



Physiological and biochemical response to high temperature stress in Okra (*Abelmoschus esculentus* L. Moench)

Shahnoosh Hayamanesh, Claudia Keitel, Nabil Ahmad, and Richard Trethowan
Faculty of Agriculture and Environment, The University of Sydney, Australia

High temperature has been shown to lower the growth and yield of Okra, an important summer vegetable crop grown in Asia, Africa, the Middle East and Australia. We aimed to characterise the physiological and biochemical response of Okra to heat stress. 150 genotypes from Pakistan and the AVRDC (The World Vegetable Centre) were screened for their physiological response (fluorescence, electrolyte leakage and yield) to heat in a greenhouse. Four genotypes (including heat tolerant and sensitive) were selected and subsequently grown in control and hot greenhouses. Daytime temperatures were on average 10°C warmer in the hot greenhouse, whereas nighttime temperatures were similar between the two temperature treatments. During a 12 week period, the physiological (assimilation rate, transpiration rate, stomatal conductance, fluorescence, electrolyte leakage, water potential) and biochemical (carbohydrates, sugar alcohols, C content) response of the four genotypes to heat stress was assessed. The effect of heat stress on the C allocation patterns and yield in Okra will be discussed.