frontiers | Frontiers in Sustainable Food Systems

TYPE Correction
PUBLISHED 04 April 2023
DOI 10.3389/fsufs.2023.1182995

OPEN ACCESS

EDITED AND REVIEWED BY
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SPECIALTY SECTION
This article was submitted to Land, Livelihoods and Food Security, a section of the journal Frontiers in Sustainable Food Systems

RECEIVED 09 March 2023
ACCEPTED 13 March 2023
PUBLISHED 04 April 2023

CITATION
Siedenburg J (2023) Corrigendum: Could microalgae offer promising options for climate action via their agri-food applications? *Front. Sustain. Food Syst.* 7:1182995. doi: 10.3389/fsufs.2023.1182995

Corrigendum: Could microalgae offer promising options for climate action via their agri-food applications?

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KEYWORDS

climate change, food supply, small-scale farmers, agri-food technologies, future foods, microalgae, climate resilience, climate change mitigation

A corrigendum on
Could microalgae offer promising options for climate action via their agrifood applications?

by Siedenburg, J. (2022). *Front. Sustain. Food Syst.* 6:976946. doi: 10.3389/fsufs.2022.976946

In the published article, there was an error in Table 4 as published. In row 2 of this table on 'organic onions', the citation was displayed as "Cordeiro E. C. et al., 2022; Cordeiro M. R. C. et al., 2022". The correct citation is "Cordeiro, E. C. et al., 2022". The corrected Table 4 appears below.

In the published article, there was an error in Table 5 as published. The final row of this table on 'watercress, wheat' included incorrect percentages, though these did not change the pertinence of the source cited. This text read "Two microalgae biostimulants boosted growth of watercress (77-238%) and wheat (70-98%)". It should read "Two microalgae biostimulants boosted germination of watercress by 48–175% and of wheat by 84–98%." The corrected Table 5 appears below.

In the published article, there was an error in Table 6 as published. In row 4 concerning 'water stress', the impact of biostimulants on well-watered plants was mistakenly overstated. The relevant text reads "On well-watered plants biostimulants more than doubled root length, leaf number and leaf area…". It should read "On well-watered plants biostimulants significantly boosted root length, leaf number and leaf area…". The corrected Table 6 appears below.

The authors apologize for these errors and state that they do not change the scientific conclusions of the article in any way.

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TABLE 4 Efficacy of microalgae-based biofertilizers on crops.

Crops	Study findings
Maize, wheat	Key parameters like germination rate and plant height roughly doubled (Uysal et al., 2015)
Organic onions	Enhanced plant growth and delivered yield increases of 28–40% (Cordeiro E. C. et al., 2022)
Wheat	Boosted plant dry weight by 7–33% and grain weight by 6–8%; enhanced mineral content (Renuka et al., 2016)
Leafy vegetables	Strongly enhanced growth with effects comparable to chemical fertilizer (Wuang et al., 2016)
Corn	One microalgae biofertiliser significantly increased plant growth while two others decreased it (Ekinci et al., 2019)
Rice	Significantly raised yields but was most effective when used together with chemical fertilisers (Jha and Prasad, 2006)

TABLE 5 Efficacy of microalgae-based biostimulants on crops.

Crops	Study findings
Organic tomatoes	Doubled key parameters like fruits per plant and total soluble sugars while also improving factors like plant height (Suchithra et al., 2022)
Watercress	Boosted watercress germination by 40% and plant hormonal activity by 60–187%, with stimulant effects strongest at low concentrations (Navarro-López et al., 2020)
Seed spice crops	Increased root and shoot length by 30–50% and gave a two- to three-fold increase in the "vigour index" of plants, which combines growth and germination rates (Kumar et al., 2013)
Wheat	Two microalgae strains were found to boost germination by 30 to 147%, but stimulant effects were strongest at low concentrations, notably 0.2 g/L (Viegas et al., 2021a)
Watercress, wheat	Two microalgae biostimulants boosted germination of watercress by 48–175% and of wheat by 84–98% (Viegas et al., 2021b)

TABLE 6 Examples of studies that explored aspects of these technologies pertinent to climate resilience.

Threat	Study findings
Drought, heat, salinity	Van Oosten et al. (2017) reviewed evidence on whether biostimulants could help crops tolerate abiotic stresses and found numerous studies suggesting they can help crops cope with drought, heat and salinity, but only a few of the biostimulants considered were based on microalgae.
Heat, drought	Santini et al. (2021) tested spirulina-based biostimulants on grapevines facing heat stress and drought and observed greater tolerance of such conditions resulting in higher berry weight (+11%)
Drought	Martini et al. (2021) tested chlorella-based biostimulants on maize plants and observed greater root development and accumulation of microelements in plant tissue, resulting in enhanced tolerance to nitrogen deficiency and improved resistance to drought stress.
Water stress	Oancea et al. (2013) tested nannochloris-based biostimulants on well-watered and water-stressed tomato plants. On well-watered plants biostimulants significantly boosted root length, leaf number and leaf area, while on water-stressed plants they alleviated the adverse effects of water stress on root development and strongly mitigated adverse effects on plant height.
Water stress	Mancuso et al. (2006) tested a microalgae extract as a biostimulant on grape plants and found it increased leaf water potential and stomatal conductance under drought stress.
Salinity	Abd El-Baky et al. (2010) tested spirulina and chlorella extracts on wheat plants irrigated with seawater and found they helped the plants cope with salinity while also sharply enhancing the nutritional profile of wheat grains, including their protein content and antioxidant capacity.
Salinity	Guzmán-Murillo et al. (2013) tested two microalgal extracts on bell pepper seeds facing salt stress and observed longer roots and lower stress effects, resulting in substantially higher germination rates.