

Wilkinson, R.E. (ed.): **Plant-Environment Interactions**. Second Edition. - Marcel Dekker, New York - Basel 2000. 456 pp. USD 180.00. ISBN 0-8247-0377-4.

Every environmental factor influences plant growth and development. Therefore, the research field concerning plant responses to environment is so broad, that no book covers it completely. It is important to emphasize that the second edition of the book *Plant-Environment Interactions* is not re-written first edition, but it is a quite new book - a continuation of the first one. While the first edition was focused on plant response to individual factors, this second one attempt to explain responses to multiple factors.

The first chapter is devoted to acid soil stress which involves multiple elemental toxicity and deficiency. The second chapter is focused on root morphological and physiological characteristics as effective water uptake is an important determinant of drought resistance. The third chapter briefly describes plant responses to deficiencies or surplus of nitrogen, phosphorus, potassium, calcium, magnesium, sulphur, manganese, copper, iron, zinc, boron, and molybdenum. In natural conditions, water and nutrient availability in the soil is heterogeneous and their exploitation is dependent on root growth and physiological activity as it is described in chapter 4. The chapter 5 discusses acidic and alkaline soil constraints affecting mineral nutrition of plants. The chapter 6 explain stress symptomatology on the example of

sorghum responses to fungicides. The chapter 7 deals with practical problem: irrigation with effluent water. Oxygen deficiency during waterlogging is the main item of chapter 8. The chapter 9 centres on high temperature stress and the presence and role of heat-shock proteins, while the chapter 10 on low temperature stress and the physiological basis of freezing tolerance in plants. The chapter 11 is devoted to effects of air humidity on evapotranspiration, xylem cavitation occurrence, stomatal opening and leaf water potential. The chapter 12 examines the influence of wind on heat and mass exchange between the canopy boundary layer and atmosphere. Interactions between soil physical conditions and plant growth are described in the chapter 13. The chapter 14 is focused on phytochromes, an important photomorphogenetic pigment system, and the last one, chapter 15, on phytoremediation.

All the problems are discussed in a very matter-of-fact way and presented in a concise form. Each chapter is written by an acknowledged expert or group of experts who present their individual ideas and interpretations of specific subject matter. It is an extremely rich source of most recent information for specialists in various fields of plant physiology, ecology, botany, agriculture, horticulture and forestry.

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