



MAKRAN begins where soil can no longer hold on.
We produce natural, conventional (pre charged)
plant carbon from pistachio shells,
so every producer can charge it precisely to match
their own formulation.

A foundation is created that holds nutrients in place
and brings life back to the soil.

MAKRAN makes your fertilizer work stronger,
without changing your formula.

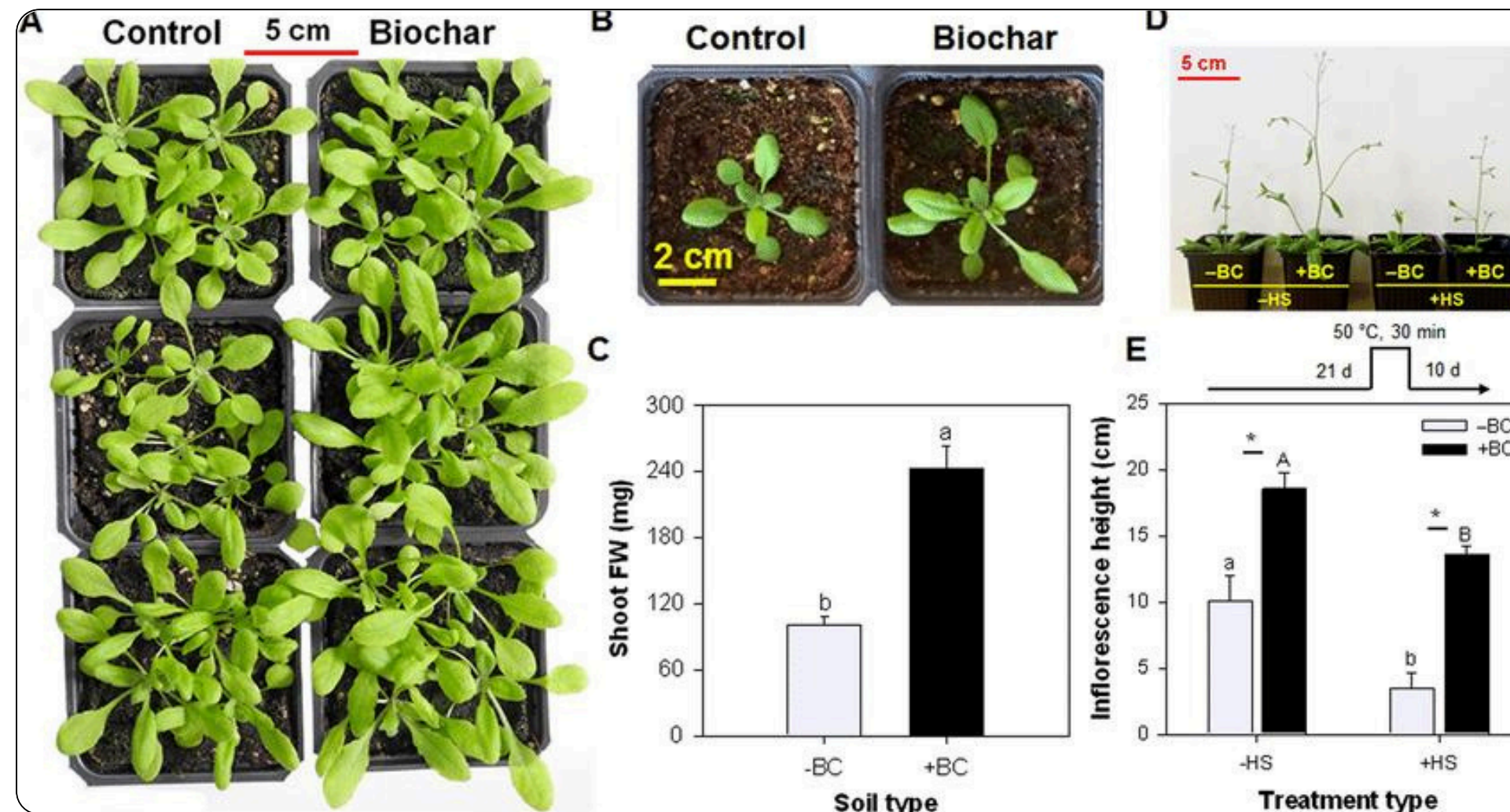
When the foundation is right, microorganisms stay,
roots grow deeper, and results appear.

fertilizer from you; the power of soil from us.

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- Fertilizers are rapidly leached and washed out of the soil.
- The efficiency of microorganisms is low, and they do not persist.
- Water and fertilizer consumption is high.
- Soils have become poor, compacted, lifeless, and lack holding capacity.
- High-quality fertilizers are available, but there is no retaining medium to allow the fertilizers' maximum performance to be realized.

Keep Calm, Count on **MAKRAN**.



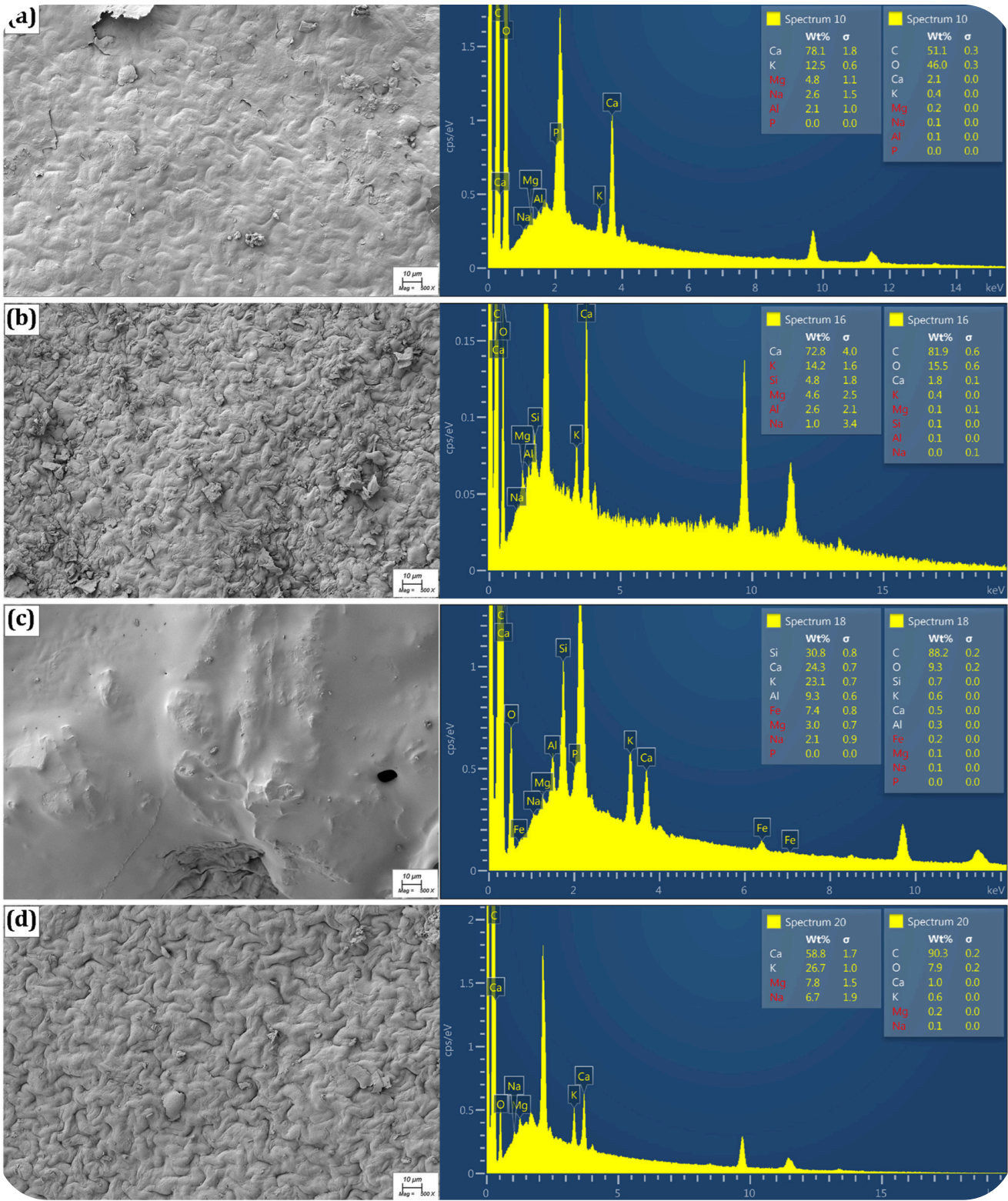
The use of biochar leads to a significant increase in plant growth, improved leaf development, higher fresh weight of the aerial parts, and longer flowering stems. The results show that plants treated with biochar exhibit stronger growth, greater vigor, and higher performance than plants without biochar, even under heat stress conditions.

Technical Features of Pistachio Shell Carbon (Raw and Standard / Before Charging)

Pistachio shells are washed and purified before carbonization; the remaining natural elements are completely safe and compatible with sustainable agriculture.

The porous structure and controlled elements of pistachio shell carbon at different carbonization temperatures (450–650 °C) demonstrate that the porosity, active surface area, and ash content of the product are fully controllable.

You can adjust your order to the desired temperature so that the final product perfectly matches the needs of your fertilizer or microbial application.



PISTACHIO SHELL CARBON IS A FUNDAMENTAL NEED AND SOLUTION.

Pistachio shell carbon = reservoir and performance infrastructure

Pistachio shell carbon:

- It is not a fertilizer
- It is not a microbe
- Rather, it is a retaining, enhancing, and infrastructural medium that multiplies the effectiveness of fertilizers

The need for pistachio shell carbon in soil is like the need to build a reservoir before pouring in water.



- Porous structure (high porosity) and true sponge-like texture
- High specific surface area (large internal active surface, suitable internal contact surface for agriculture)
- Controlled low ash content ($\leq 5\%$)
- Balanced pH (compatible with most formulations)
- Free of salts and heavy metals
- Appropriate particle size for industrial mixing

Temperature	EDS	SEM	Suitable for which needs
450 °C	Low ash, nutrients still preserved	Large and less developed pores, structure still relatively fibrous	Suitable for inoculation with microbes and organic fertilizers that require a high nutrient holding environment
550 °C	Controlled ash, some elements reduced	Balanced porosity with medium pores, suitable sponge, like structure	Suitable for mixing with standard organic and microbial fertilizers and soils with moderate nutrient holding capacity needs
650 °C	Very fine and dense pores, stable and durable structure	Slightly higher ash, reduction of surface nutrients	Suitable for industrial applications or formulations requiring high stability and structural strength, less suitable for living microbes



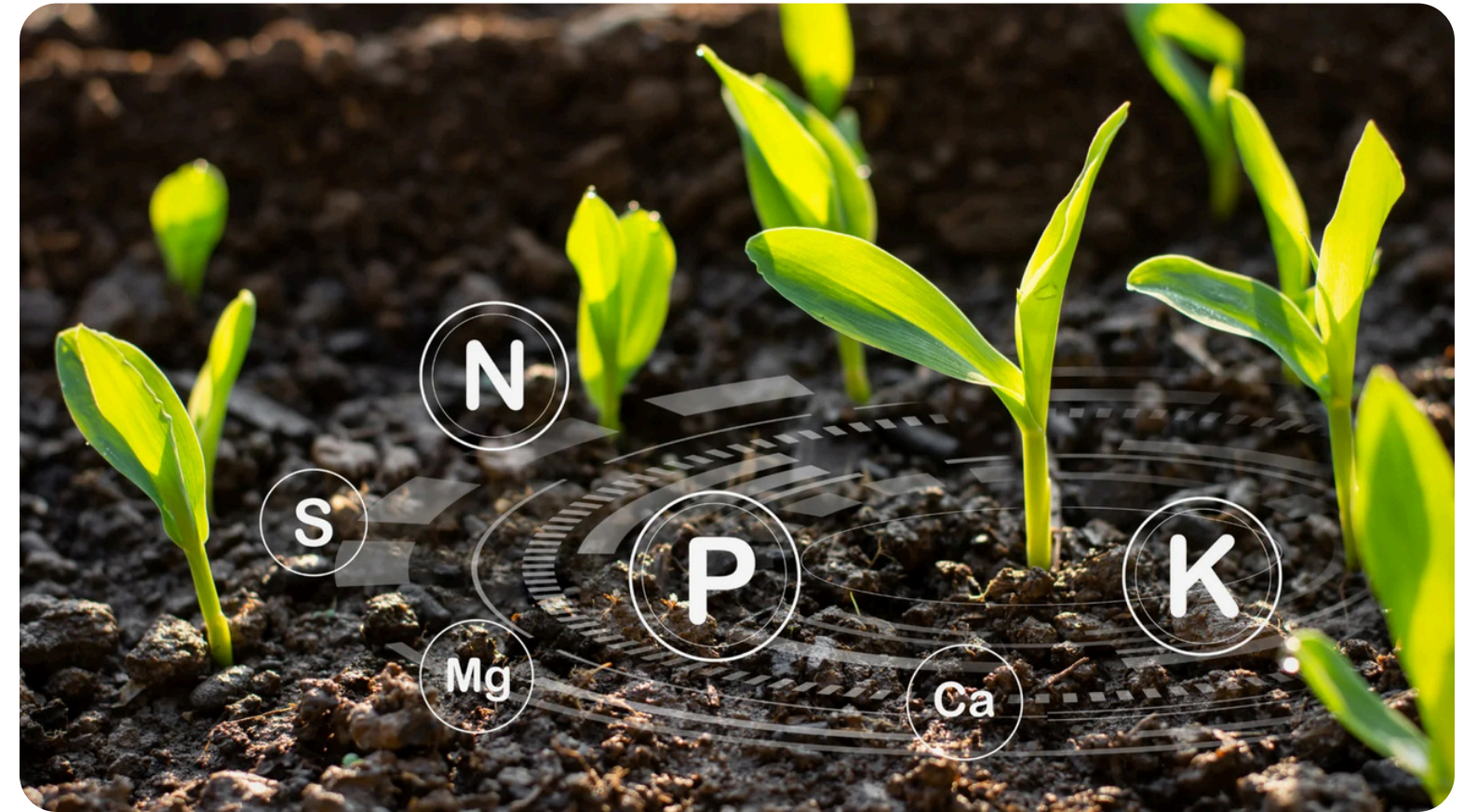
PISTACHIO SHELL CARBON BEFORE CHARGING IS A REGULAR CARBON AND IS NOT CHEMICALLY ACTIVATED.

It is ready to be charged with:

- Organic fertilizers
- Nutrient solutions
- Microorganisms

It is ready to absorb:

- Nutrients
- Microorganisms
- Moisture



WHY PISTACHIO SHELL?



Its fibrous and layered structure leads to stable pores. During the carbonization process, it does not collapse or crumble. Compared to:

- Wood
- Rice husk
- Other agricultural residues

it creates a more genuine and effective active surface.



FOR ORGANIC AND MICROBIAL FERTILIZER PRODUCERS

Your challenge:

- Reduced survival of microorganisms
- Decline in fertilizer effectiveness after application

Solution: Pistachio shell carbon

- A safe habitat for microbes and a site for microbial colonization
- A reservoir for the gradual release of nutrients
- Increased persistence of fertilizer effects in the soil

Result:

Higher farmer satisfaction and repeat purchases of your fertilizer.



APPLICATION IN GREENHOUSES AND MODERN CULTIVATION



Challenge:

- Controlling root nutrition
- Reducing water consumption

Solution: Pistachio Shell Carbon

- Retains moisture in the root zone
- Prevents rapid nutrient leaching
- Helps uniform plant growth
- Reduces plant stress



FOR SUSTAINABLE AND ORGANIC AGRICULTURE

Challenge:

- Limited use of chemical fertilizers
- Need to enhance natural productivity

Solution: Pistachio Shell Carbon

- Completely natural material
- Free of chemical residues
- Improves soil structure in the long term

Aligned with sustainable agriculture standards

Enhances soil health over the long term, not just for a single season



THANK YOU

Invitation to Collaboration

Supply of regular pistachio shell carbon (chargeable)

- Suitable for professional producers
- Available in industrial volumes
- Ready for use in organic and microbial fertilizer production lines
- Suitable for custom charging for any formulation

When used correctly, carbon multiplies efficiency several times.



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