



International Research Association for Organic Food Quality
and Health

Seminar the 18th of September
from 9.00-10.00 am CEST online at Zoom

**Effects of Pre- and Postharvest Applications of
Biostimulant on the Quality of Organic
Strawberries**

with Speaker,
Cyrine Ben M'Rad

You are invited to a scheduled Zoom meeting. Join:

[https://ucph-
ku.zoom.us/j/62253393435?pwd=b0lcSYMRTzfnkhNef2G53NH7iMYkVh.1](https://ucph-ku.zoom.us/j/62253393435?pwd=b0lcSYMRTzfnkhNef2G53NH7iMYkVh.1)

Meeting ID: 622 5339 3435
Passcode: 732232

The workshop is free of charge.

Program:

- 09.00-09.05 am: Welcome by FQH Carola Strassner
- 09.05-09.35 am: Seminar presentation by Cyrine Ben M'Rad
- 09.35-09.55 am: Discussion in plenum or break-out rooms
(dependent on the number of attendants)
- 09.55-10.00 am: Wrap up, presentation of the next workshop
and goodbye!

The speaker of this workshop:

Speaker



Cyrine Ben M'Rad holds an Agricultural Engineering degree from the National Agronomic Institute of Tunisia (INAT, 2023) and a Master's degree in Mediterranean Organic Agriculture from (CIHEAM Bari, Italy, 2025). Her academic background combines agricultural sciences, organic farming, and sustainable agricultural systems, with a particular interest in the challenges facing Mediterranean agriculture.

During her Master's research, she investigated the effects of pre- and postharvest biostimulant applications on the quality of organically grown strawberries. She has also gained international research and field experience in Italy, working on topics related to plant health, *Xylella fastidiosa*, and sustainable agricultural practices.

Her interests lie at the intersection of agroecology, organic agriculture, plant health, and climate-resilient farming systems. She is particularly interested in translating scientific knowledge into

practical solutions that can support the transition toward more sustainable and resilient Mediterranean agri-food systems.

Abstract:

The growing demand for sustainable agricultural practices has emphasized biostimulants as promising strategies to improve crop performance under the Mediterranean climate conditions. This study evaluated the effects of three commercial biostimulants on organically grown strawberry variety Candy in an open tunnel in southern Italy. Five foliar treatments were applied in the field: an

untreated control (T0), a water control (T1), a plant based mixture containing amino acids-peptides-humic acids-seaweed extract (T2), a seaweed extract-based product (T3), and a protein hydrolysate derived from Fabaceae (T4). Measurements included vegetative growth, yield and fruit quality traits. However, the susceptibility to postharvest diseases was assessed through postharvest application of treatments. The application of biostimulants notably improved the quality attributes of organic strawberries compared to controls. The T2 treatment significantly enhanced stomatal conductance (0.39), transpiration ($4.6 \text{ mmol H}_2\text{O m}^{-2} \text{ s}^{-1}$), and CO_2 assimilation ($18.5 \text{ } \mu\text{mol CO}_2 \text{ m}^{-2} \text{ s}^{-1}$), reflecting improved photosynthetic efficiency. The improvement in the physiological activities of the plant was translated by optimised plant metabolism with higher levels of polyphenols (409.65 mg GAE/100 g), as well as antioxidant activity (2198.4 $\mu\text{mol TEAC/100 g}$), and quality attributes, such as fruit firmness (0.95 KgF/cm²) and soluble solid content (17.38°B). The T4 treatment enhanced fruit growth, resulting in a higher mean fruit weight (16 g) and a 20% increase in yield, as well as better control of grey mold infection, compared to the untreated control. Overall, the findings indicated that biostimulants, particularly the amino acids-peptides-humic acids-seaweed formulation, are effective in improving fruit quality and mitigating the high-temperature challenge in the Mediterranean area.