




STAND UP TO STRESS





TERRAMAR™, intended for foliar use in row crops, delivers increased nutrient uptake and enhanced stress mitigation, optimizing plant health and contributing to enhanced yield. It combines two technology platforms unique to Loveland Products:

- **Carbon-Based Technology (CBT)** - Biologically extracted leonardite
- **Marine-Based Technology (MBT)** - Biologically extracted kelp

TERRAMAR is exclusively available from Nutrien Ag Solutions®.

Key Features

- Foliar applications deliver a unique set of highly active, metabolite-based compounds for quicker absorption through the plant leaf tissue
- Compatible with key crop inputs, including liquid fertilizers, insecticides, herbicides and fungicides, for maximum application flexibility

Key Benefits

- CBT enhances nutrient uptake and provides key carbon derivatives for additional energy to optimize plant performance
- MBT improves crop tolerance to abiotic stressors such as heat, drought, salt and cold, which can represent significant yield-limiting factors

Unique Technology for Enhanced Plant Health

With its proprietary combination of cutting-edge technologies, **TERRAMAR** is designed to augment a balanced crop nutrition system by enhancing nutrient uptake and improving plant response to stress.

TERRAMAR can be used to optimize plant performance in all growing conditions, ranging from ideal to stressful conditions where crop development could be impacted.

TERRAMAR may be applied in early post-emerge applications as well as mid- to late-season fungicide applications to enhance plant performance while minimizing weather-induced stress.

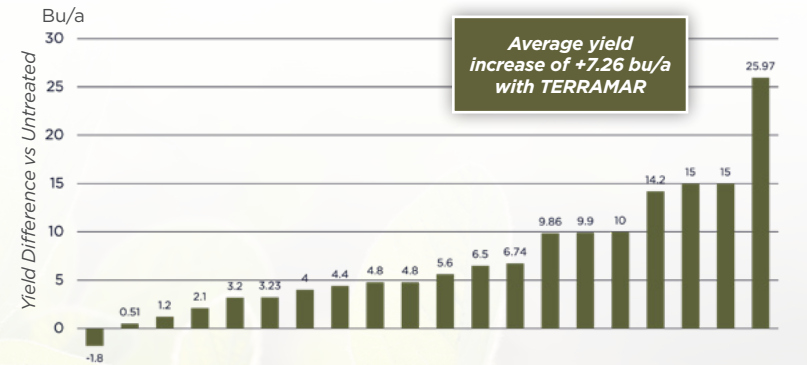
Enhancing Crop Growth and Minimizing Stress

When **TERRAMAR** is applied in conjunction with a foliar program, increased nutrient use efficiency has been documented.

A foliar application of **TERRAMAR** is also particularly suitable for mitigation of abiotic stress at various stages of plant growth.

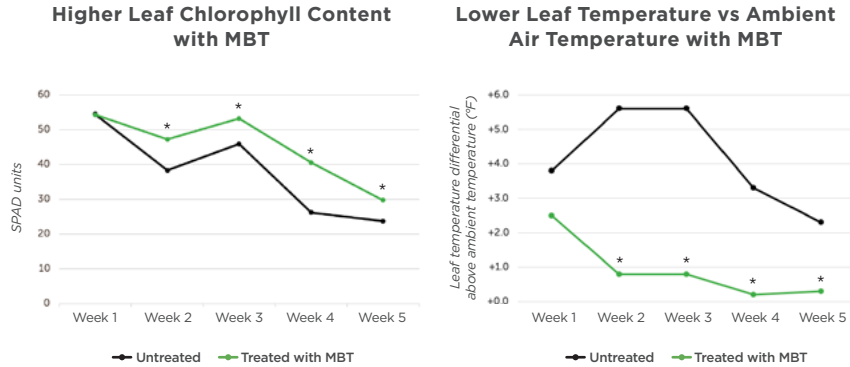
TERRAMAR has been shown to alleviate in-season plant stress by improving plant access to water and nutrition. Visible improvements in stressed crops can often be observed several days after application.

20 Observations on Corn, Soybean, Wheat & Grain Sorghum (2019–2022)

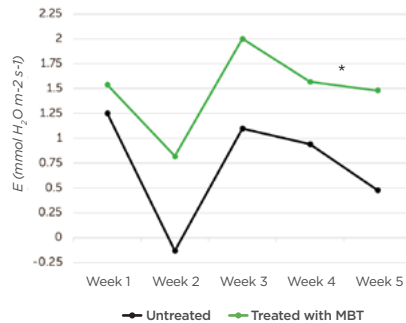


Benefits of Marine-Based Technology

In a greenhouse trial, a foliar application of MBT on VT-stage corn had a positive effect on plant physiological processes during drought stress.



Higher Transpiration Rate with MBT

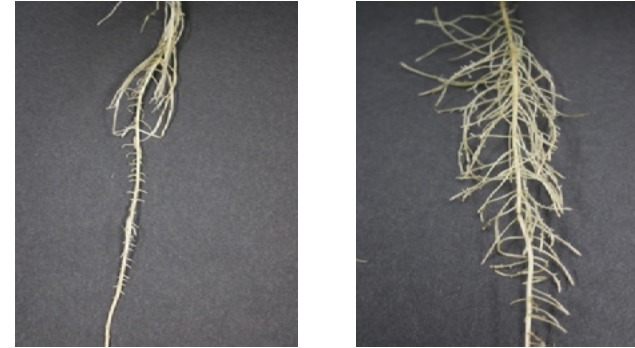


Note: Corn planted on 4/15/21 and harvested 8/6/21. MBT technology was applied at 1 quart/acre at VT on 6/8/21. 20 replications per treatment. The drought stress water regimen (30% of relative water content) began at VT. *Significant difference.

Benefits of Carbon-Based Technology

In a greenhouse trial, CBT significantly enhanced the growth of navy bean seedlings compared to the water control.

Enhanced Plant Growth

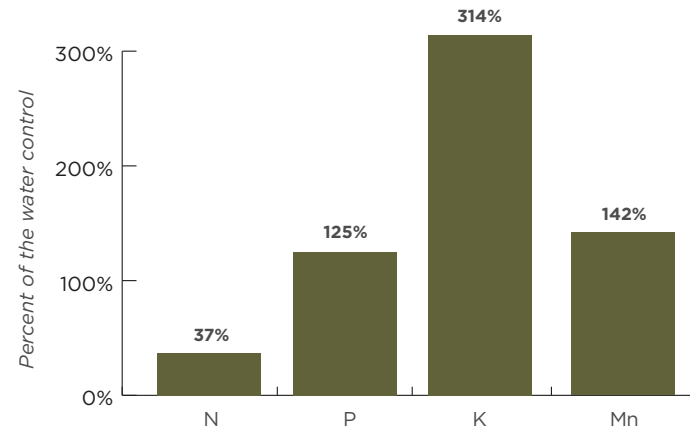


Water control

CBT treatment

CBT technology significantly increased corn shoot uptake of N, P, K and Mn compared to the water control.

Increased Nutrient Uptake in Corn Shoots



Foliar Applications on Corn

Corn - Greenfield, IL (2022)

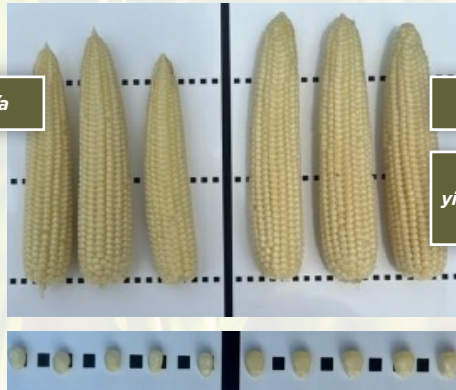
TERRAMAR foliar-applied at 1 quart/acre at V5



Untreated

Visual difference
4 days after
application

Treated with



239.6 bu/a

265.5 bu/a

+25.9 bu/a
yield advantage
vs untreated

Untreated

Treated with



Note: TERRAMAR applied June 26, 2022. Top photo taken June 30, 2022.
Bottom photo taken August 5, 2022.

Corn - Oberlin, KS (2022)

TERRAMAR foliar-applied at 2 quarts/acre



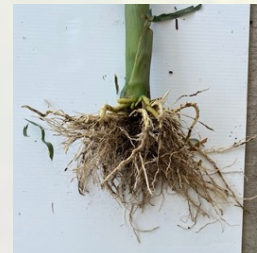
Untreated

Greater stalk diameter
Larger root ball
Deeper roots
Heavier brace roots
57% greater soil penetration

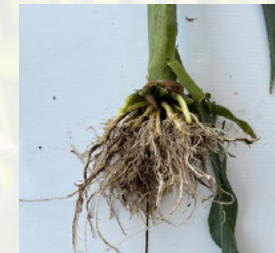
Treated with



+4.8 bu/a
yield advantage
vs untreated



Untreated



Treated with



Note: Photo taken July 11, 2022.

Foliar Applications on Soybeans

Soybeans – Warren, IN (2022)

TERRAMAR foliar-applied at 1 quart/acre; drought stress conditions



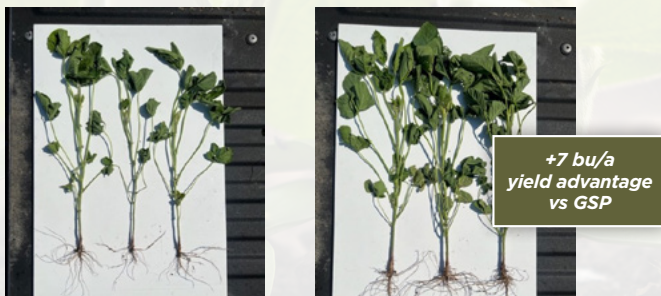
Untreated

Treated with 

Note: Both sides planted with same variety on the same day. TERRAMAR applied June 30, 2022. Photo taken July 5, 2022.

Soybeans – Liberty, IL (2022)

Grower standard practice (GSP) stress reduction product foliar- applied at V4 with herbicide program; TERRAMAR added in tank mix at 1 pint/acre



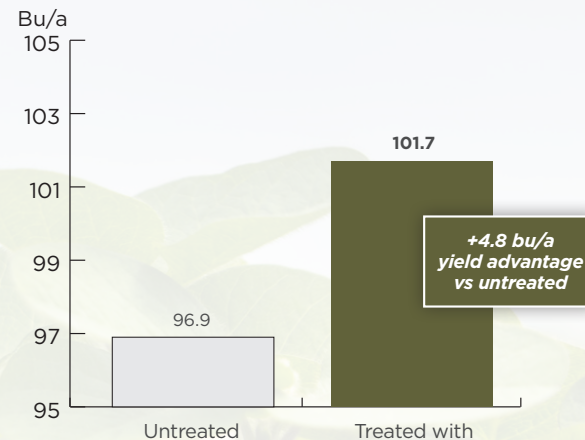
GSP

GSP + 

Note: TERRAMAR applied June 12th, 2022. Photo taken July 11, 2022.

Soybeans – Cozad, NE (2021)

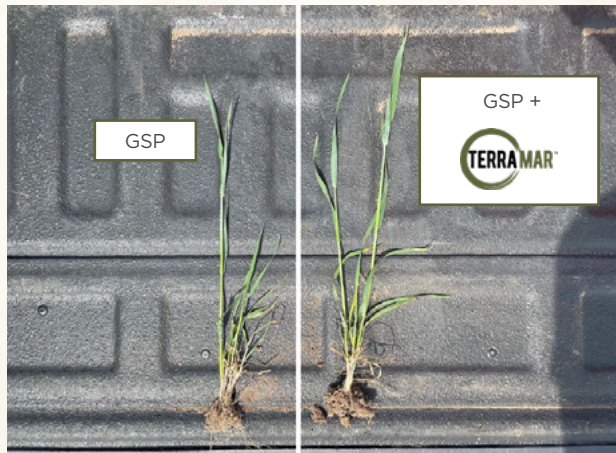
TERRAMAR foliar-applied at 1 quart/acre at R1



Foliar Applications on Wheat

Irrigated Wheat - Imperial, NE (2022)

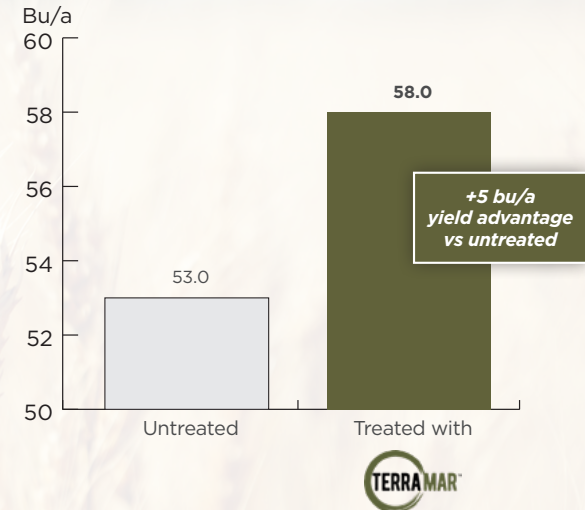
TERRAMAR applied at 2 qts/acre with grower's standard topdress program (GSP)



Note: TERRAMAR applied April 1, 2022. Photos taken May 11, 2022.

Irrigated Wheat - Imperial, NE (2022)

TERRAMAR applied at 2 qts/acre with grower's standard topdress program (GSP)



Notes: Crop harvested July 6-7, 2022. Precipitation of 7.3" from October 2021 to harvest, which was 7.5" less than the 15-year average for this field.



At a Glance

Application	<ul style="list-style-type: none"> Foliar
Key Ingredients	<ul style="list-style-type: none"> Marine-Based Technology - Metabolite-based compounds derived from biologically extracted kelp (<i>Ascophyllum nodosum</i>) Carbon-Based Technology - Key carbon derivatives and metabolic compounds derived from biologically extracted leonardite Soluble potash (4.00% K₂O) derived from potassium acetate
Key Features & Benefits	<ul style="list-style-type: none"> Enhances nutrient uptake while providing key carbon derivatives for additional energy to optimize plant performance Improves crop tolerance to abiotic stressors such as heat, drought, salt and cold Highly soluble and compatible with a broad range of liquid fertilizers, insecticides, herbicides and fungicides

Uses and Rates

Application	Timing	Recommended Rate	Notes
Liquid Foliar	<ul style="list-style-type: none"> With early Post herbicide With late-season fungicide 	<i>1-2 pints/acre</i>	A spray carrier volume of 10-20 gallons per acre is recommended. Use of an adjuvant is encouraged for maximum dispersal and leaf adherence.

NOTE: Please see TERRAMAR label for additional details. Regular applications are important for maximizing crop potential during unexpected stress.

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Nutrien Ag Solutions® Retailer**

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