Graphical Communication of Crop Response to CO$_2$ and Temperature

Understanding crop growth responses to rising atmospheric CO$_2$ concentrations and potential rising air temperatures can be a challenge for the media and general public. Results can be complicated and difficult to comprehend, particularly in detailed scientific modeling studies and meta-analyses of crop responses to these two important variables. Better methods are needed to distill and foster communication of scientific knowledge to the media and general public.

In a new article published in Agricultural & Environmental Letters, a researcher devised a simple method to merge two mathematical expressions of crop growth responses to a range of both (a) CO$_2$ concentration and (b) air temperature. This procedure provided a simple, direct graphical view of crop growth responses to both CO$_2$ and temperature in three dimensions—a graphic that can be rotated to provide various perspectives.

Simplified graphical analyses can improve scientific communication to the media and general public. However, such graphical analyses cannot replace more complex graphical analysis of specific scientific studies for communication among scientific specialists.

Adapted from Allen, L.H. 2019. Simplifying crop growth response to rising CO$_2$ and elevated temperature. Agric. Environ. Lett. 4:190021. View the open access article online at http://dx.doi.org/doi:10.2134/ael2019.06.0021