Curtis, P.S., O´Neill, E.G., Teeri, J.A., Zak, D.R., Pregitzer, K.S. (ed.): **Belowground Responses to Rising Atmospheric CO_2: Implications for Plants, Soil Biota, and Ecosystem Processes.** - Kluwer Academic Publishers, Dordrecht - Boston - London 1995. 169 pp. Hardcover DFL 135.00, US$ 89.00.

Huge amount of analyses of plant responses to elevated CO_2 in air has been done till now. Most of them have focused on processes in aboveground plant structures only, because they are generally of greater economic importance and easier to study than roots and belowground processes. It is becoming increasingly clear that a whole-plant perspective is needed to understand plant responses to elevated CO_2 in a larger time scale. In an effort to expand our understanding of belowground processes at elevated CO_2, a workshop was organized at the University of Michigan in May/June 1993. Scientists representing a broad range of disciplines presented results of current research and the contributions are presented in this volume. They are divided into four parts: Root Biology, Soil Biota, Ecosystem Processes, and Modelling.

The first part (Root Biology) is introduced by a review article written by R.J. Norby on root responses to elevated CO_2, as found both in short-term pot experiments, and in large-scale field installation (open-top chambers, free-air CO_2 enrichment). Effects of CO_2 on root turnover and decomposition are also discussed. The following three case studies (for lobolly pine, cotton, and poplar trees) present in detail root responses to elevated CO_2 at different nitrogen availability in soil. The second part of the book devoted to soil biota contains five contributions including a very useful review of complex interactions in soil compartment written by E.G. O´Neill. Soil microbial response and changes in mycorrhizal colonization of roots are described in the other four articles. Results of some more complex field studies with CO_2 enrichment are summarized in the third part of the book (ecosystem processes). Biomass production, carbon allocation and some other processes were studied not only at elevated CO_2, but simultaneously at different nitrogen or water availability. The final part (Modelling) contains only two contributions. Difficulties associated with mathematical modelling of belowground processes are discussed in one of them (by S.D. Wullschleger *et al.*), and interactions between structure and function of roots are described by K.L. Nielsen *et al.* A very interesting 4-dimensional (space and time) modelling approach was used in this work.

All the above mentioned papers have already been published in Plant and Soil Vol.165 (1994). Nevertheless, I consider their reprinting in a nicely produced book quite useful. Such a higly valuable reading deserves wide circulation.

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