

Session Biosphere: April 13th 09.00 hrs

1s5 Nature-based solutions for circular food systems under climate change

Seaweed extracts to boost crop productivity under stress conditions

VAN DER MEER IM 1), VISSER W 2), DE VOS R 1), VAN DER WERF A 2)

1) Wageningen Plant Research, Bioscience, The Netherlands,

2) Wageningen Plant Research, Agrosystems Research, The Netherlands

In the coming decades our world will face several major problems: climate change and a growing world population, combined with an increased welfare. Together with increased temperatures, we will face increased drought and salinisation, with negative effects on crop growth and productivity worldwide. How to combat these seemingly inevitable effects, besides attitude change? Based on an extensive literature review combined with our own experimental results, we show that seaweed extracts have promising biostimulant properties on crops both under stress and non-stress conditions. We will give an overview of effects of seaweed extracts on productivity and growth both under stress (drought and saline) and non-stress conditions, and shortly discuss putative underlying mechanisms of improved growth and productivity, and the seaweed extract compounds that might be responsible for this. We will show our own results on crop productivity under salt stress conditions and how we want to address the 'mode of action'. Finally, we discuss the impact seaweed extracts might have on specifically enhancing the protein content of crops to meet the growing food demand in terms of quality and quantity.

Keywords: seaweed extracts, biostimulants, crop production, abiotic stress