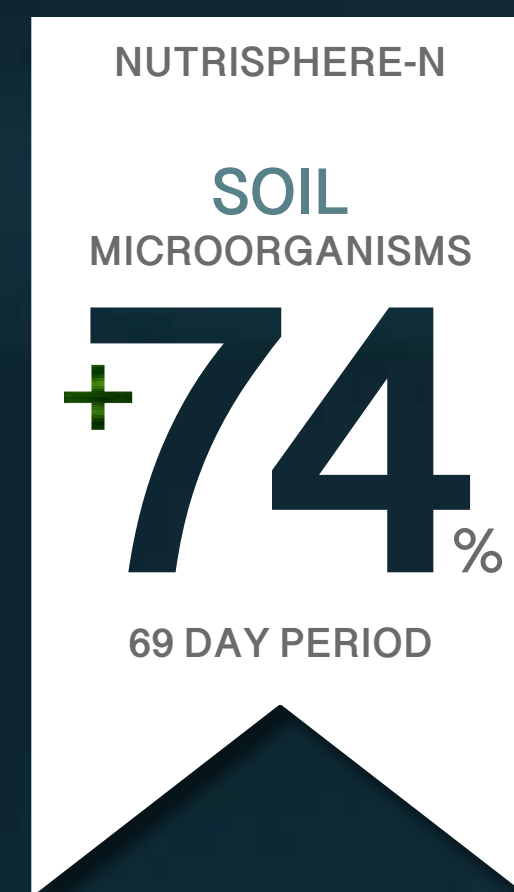


With **25%** reduced input compared to standard farmer practice, **Avail** demonstrated on average **3.8% higher yield**

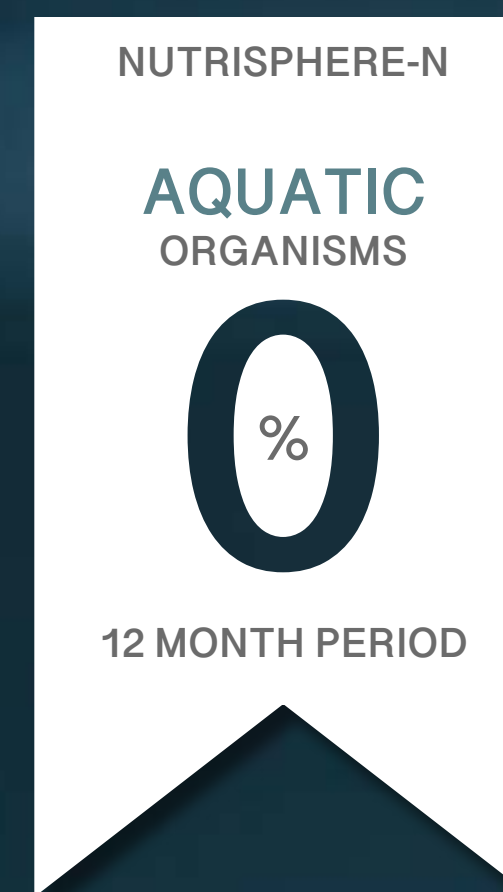
REDUCED IMPACT ON THE ENVIRONMENT | The Results



NutriSphere-N presents no long-term effect on the rate of mortality, reproduction or biomass inhibition of earthworms



NutriSphere-N treated urea by Athens University reported a **74 % increase** in Mycorrhizal colonization compared with untreated urea.

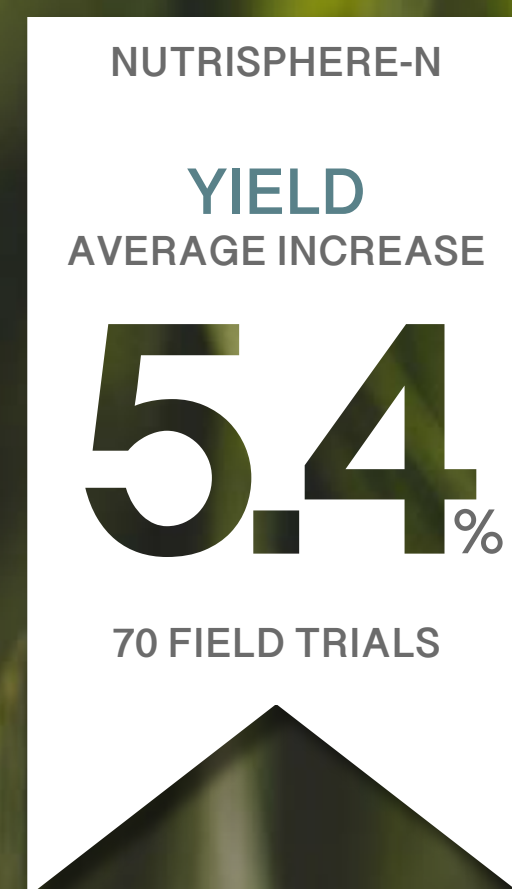


Acute & chronic studies performed with **NutriSphere-N** at up to **10 times** the agronomic dose determined there was no long-term effect on the mobility of Daphnia.

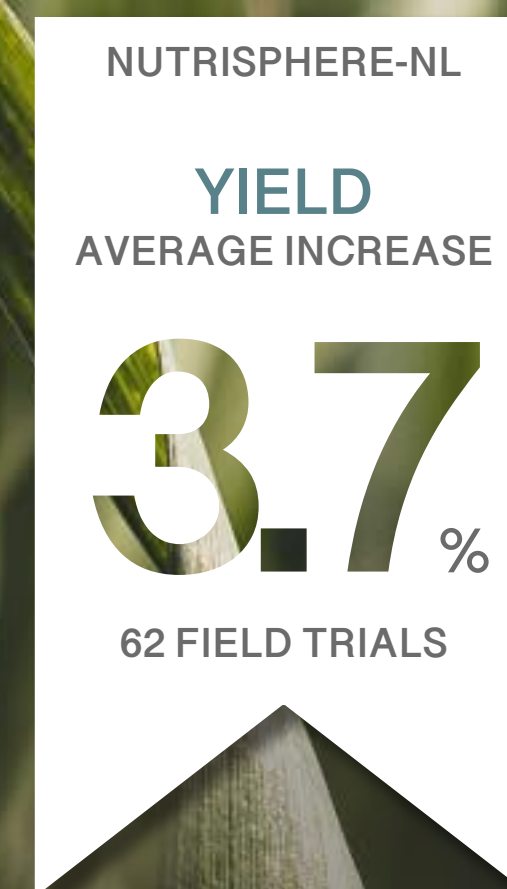


Acute study performed with **NutriSphere-N** at up to 10 times the agronomic dose determined there was effect on fish mortality

AGRONOMIC TRIAL | The Results



NutriSphere-N trialled over **6 years** across EU, TR & UK. Average yield **+5.4%** across **6 crops**, including wheat, barley, oil seed rape, potato, maize and sugar beet.



Trialled in EU, TR and UK with **NutriSphere-NL** over a 3 year period covering a total of 6 different crops the use of the **technology** produced an average **3.7%** yield increase.

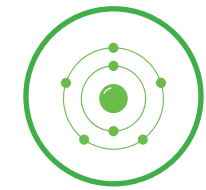


Avail increased the **agronomic efficiency** of DAP fertiliser by **+23%** compared to untreated DAP.

THE SUMMARY | NutriSphere-N/NL and Avail



All three products are highly water-soluble organic compounds primarily created from fermentation of maize.



The technology is proven to reduce the three sources of N loss and improve phosphate efficiency.



All three products are proven to provide farmers with a return on investment.



The technology keeps the fertiliser where it is needed for longer, increasing nitrogen and phosphate efficiency, yield and crop quality.



All three products help reduce the environmental impact on air and water quality. Breaking down in the soil to carbon, hydrogen and oxygen.



The technology has demonstrated a beneficial effect on soil biome.



