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## Alteration in Carbohydrate Metabolism Modulates Thermotolerance of Plant under Heat Stress

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### 5.1 Introduction

Amid the ever-changing components of the natural environment, the persistently intensifying ambient temperature is considered one of the most detrimental stresses. Heat stress (HS) is often explicated as the elevation in temperature beyond a threshold level, for a period of time, which is sufficient to cause irreversible damage to growth and development processes of flora. Generally, a transient increase in temperature, usually 10–15 °C above ambient, is considered as heat shock or HS (Wahid et al. 2007). Future change in global climatic condition, with a forecast of 1.5–5.8 °C amplification in temperature, leading to global warming, threatens agricultural production (Hemantaranjan et al. 2014). The existing hypothesis about climate change worldwide is that most agricultural land will confront increased environmental fluctuation. Climatological extremes, including very high temperatures, are predicted to have a general negative effect on plant growth and development, leading to a catastrophic loss of crop productivity and quality globally (Yuan et al. 2017). Though HS and other abiotic stresses are limiting factors for crop production, crop yield is often at the