

Environmental effects on the accumulation of hydroxamic acids in wheat seedlings: The importance of plant growth rate

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The effects of temperature and photoperiod on accumulation of hydroxamic acids (Hx) in wheat (*Triticum aestivum* L.) seedlings were evaluated under laboratory conditions. Hx concentrations were significantly higher at higher temperatures. No such clear trend was found for the photoperiod effect. The significant effect of temperature and photoperiod on growth rate of seedlings and the significant positive correlation between growth rate prior to analysis and levels of Hx, suggested that environmental effects on Hx accumulation were at least partially mediated through their effect on plant growth rate. After uncoupling the effect of environmental conditions from the effect of plant growth rate by statistical means the effect of temperature on Hx was no longer significant. Therefore, temperature effect was fully mediated by plant growth rate. Implications of the patterns found are discussed in issues of plant defense general theories.