GLOBAL ATMOSPHERIC CHANGE AND HORTICULTURE. IMPACT, ADAPTATION AND OPPORTUNITIES IN MITIGATION.

S.P. LONG[1], F. DOHLEMAN[1]

[1] Department of Plant Biology, University of Illinois, ERML 190, 1201 W. Gregory Dr., Urbana, Illinois 61801-3838, U.S.A. e-mail: slong@uiuc.edu

Higher temperatures and lower soil moisture have obvious effects for horticulture and our major Gardens. But there are more subtle effects that will be damaging: increased incidence of lethal summer temperatures, freezing at locations affected by cessation of the North Atlantic Drift, increased incidence of damaging winds, mismatch of plant/pollinator life cycles and direct damage from rising concentrations of surface ozone (Long et al. 2004; Long et al. 2006). Horticulture and Gardens are not just victims of global atmospheric change, but are also a key part of the solution. Plants represent one of the most important routes to replacement of fossil fuels with renewable energy. But the requirement is for lignocellulose and not nutrition, and for crops which produce a large yield with a minimum of inputs. Our major food and feed crops are poorly suited to this role. Horticulture and Gardens, provide a much greater resource of potential biomass crops. Miscanthus, derived from Gardens, not agricultural science, provides one of the most promising bioenergy crops for the temperate zone. A potential which is already being realized as the EU addresses its Kyoto Protocol commitment (Heaton et al. 2004a,b). This example emphasizes the importance of Gardens, not just for their aesthetic value, but as resource bases in addressing an uncertain future.

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