



LEAFLY



NitroFarm
— since 1976 —

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The Environmental Problem

Greenhouse gases

cause climate change,
destroying our planet,
costing many lives

Agriculture is responsible for
up to 20% of global greenhouse
gas emissions,
largely due to
nitrogen fertilizers which
burden air pollution in
nitrogen oxides

The nitrogen oxides are responsible
for ~26,000 annual
premature deaths
in the United Kingdom only,
with potential
overheating
of the planet 265 times larger than
that of CO₂



LEAFLY



The Agricultural problem

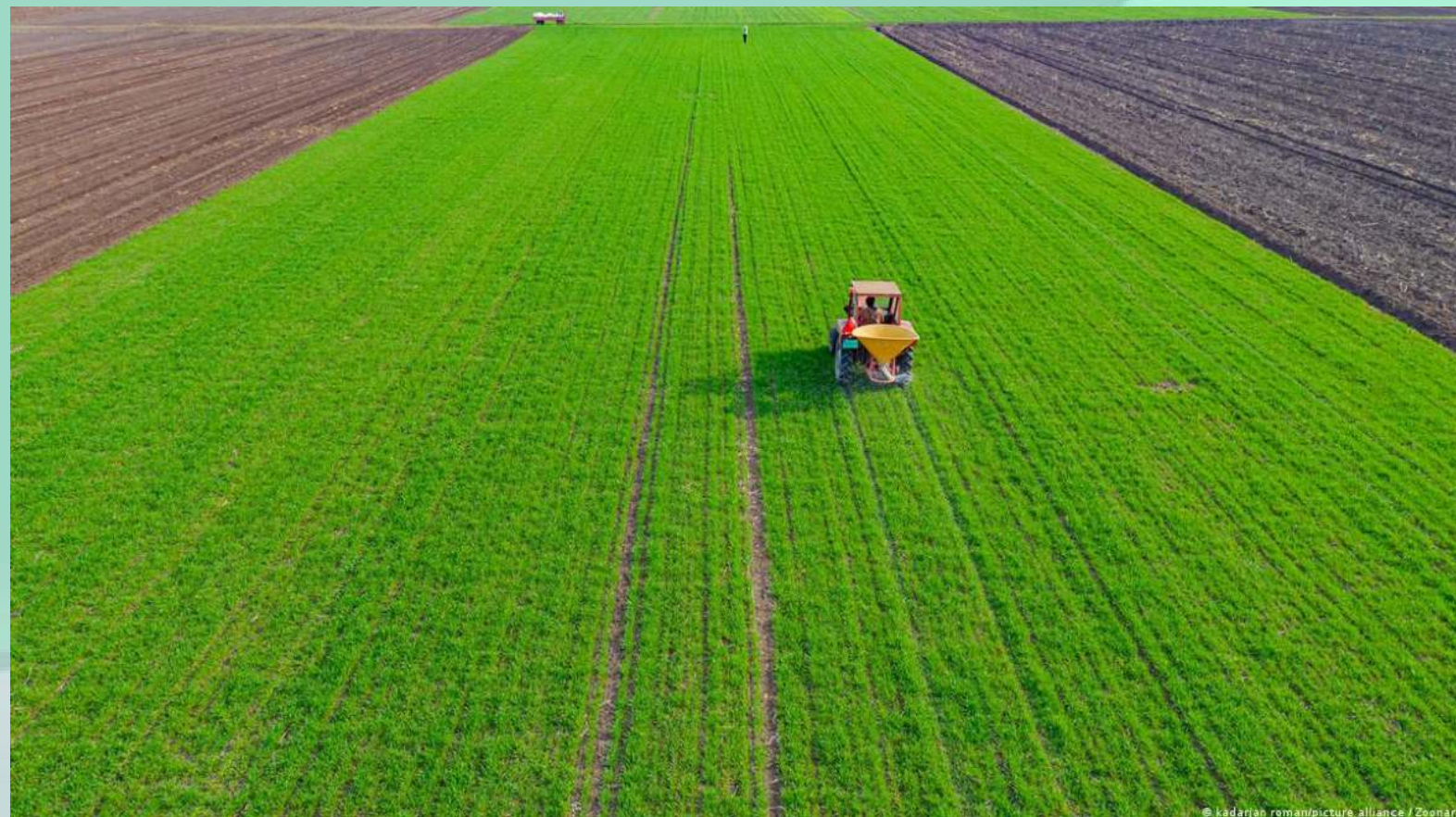
The health of the soil is of primary importance to ensure the productivity of the crops while the lands have been degraded by the continuous use of fertilizers a new approach is required

Climate change that causes extreme weather phenomena directly affects crop production.

Linking the subsidy to ecosystem services is an opportunity for reinforcement of agricultural income

High cost and its ineffectiveness Nitrogen fertilizer.

Changes must be made to "sustainable agriculture" with innovative ones alternatives



LEAFLY



The solution

LEAFLY removes nitrogen oxides from the atmosphere and converts to nitrates using photocatalysts

Our innovative technology is simply sprayed onto the crops.

Farmers drop LEAFLY into the tank during a tactic spraying

LEAFLY saves carbon units and increases efficiency of the vegetables

Every leaf can be a LEAFLY ®

LEAFLY



What is LEAFLY?

LEAFLY



How does it work;



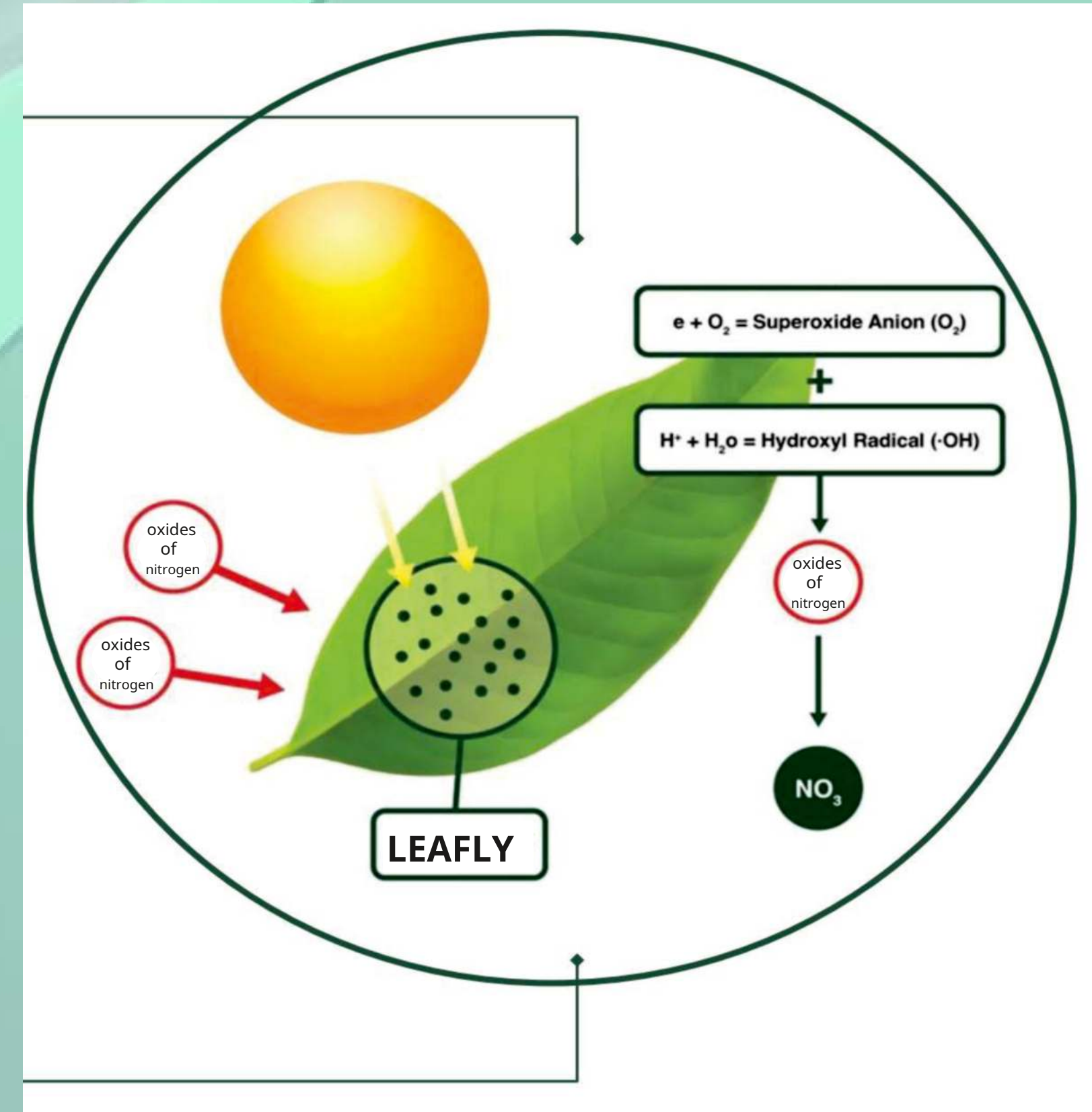
Specialized process that allows photocatalysts working subnormally



LEAFLY photocatalytic technology (TiO₂) uses the air pollution with nitrogen oxides as a substrate for nitrogen (N) production at the leaf surface, providing N daily (N) in the crop



Extra/replaced N results in higher nitrogen yield/management. LEAFLY remains present in leaf surface for up to 6 weeks



LEAFLY



What are the benefits?

LEAFLY



Basic LEAFLY benefits

Cultivation

Soil health

N absorption
synergist

Increased
NUE



Continuous
provision of N

Durability
and sustainability

Revitalization

Economy

Reduced
fertilizer N

Increased
performance

zero environmental
imprint
in the supply chain



Saving
units
carbon therefore
less pollution

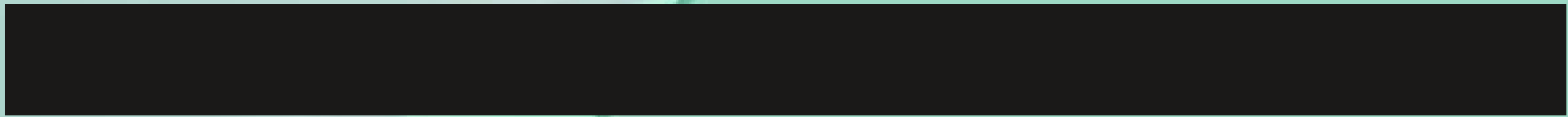
Economy

Subsidies

LEAFLY Return on Investment



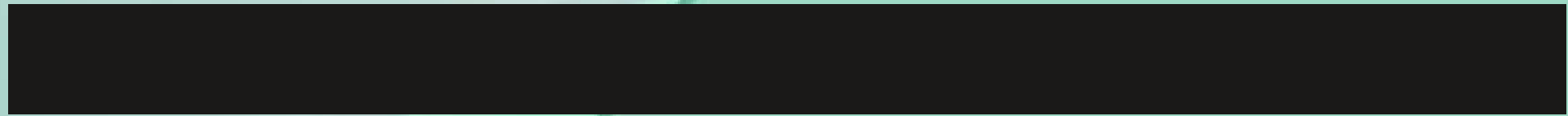
LEAFLY



It allows to reduce the requirement for synthetic nitrogen fertilizers while at the same time increasing the profit margin of the farm



LEAFLY

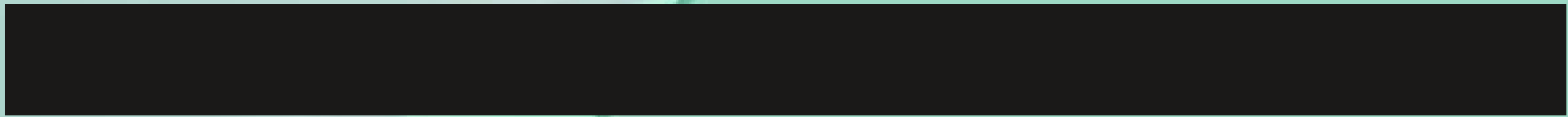


LEAFLY is tank mixed and also contains manganese, molybdenum and zinc.

	Mr		Mo		Ms
	2.4%		0.07%		1.3%
	w/w		w/w		w/w

Compliant with regulations as an EC fertiliser

LEAFLY



Prevents soil degradation by reducing
synthetic N requirement

LEAFLY

Delivers N to crops daily in a slow-release manner, preventing burn-off and reducing the risk of fungal attacks compared to other N sources

LEAFLY 

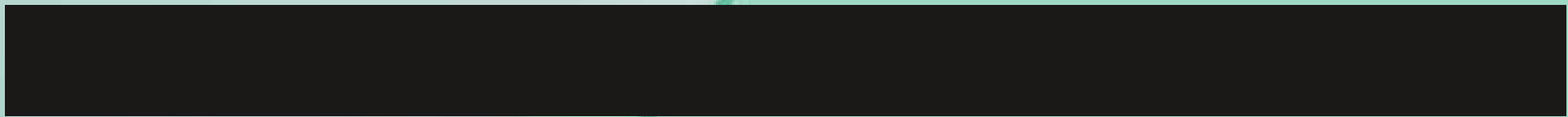
LEAFLY

LEAFLY creates the conditions for saving carbon units by significantly disrupting the carbon management market...

LEAFLY



LEAFLY



LEAFLY removes the equivalent of 5.4 tCO₂ per year used at 2 liters per hectare on cereals, as validated by the Climate Impact Forecast (CIF) supported by the European Innovation Council.

validated in April 2022
validation id:
JW0019
Verifyable at
www.impact-forecast.com

LEAFLY (2 LITERS)

Mitigates climate change with an impact reduction potential of:

-5,4 tCO₂eq / year

Validity of forecast
Valid

Impact compared to baseline
Positive

Magnitude of impact
Significant

Sustainability of LEAFLY

LEAFLY creates carbon units by removing N₂O from the atmosphere

- The impact on CO₂ equivalent removal has been verified by the agency
CLIMATE IMPACT FORECAST (CIF)
- Also exploring the value change initiative (VCI) that connects supermarkets directly
with the farmer with the aim of greening the supply chain
- Credit generation will significantly help farms achieve a net zero footprint
and increasing profitability from credit revenue.

How to use LEAFLY

LEAFLY 

LEAFLY Apps

The recommended amount of application is 1 liter per hectare in 120 -200 liters of water twice (2 liters of formulation / hectare in total)

For cereals, the most appropriate timing is at T1 and T2 when soil-applied nitrogen begins to produce nitrogen oxides and when foliage is sufficient to retain LEAFLY.

T2 application is necessary as the sprayed leaves they are overshadowed by the news and therefore become less effective.

It may also be desirable to split the dose of T2 applications if T1 is close to the T2 time, ie within 2-3 weeks. Therefore applying 0.5lt to T2 and 0.5lt to T3.

Spray timing application rate

T1	1 lt/ha
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T2	1 lt/ha
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Optional when T1 and T2 are close

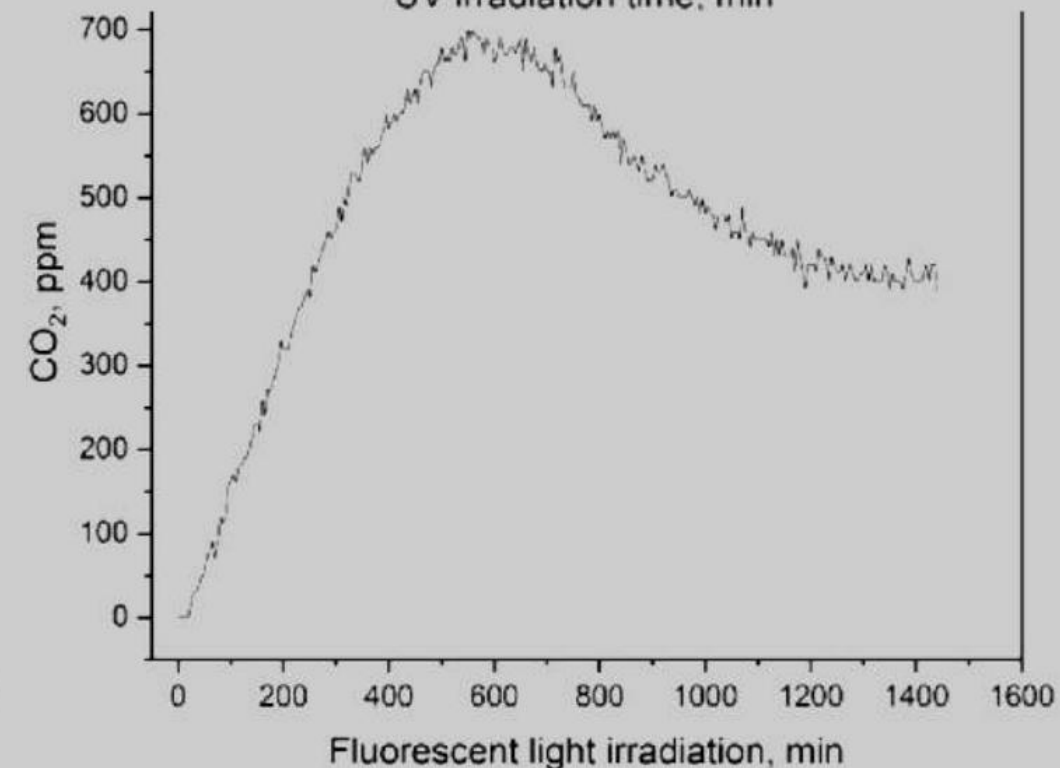
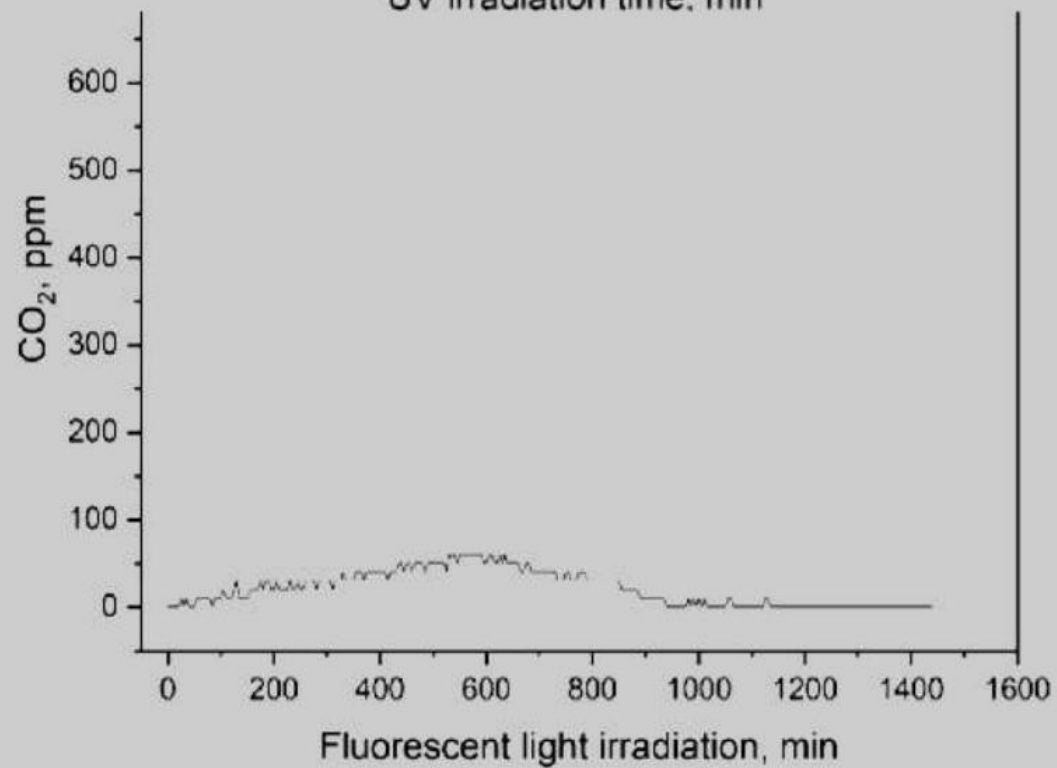
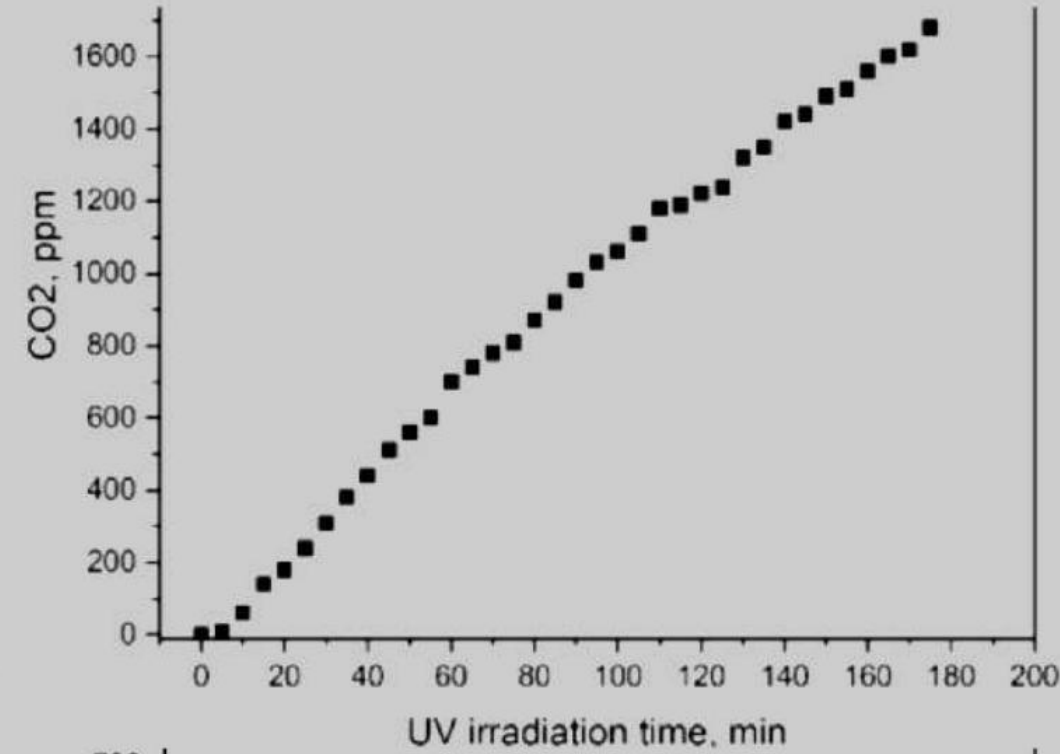
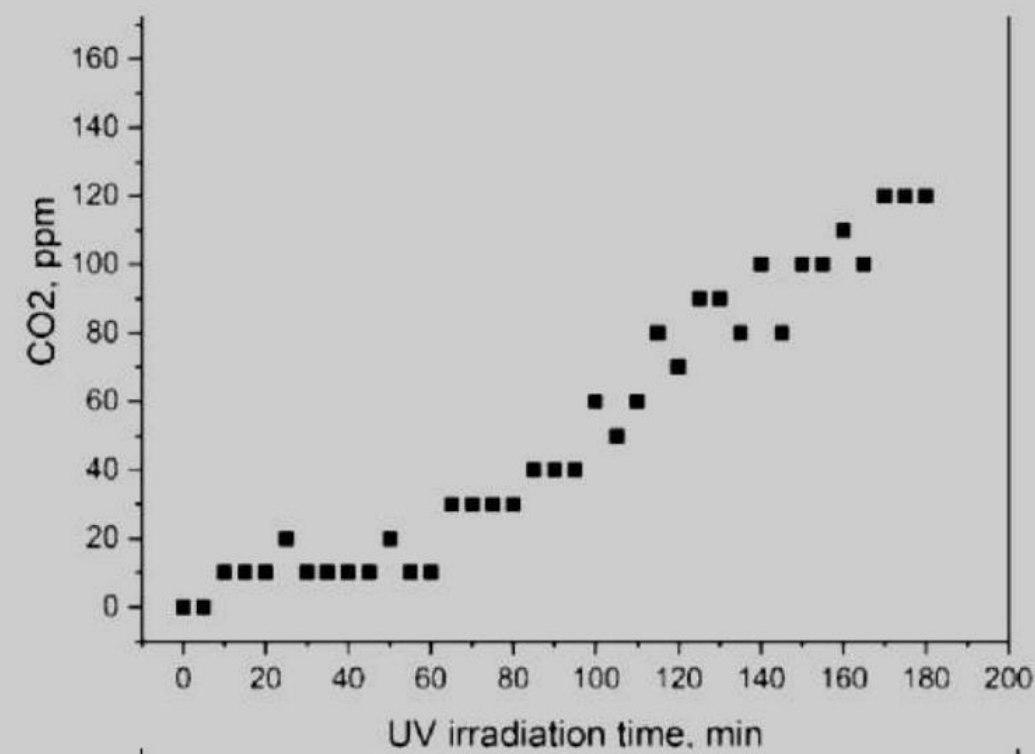
T1	1 l/ha
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T2	0.5 l/ha
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T3	0.5 l/ha
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Efficacy Evidence

LEAFLY Evidence



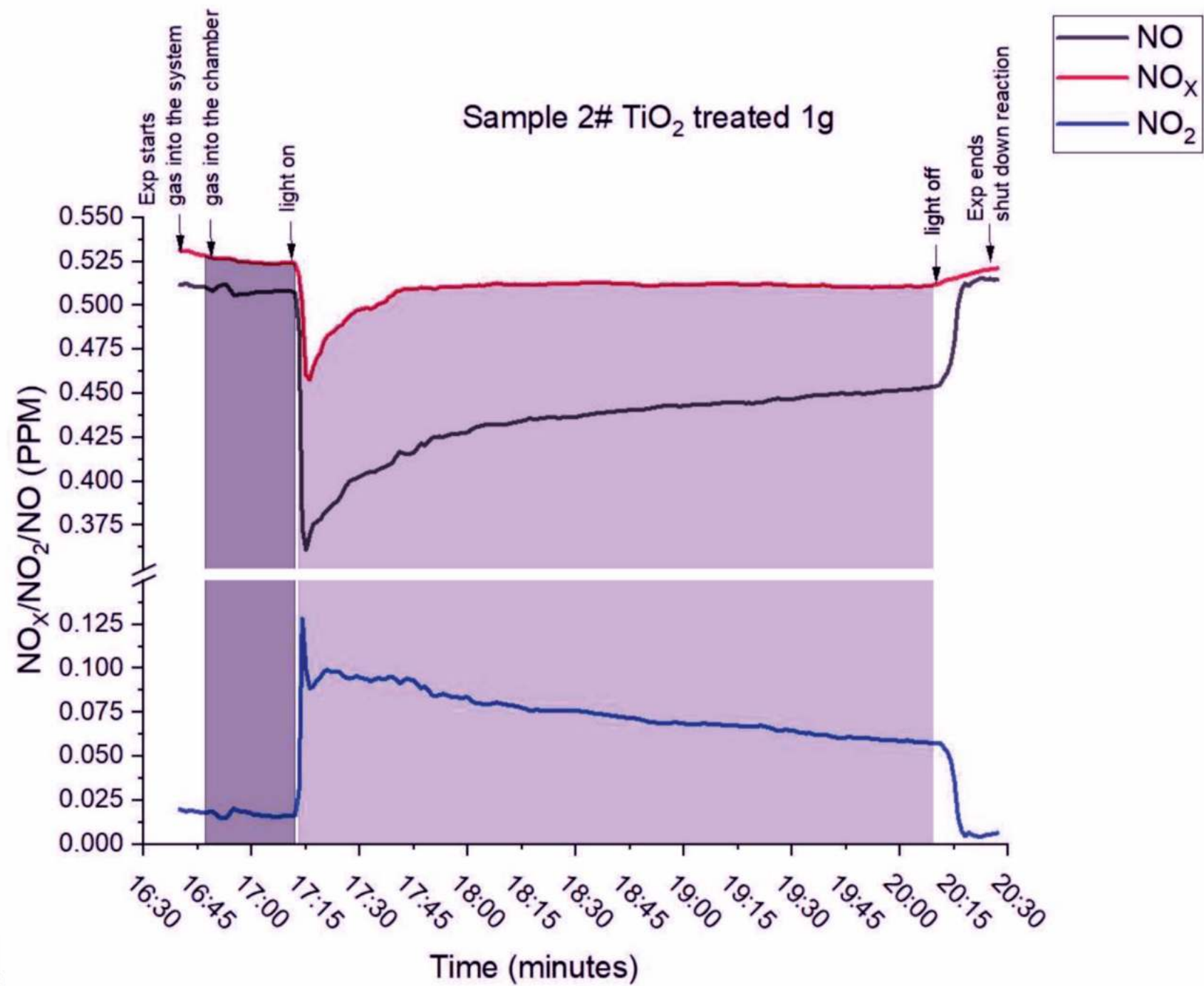
The photocatalytic activity of LEAFLY under ultraviolet radiation and normal light tested by independent experts in photocatalysis in Metropolitan University of Manchester.

The catalytic activity in the decomposition of nitrogen oxides is measured in production CO₂ in this particular experiment.

LEAFLY Evidence

- ✓ LEAFLY is 10 times more efficient in photocatalysis, both under UV and normal light compared to untreated material. This confirms that under daylight the LEAFLY performs close to that under UV light.
- ✓ Photocatalysis experts have quantified the amount of nitrates produced by LEAFLY in a system that simulates atmospheric conditions in open fields.
- ✓ LEAFLY active (0.8 g) was used under daylight for 3 hours which produced 101.03 mg/L nitrate (NO_3^-). Therefore, 500 grams per hectare (1 liter of LEAFLY) they produce 15 kg/ha of nitrates per month. Because of the sample and daily setting mode of N delivery, the N yield is 3 times greater than that measured, with result of 90 kg/ha equivalent N application per hectare for 2 months.

LEAFLY Evidence



Details: Deionised water

TEST REPORT

Analysis Description	Results	Units	UKAS Status	Method No*
Nitrite as NO ₂	< 0.010	mg/L	No	W0100
Nitrate as NO ₃	0.50	mg/L	No	W0100

Details: Untreated Sample

TEST REPORT

Analysis Description	Results	Units	UKAS Status	Method No*
Nitrite as NO ₂	< 0.010	mg/L	No	W0100
Nitrate as NO ₃	4.92	mg/L	No	W0100

Details: Treated Sample

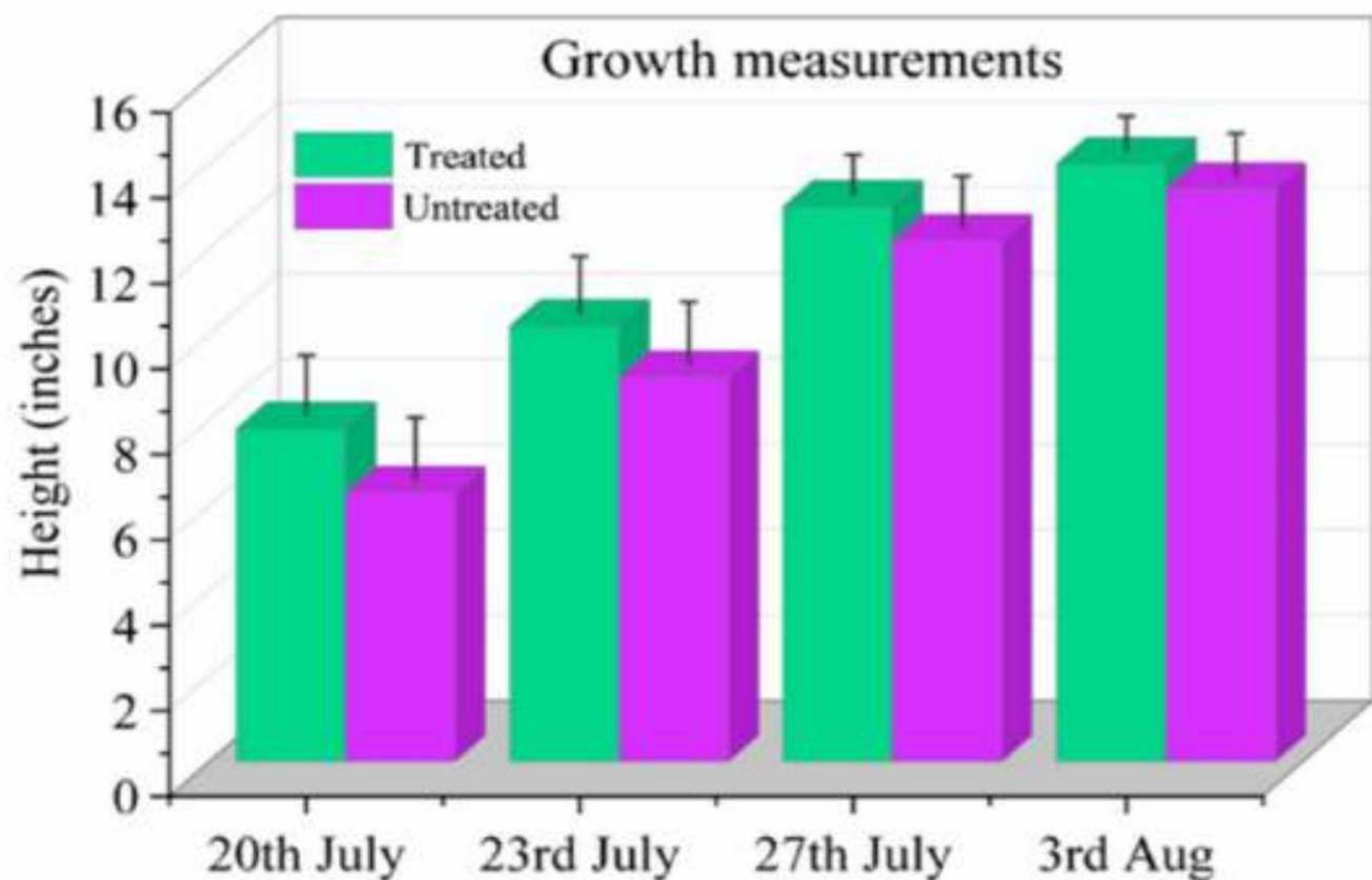
TEST REPORT

Analysis Description	Results	Units	UKAS Status	Method No*
Nitrite as NO ₂	0.219	mg/L	No	W0100
Nitrate as NO ₃	101.03	mg/L	No	W0100

LEAFLY Evidence

GRASS

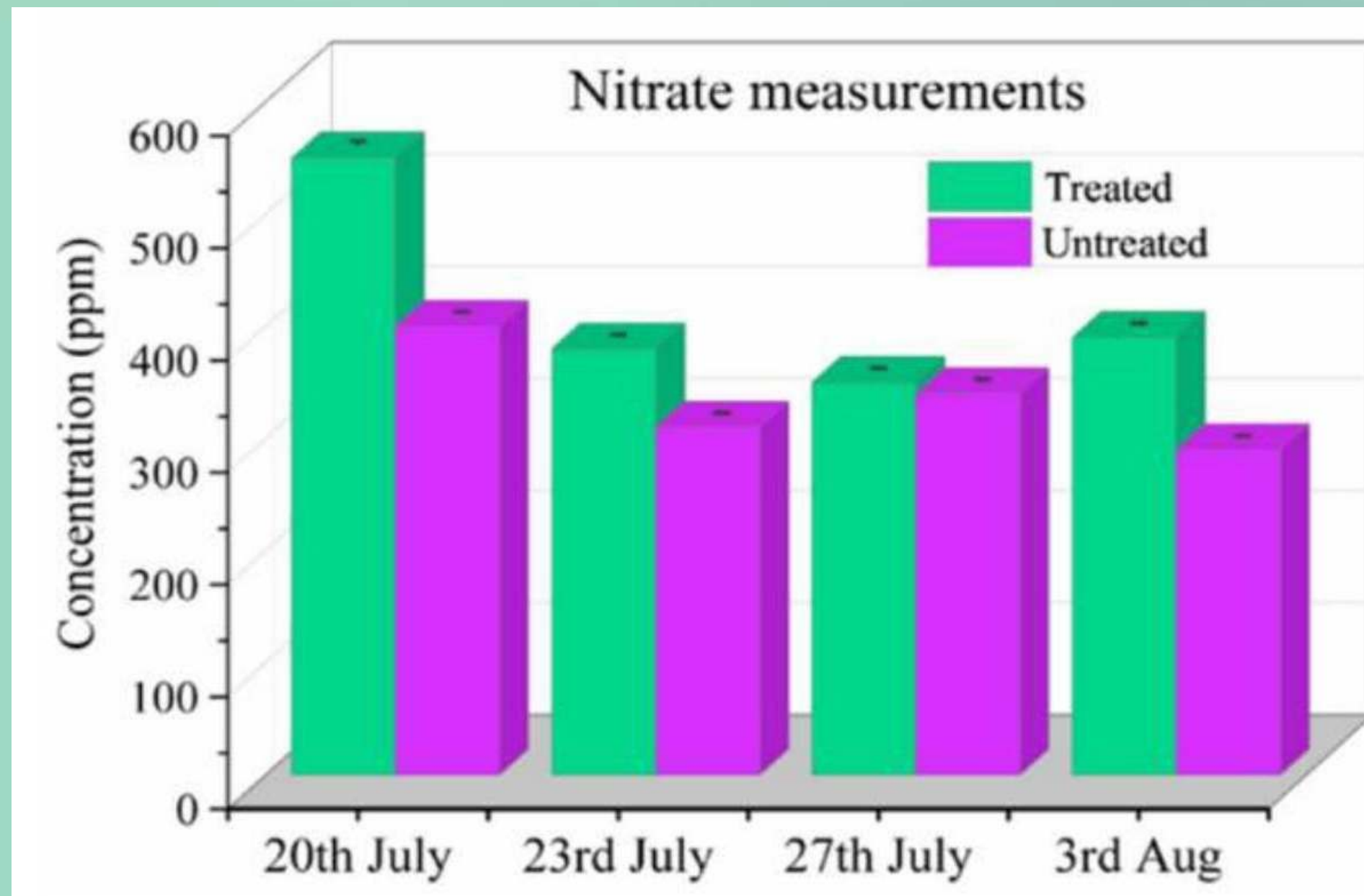
LEAFLY grass experiment - Performance



Grass treated with LEAFLY has increased almost 13% more than that of untreated in more than one week after application.

This could be due to higher intake of nitrate from the plants, which in turn increased the chlorophyll content in plants.

LEAFLY experiment in the grass- Nitrate

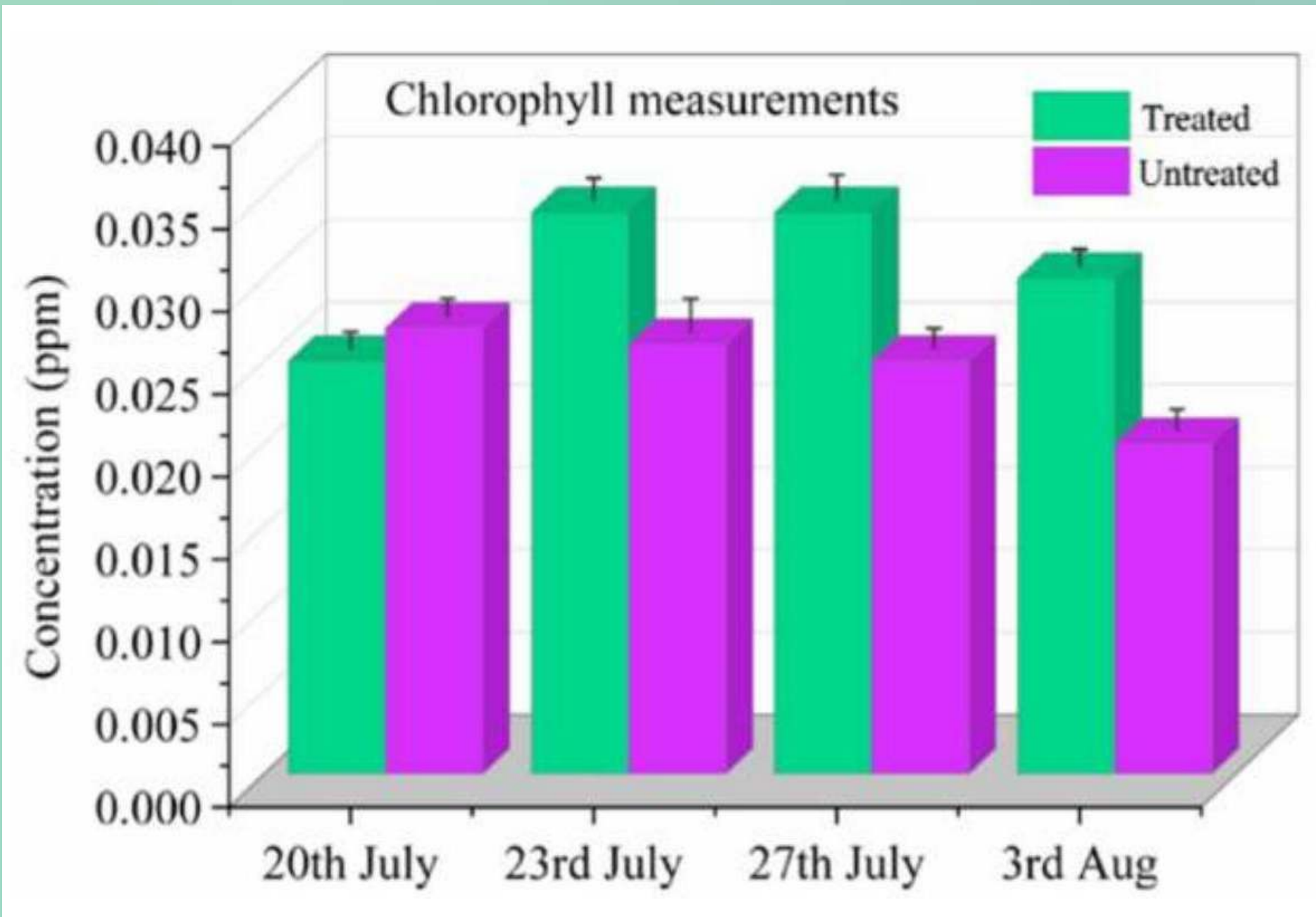


Nitrate readings between LEAFLY-treated and untreated grass are shown on the left.

The results showed that the treated with LEAFLY grass (551.67 ppm) was higher compared to untreated (410 ppm) in terms of nitrate content.

The results further revealed that the processed grass had consistently higher nitrate content over time in LEAFLY-treated grass compared to the control.

LEAFLY experiment in the grass - Chlorophyll



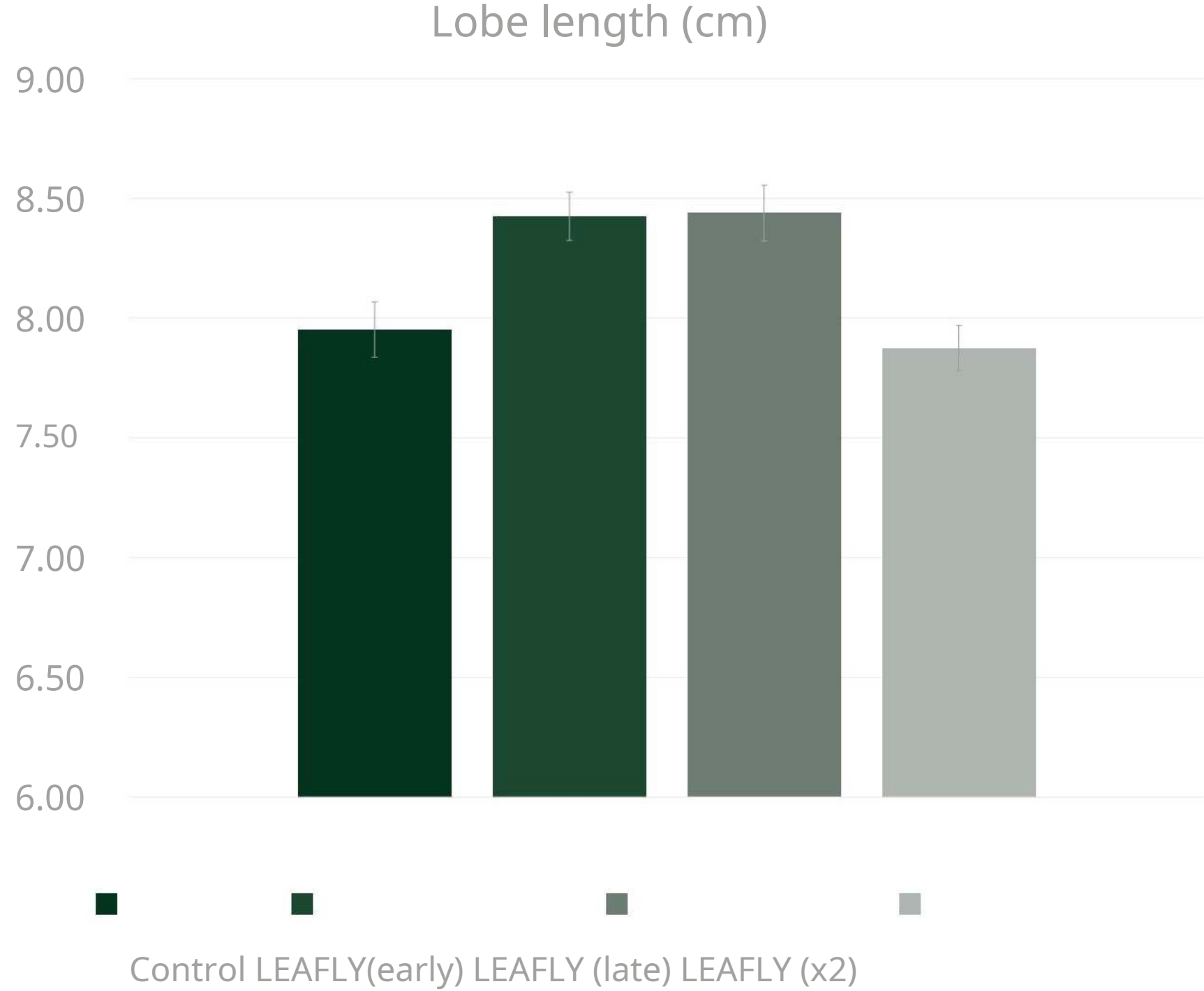
Despite the initial decrease in chlorophyll, possibly due to aging of grass, chlorophyll levels are later stable higher in LEAFLY processed to compared to untreated control.

Overall, according to our experimental results and field tests, TiO₂ LEAFLY photocatalyst is a new and suitable way to enhance of content in nitrogen and chlorophyll in grass, thereby improving crop productivity and biomass.

LEAFLY Evidence

PEAS

LEAFLY Test in Peas - Performance



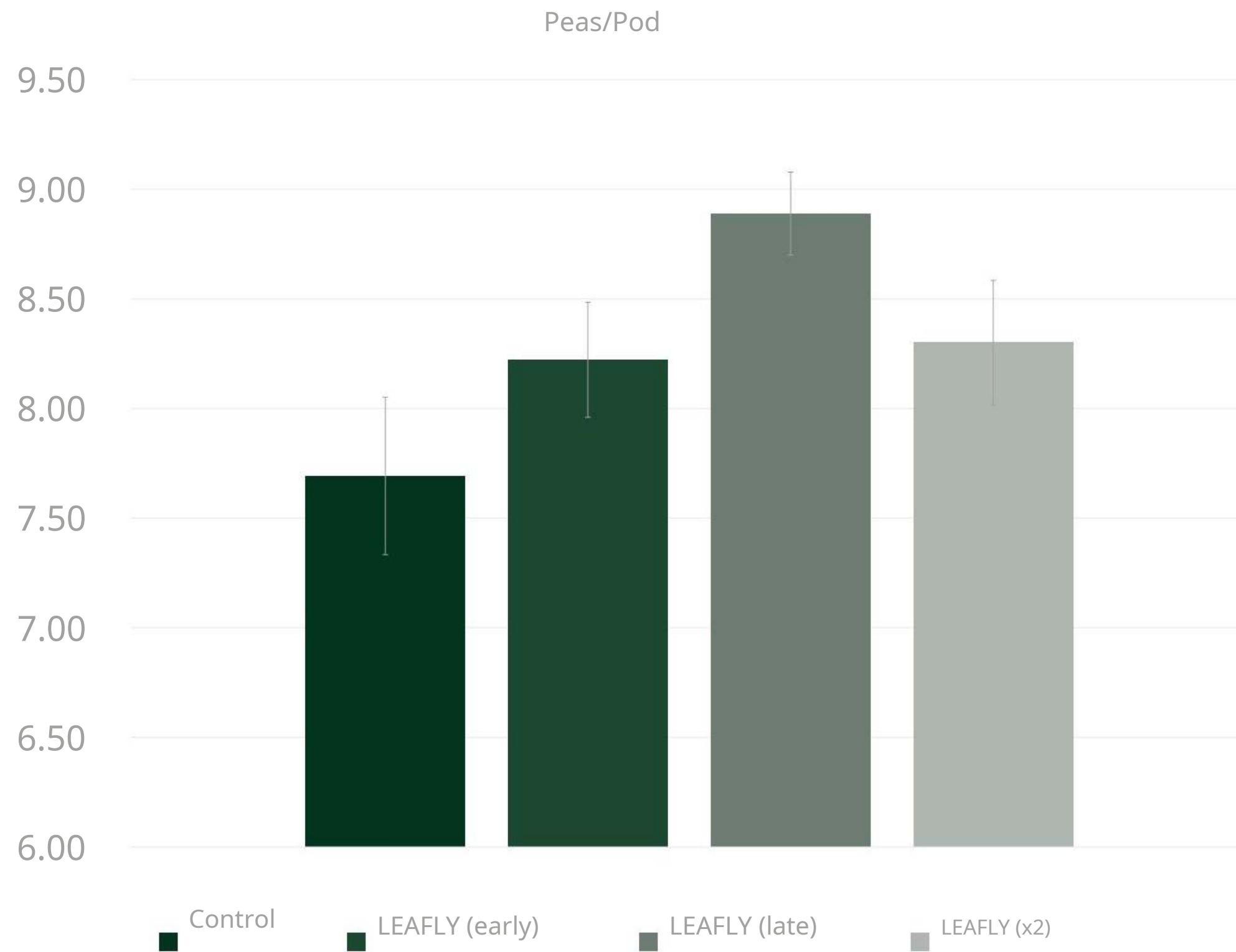
The results for pod length showed a significant increase with the application of LEAFLY.

There was no difference between early or late applications.

The double dose of LEAFLY did not show additional benefit to length results lobe.

Tests on peas have confirmed that LEAFLY has no effect on nitrogen-fixing nodules, so the N produced contributes to plant growth and yield.

LEAFLY Test in Peas - Performance

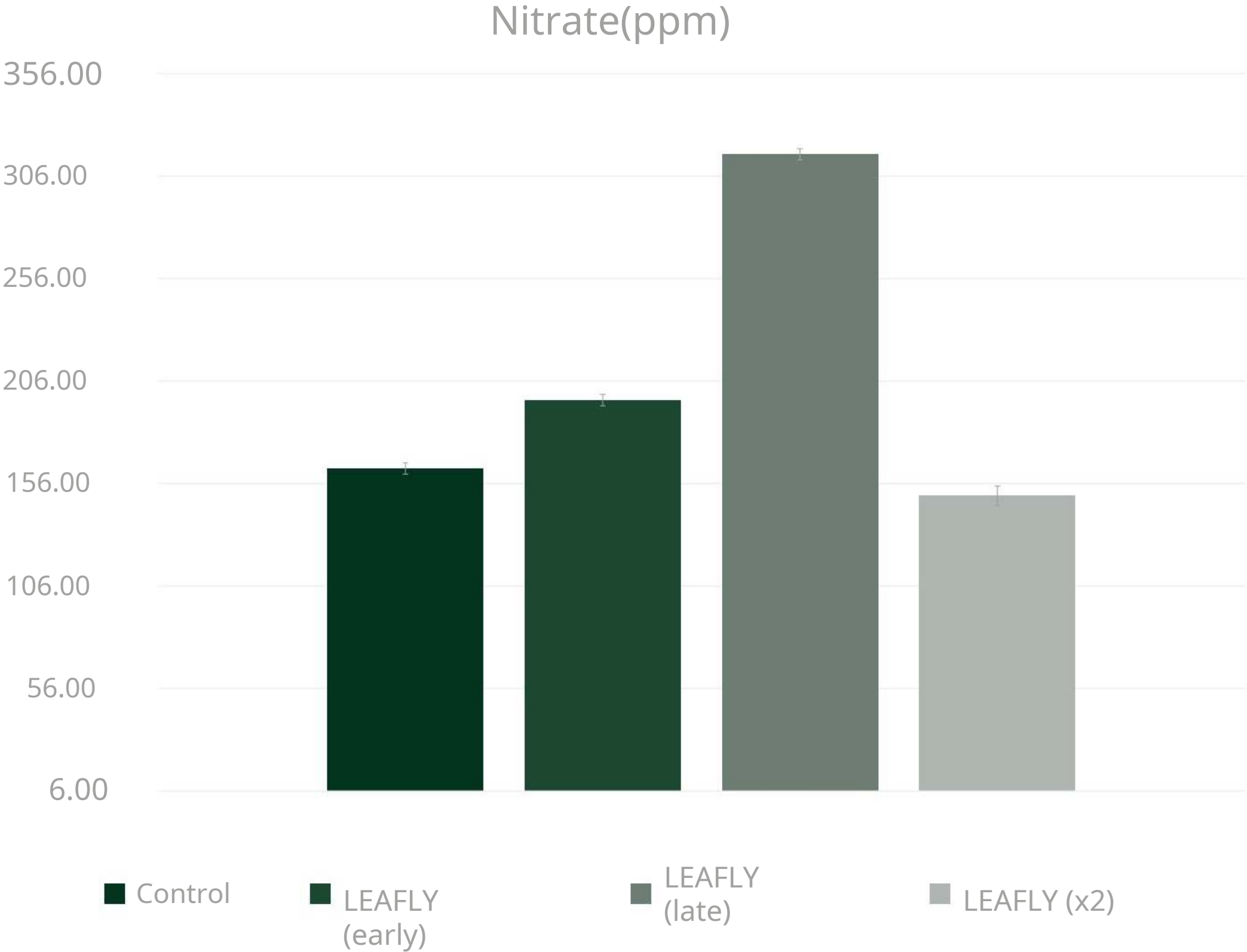


The results of the number of peas per pod showed a significant increase with the application of LEAFLY. Delayed application performed better in this test.

The double dose of LEAFLY showed no additional benefit to pea/pod results.

Nitrogen available to the crop appears to be beneficial resulting in increased growth and yield.

LEAFLY Test in Peas – Performance- Nitrates



The nitrate content of the juice in ppm was measured showing an increase where LEAFLY was applied. The late application had higher nitrate content indicating the efficiency of nitrate production closer to application.

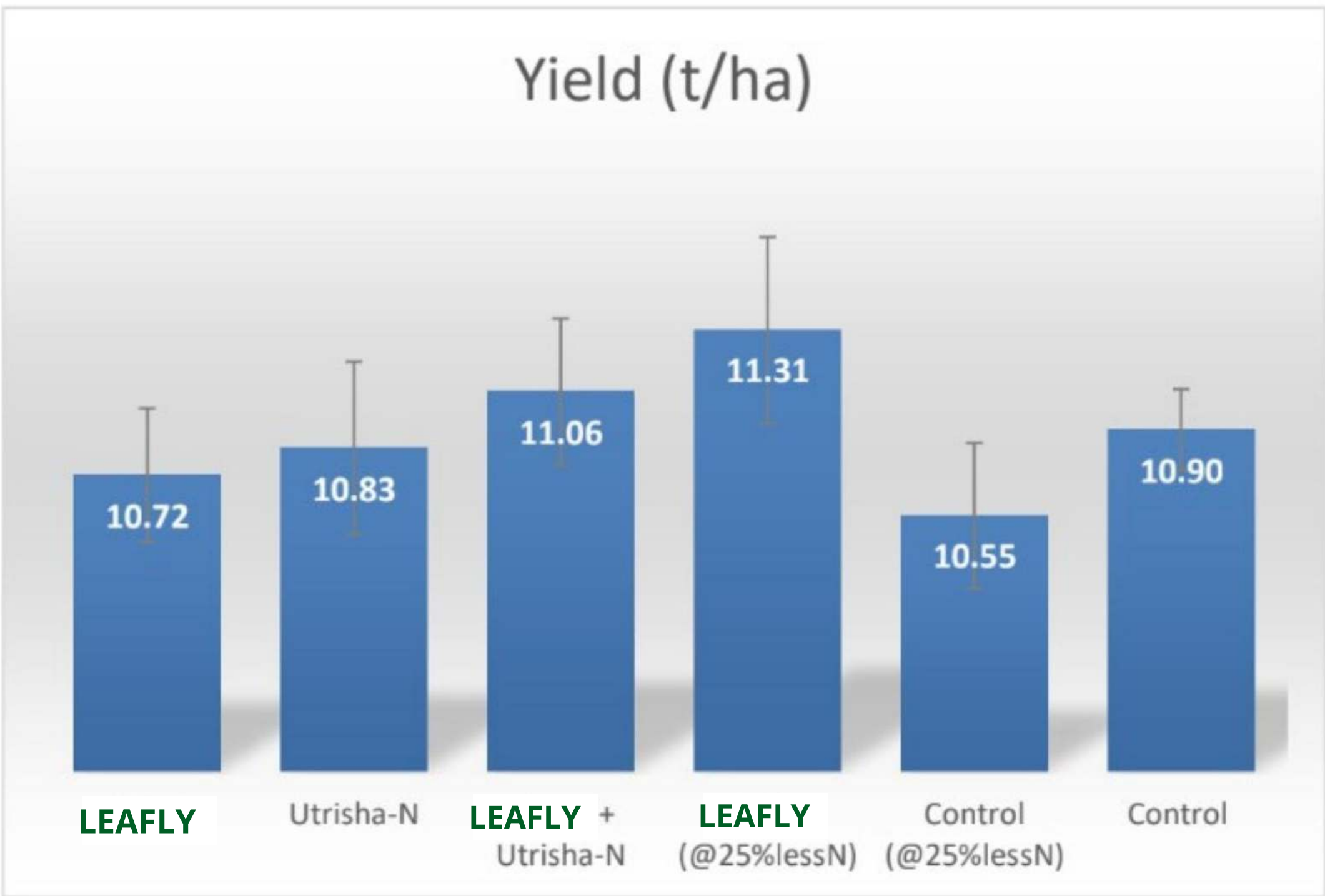
Nitrogen available to the crop appears to be beneficial resulting in increased growth and yield.

CEREALS

LEAFLY



LEAFLY Cereal Test - Performance



LEAFLY performed better when nitrogen application was reduced by 25% compared to standard farming practice.

There is synergy with bacteria that stabilize N. The test was carried out on light soil and each treatment was replicated 4 times. The season (2022) was drier than usual.

LEAFLY GRAINS TEST - Protein

Protein (%)



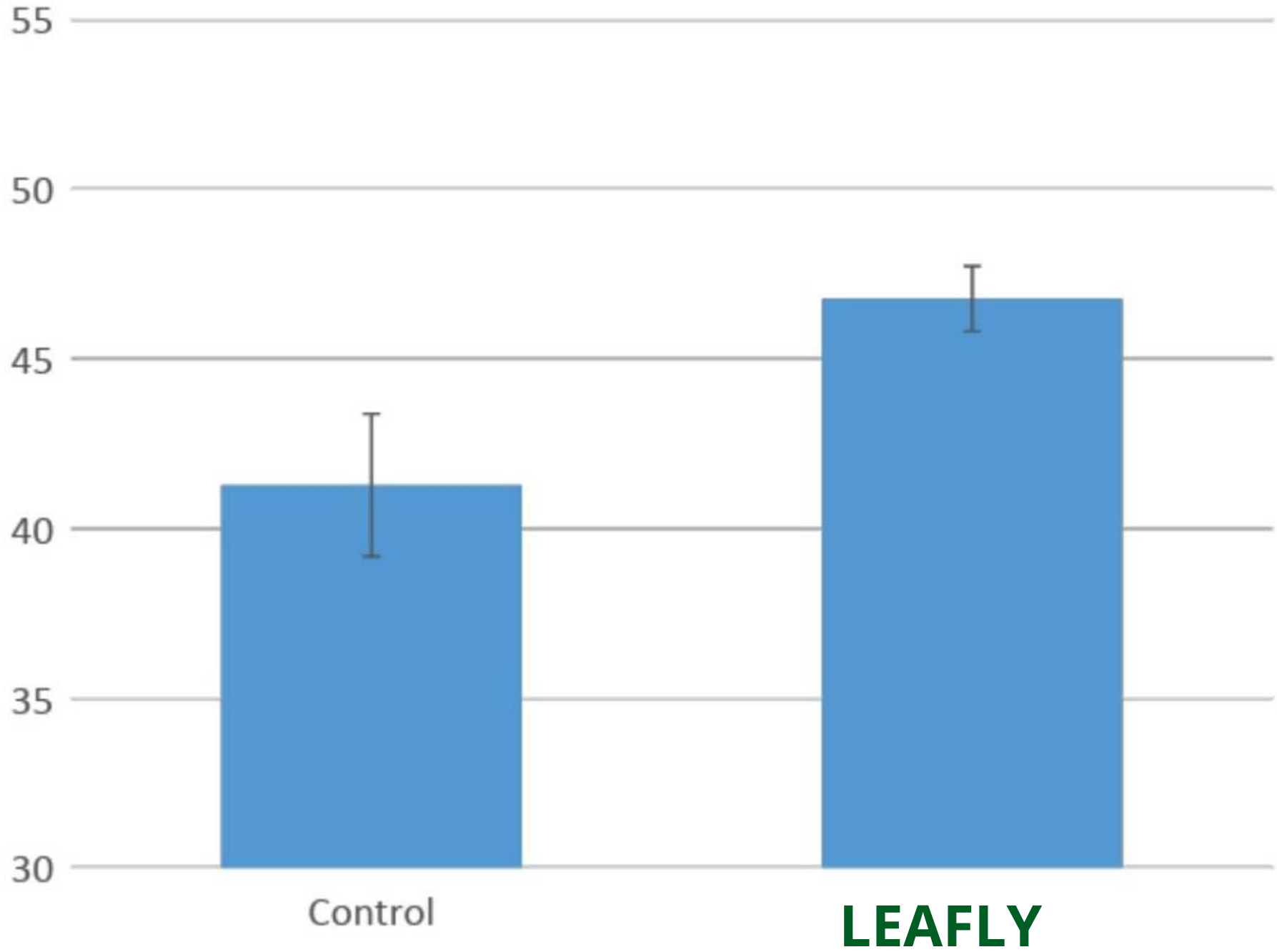
LEAFLY has increased protein content by providing more nitrates salts in the crop and performed better than the other treatments.

Treatment with LEAFLY compensated significantly reducing protein.

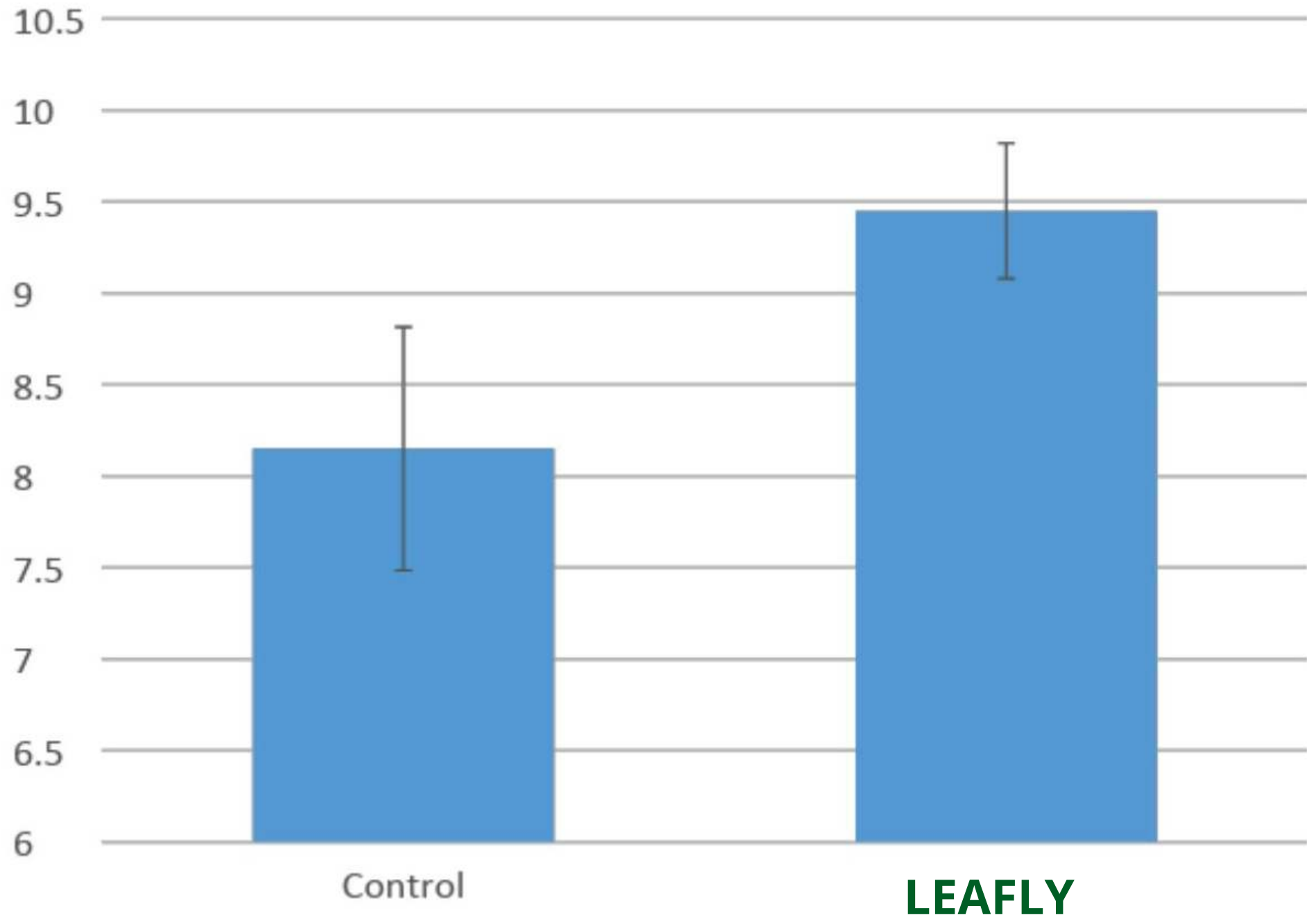
The increase in performance where theN bacteria and LEAFLY synergistically led to a slight decrease in protein.

CEREAL TRIAL WITH LEAFLY - Performance

Total plant weight (g)



Head weight (g)



Messages keys

LEAFLY



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Summary LEAFLY

✓ LEAFLY is a photocatalyst that converts nitrogen oxides into nitrates in the leaf

✓ It is applied at the rate of 100cc/hectare twice during the season.

Coal Units are generated while using LEAFLY (In Progress). LEAFLY provides nitrates to the crop for up to 6 weeks for each application, providing 1.5 kg of nitrates/ha per month, equivalent to 9 kg/ha/season due to its efficiency.