FUN138 Biostimulant

Date:22.06.26

Overview

FUN138 is a biostimulant based on Trichoderma Asperellum, developed to enhance crop performance, resilience, and nutrient use efficiency across a range of agricultural environments. Leveraging the biological activity of Trichoderma, FUN138 offers growers a practical solution to improve yield and vigor, particularly under conditions of stresses, as nutrient limitation.

Product Profile

Active Ingredient: High-potency Trichoderma Asperellum spores.

Target Function: Enhancement of plant vigor, yield, and nutrient use efficiency under stress conditions.

Application Methods: Seeds treatment, soil irrigation and seedling treatment.

Dose Rate: 1x106 spores/ml per application.

Primary Crops: Wheat, Lettuce, Basil, Maize.

Commercial Positioning: Designed for integration into standard cultivation protocols, suitable for both open-field and controlled environments.

Mode of Action

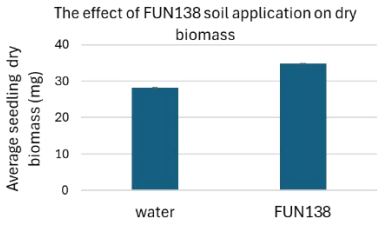
FUN138 operates through colonization of plant roots and internal tissues, establishing a symbiotic relationship that stimulates plant metabolic pathways and fortifies the plant against biotic and abiotic stresses. The biostimulant enhances nutrient uptake and utilization, resulting in improved agronomic efficiency and yield stability—even when fertilizer inputs are reduced or pathogen pressure is present.

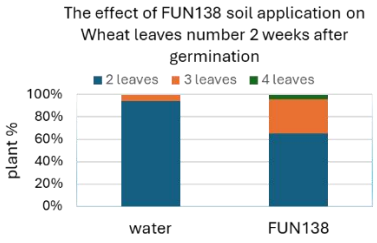
Proof-of-Performance: Experimental Results

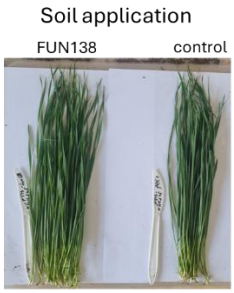
Wheat: Early Development and Yield Enhancement

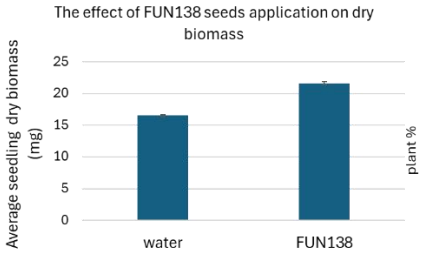
Growth Room Pot Test

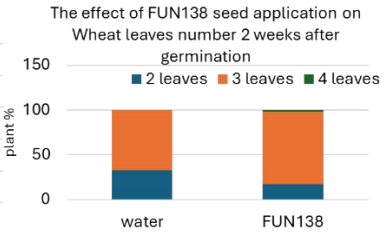
Two application modes—soil irrigation and seed soaking—were tested on wheat seedlings. FUN138-treated seeds produced the highest dry biomass and the most seedlings reaching the three- and four-leaf stages, indicating enhanced early development and vigor.

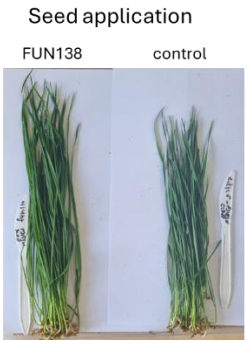






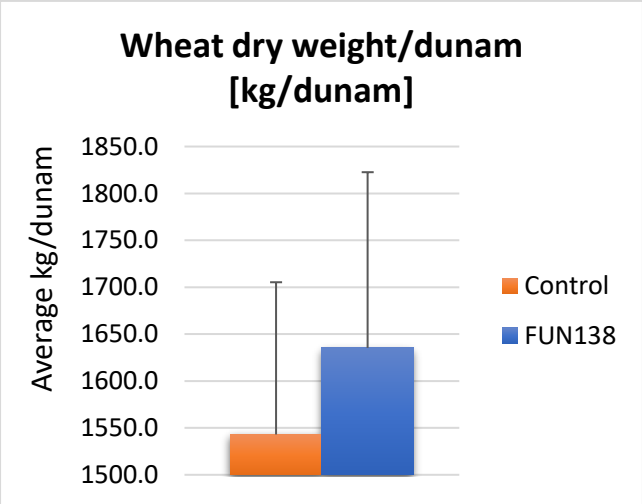






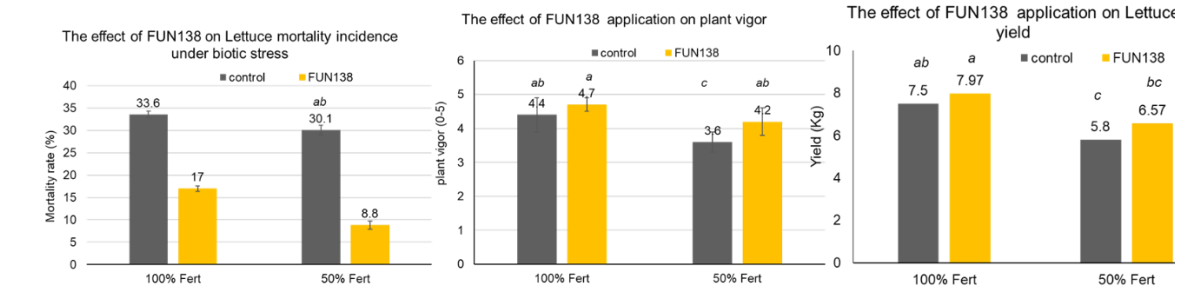
Field Test

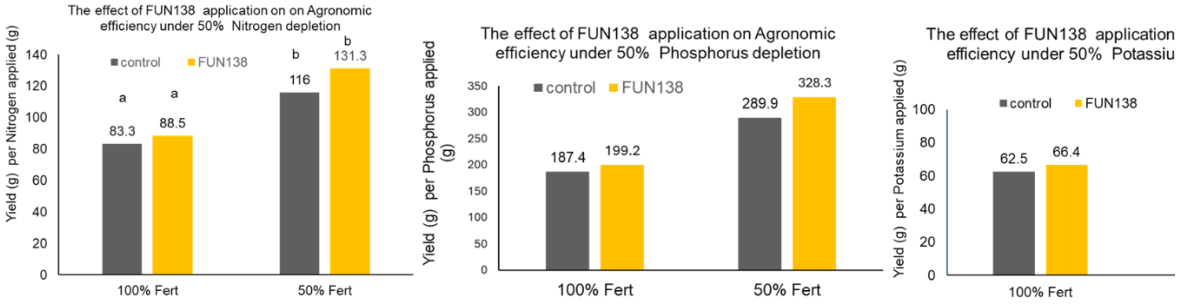
In a field trial in south Israel, wheat seeds treated with FUN138 (via seed soaking) showed a 6% increase in dry biomass yield compared to untreated controls, under non-irrigated and unfertilized conditions.



Lettuce: Nutrient Use Efficiency and Yield Stability

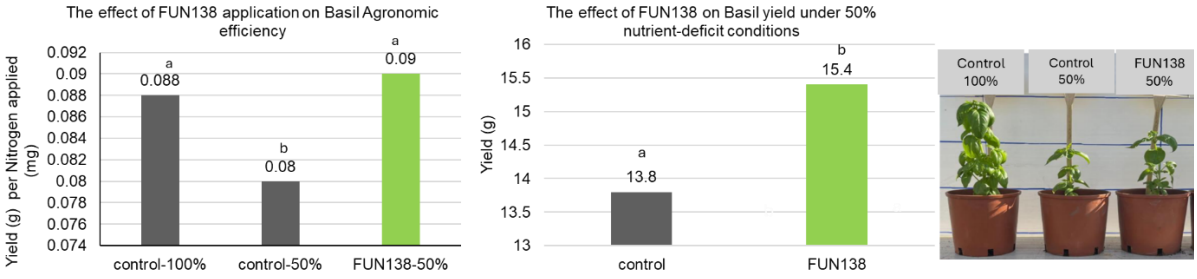
In open-field trials with Romaine lettuce, FUN138 was applied via seedling treatment prior to transplanting. Under both 100% and 50% fertilization regimes, FUN138 reduced plant mortality (by 21.3% and 16.6%, respectively, $P<0.15$), increased vegetative vigor (up to 4.7/5, $P<0.15$), and maintained high yield even with reduced fertilization. FUN138 demonstrated superior agronomic efficiency for nitrogen, phosphorus, and potassium under nutrient-limited conditions.





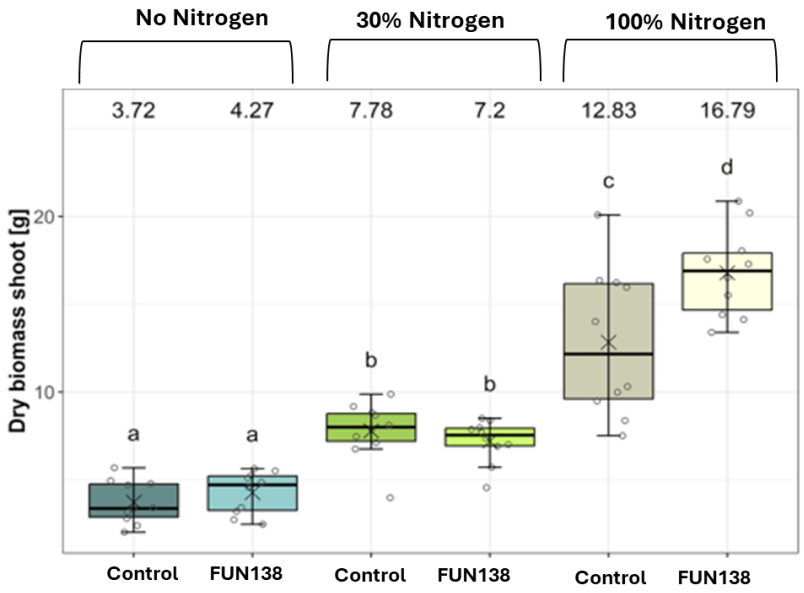
Basil: Yield and Fertilizer Deficit Tolerance

Greenhouse trials in basil revealed that FUN138 significantly improved agronomic efficiency (yield per Nitrogen applied) under 50% fertilization, achieving yield levels comparable to fully fertilized controls ($p<0.1$). Leaf biomass increased by approximately 12% under nutrient-deficit conditions ($p<0.1$).



Maize: Performance under Nitrogen Limitation

FUN138-treated maize plants grown under nitrogen-limited conditions exhibited a 13.8% increase in shoot dry biomass in the highest N-level group, supporting its role in mitigating nutrient stress and promoting growth.



Key Features and Benefits

- Yield Optimization: Consistently increases crop yield and dry biomass across wheat, lettuce, basil, and maize, even under challenging environmental conditions.
- Enhanced Nutrient Use Efficiency: Maximizes uptake and utilization of nitrogen, phosphorus, and potassium, supporting high productivity with reduced fertilizer input.
- Abiotic and Biotic Stress Mitigation: Protects plants from vigor loss due to nutrient deficiency and pathogen infection
- Flexible Application: Effective through multiple delivery methods including seed soaking, soil irrigation, and seedling treatment.
- Integrated Management: Compatible with standard cultivation in both open-field and greenhouse environments.
- Commercial Viability: Provides growers and agronomists a reliable tool for sustainable yield improvement and input optimization.

These features position FUN138 as a versatile biostimulant for modern agriculture, supporting both technical and commercial objectives.

FUNGIT BIOSOLUTIONS
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Summary of Experimental Outcomes

Crop	Application Method	Key Outcome	Yield/Performance Improvement
Wheat (Field)	Seed soaking	Dry biomass yield increase	+6% yield under no irrigation/fertilization
Wheat (Pot)	Seed soaking, soil irrigation	Early vigor, biomass, leaf stage advancement	4-leaf stage only in FUN138-treated seeds
Lettuce	Seedling treatment	Mortality reduction, vigor, nutrient efficiency	21.3% lower mortality; strong yield at 50% fertilization
Basil	Seedling treatment	Agronomic efficiency, yield under deficit	+12% leaf biomass at 50% fertilization
Maize	Seedling treatment	Biomass increase under N limitation	+13.8% shoot dry biomass

Conclusion

FUN138 demonstrates strong biostimulant properties across a range of crops, driving yield, vigor, and nutrient efficiency improvements under both optimal and reduced input conditions. Its versatile application, proven performance, and integration potential make FUN138 an essential tool for agronomists, researchers, growers, and stakeholders seeking sustainable, resilient, and productive agricultural systems.